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

JUSTIFICATION OF ESTIMATES
FEBRUARY 2004

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

DEPARTMENT OF THE NAVY
FY 2005 RDT&E PROGRAM

EXHIBIT R-1

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

Date: February 2004

Line No	Program Element Number	Item	Act	Thousands of Dollars FY 2003	FY 2004	FY 2005	SEC
159							
160							
161	0101221N	Strategic Sub & Weapons System Support	7	38,099	65,454	108,782	U
162	0101224N	SSBN Security Technology Program	7	32,718	37,981	43,408	U
163	0101226N	Submarine Acoustic Warfare Development	7	1,057	5,889	8,453	U
164	0101402N	Navy Strategic Communications	7	14,637	23,035	31,391	U
165	0203761N	Rapid Technology Transition (RTT)	7		9,889	14,630	U
166	0204136N	F/A-18 Squadrons	7	204,131	172,743	134,580	U
167	0204152N	E-2 Squadrons	7	18,878	19,331	6,055	U
168	0204163N	Fleet Telecommunications (Tactical)	7	12,048	23,123	19,784	U
169	0204229N	Tomahawk and Tomahawk Mission Planning Center (TMPC)	7	97,284	76,524	28,776	U
170	0204311N	Integrated Surveillance System	7	25,186	14,117	16,965	U
171	0204413N	Amphibious Tactical Support Units (Displacement Craft)	7	6,106	5,589	2,604	U
172	0204571N	Consolidated Training Systems Development	7	25,974	22,460	21,644	U
173	0204574N	Cryptologic Direct Support	7		1,448	1,460	U
174	0204575N	Electronic Warfare (EW) Readiness Support	7	25,906	11,794	12,139	U
175	0205601N	HARM Improvement	7	58,793	51,601	163,371	U
176	0205604N	Tactical Data Links	7	40,024	43,971	18,977	U
177	0205620N	Surface ASW Combat System Integration	7	36,065	23,118	10,612	U

DEPARTMENT OF THE NAVY
FY 2005 RDT&E PROGRAM

EXHIBIT R-1

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

Date: February 2004

Line No	Program Element Number	Item	Act	Thousands of Dollars FY 2003	FY 2004	FY 2005	SEC
178	0205632N	MK-48 ADCAP	7	21,323	17,036	21,620	U
179	0205633N	Aviation Improvements	7	38,878	68,552	62,635	U
180	0205658N	Navy Science Assistance Program	7	15,459	7,098	3,821	U
181	0205675N	Operational Nuclear Power Systems	7	55,430	62,052	64,554	U
182	0206313M	Marine Corps Communications Systems	7	197,524	247,179	268,638	U
183	0206623M	Marine Corps Ground Combat/ Supporting Arms Systems	7	37,552	41,960	44,828	U
184	0206624M	Marine Corps Combat Services Support	7	16,682	20,493	10,731	U
185	0207161N	Tactical AIM Missiles	7	2,812	2,236	4,061	U
186	0207163N	Advanced Medium Range Air-to-Air Missile (AMRAAM)	7	7,650	8,973	9,085	U
187							
188							
189							
190	0303109N	Satellite Communications (SPACE)	7	110,463	267,665	573,092	U
191	0303140N	Information Systems Security Program	7	25,733	25,366	18,676	U
192							
193	0305149N	COBRA JUDY	7	50,510	68,583	80,694	U
194	0305160N	Navy Meteorological and Ocean Sensors-Space (METOC)	7	21,833	7,878	4,215	U
195	0305188N	Joint C4ISR Battle Center (JBC)	7	29,371	44,865	43,569	U
196	0305192N	Joint Military Intelligence Programs	7	6,971	5,246	4,746	U

DEPARTMENT OF THE NAVY
FY 2005 RDT&E PROGRAM

EXHIBIT R-1

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

Date: February 2004

Line No	Program Element Number	Item	Act	Thousands of Dollars FY 2003	FY 2004	FY 2005	SEC
197	0305204N	Tactical Unmanned Aerial Vehicles (JMIP)	7	253,844	85,713	53,439	U
198	0305205N	Endurance Unmanned Aerial Vehicles	7		100,212	113,438	U
199	0305206N	Airborne Reconnaissance Systems	7	16,171	26,989	10,191	U
200	0305207N	Manned Reconnaissance Systems (JMIP)	7	22,505	16,521	20,203	U
201	0305208N	Distributed Common Ground/Surface Systems	7	8,518	8,818	3,635	U
202	0305927N	Naval Space Surveillance	7	5,017			U
203	0307207N	Aerial Common Sensor (ACS) (JMIP)	7			24,909	U
204	0308601N	Modeling and Simulation Support	7	9,455	13,475	7,262	U
205	0702207N	Depot Maintenance (Non-IF)	7	12,839	8,972		U
206	0708011N	Industrial Preparedness	7	71,704	64,270	56,565	U
207	0708730N	Maritime Technology (MARITECH)	7	11,613	14,504	10,265	U
		TOTAL Operational Systems Development		2,917,062	2,898,174	3,161,988	

Fiscal Year 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, **[**$15,146,383,000**]** *$16,346,391,000*, to remain available for obligation until September 30, **[**2005**]** *2006*: *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, 2004.)*

[For an additional amount for ''Research, Development, Test and Evaluation, Navy'', $34,000,000, to remain available until September 30, 2005.**]** *(Emergency Supplemental Appropriations Act for Defense and for the Reconstruction of Iraq and Afghanistan, 2004.)*

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: **Feb 2004**	
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 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost		**38.1**	**65.5**	**108.8**	**111.0**	**110.4**	**113.8**	**114.7**
0004 TRIDENT Submarine System Improvement		5.2	4.0	2.6	3.5	3.3	3.4	3.5
2228 Technology Applications Program		32.9	61.5	106.2	107.5	107.1	110.4	111.2

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

The TRIDENT II (D5) Submarine Launched Ballistic Missile (SLBM) provides the U.S. a weapon system with greater accuracy and payload capability as compared to the TRIDENT I (C4) system. TRIDENT II enhances U.S. strategic deterrence providing a survivable sea-based system capable of engaging the full spectrum of potential targets with fewer submarines. This Program Element supports investigations into new technologies which would help mitigate the program impact due to component obsolescence and a rapidly decreasing manufacturing support base. These efforts include Reentry System Applications and Guidance System Applications, Radiation Hardened Electronics Applications, and Strategic Propulsion Applications. The TRIDENT Submarine System Improvement Program develops and integrates command and control Improvements needed to maintain TRIDENT Submarine operational capability through the life cycle of this vital strategic asset. The program conducts efforts needed to maintain strategic connectivity, ensure platform invulnerability, and reduce lifecycle costs through Obsolete Equipment Replacement (OER) and commonality.

The 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 comparitively 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 (SFMPL) 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.

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification	DATE: **Feb 2004**
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:

	FY 2003	FY 2004	FY2005
FY 2004 President's Budget:	39.2	104.8	139.6
FY 2005 President's Budget	38.1	65.5	108.8
Total Adjustments:	-1.1	-39.3	-30.8
Summary of Adjustments:			
SBIR transfer	-0.6		
Congressional Plus up		1.0	
Closed Account Billings	-0.5		
Congressional Reductions		-39.6	
Delete Effectiveness Enhancement (E2) Demonstration			-30.3
Inflation, NCWF Rates, Efficiency reductions		-0.7	-0.5

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.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **Feb 2004**
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7**	PROJECT NUMBER AND NAME **Technology Applications 2228**	

COST ($ in Millions)		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost 2228 Technology Applications		**32.9**	**61.5**	**106.2**	**107.5**	**107.1**	**110.4**	**111.2**
RDT&E Articles Qty								

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

This project supports implementation of a coordinated Navy/Air Force Reentry System Applications Program (RSAP), a coordinated Navy/Air Force Strategic Guidance Applications Program (GAP), a coordinated Navy/Air Force Strategic Propulsion Applications Program (SPAP), and a coordinated Department of Defense Radiation Hardened Applications Program (RHAP). Reentry vehicle and guidance technology had been rapidly eroding beyond the point of being capable to respond to increasing aging phenomena and future requirements. Beginning in FY 2004, SPAP demonstrates and validates technologies unique to strategic missile applications. Also beginning in FY 2004, the RHAP program addresses production, qualification and manufacturing issues associated with strategic and space radiation hardened electronics. The December 2001 DOD Nuclear Posture Review determined that infrastructure is a critical part of the new triad and these efforts form part of the infrastructure that supports the nuclear force structure.

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

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

• The SPAP program, commencing in FY 2004, is a coordinated Navy/Air Force effort and addresses infrastructure needs by exercising critical developmental skills to allow for future large-scale rocket motor test firings. A sound base of demonstrated technologies suitable for Strategic Missile applications will be maintained and will provide the nation a talent base and source of technologies suitable for a follow-on development program. Boost propulsion (missile stages), post boost propulsion (missile payload delivery vehicle) and Ordnance (separation events and flight termination events) are all integral parts of missile propulsion application efforts.

• The RHAP program, commencing in FY 2004, sustains critical skills in radiation hardened electronics by advancing radiation hardened simulation technologies to reflect the processes in future systems. These efforts become of greater importance because of the shrinking industrial base for radiation hardened electronics, the unavailability of underground testing resources, and the loss of radiation hardened expertise. These efforts are coordinated by the Radiation Hardened Oversight Council (RHOC) chaired by the Director, Defense Research & Engineering (DDR&E). The RHAP program focuses on a coordinated Productization & Qualification Program which provides a transition between Science and Technology (S&T) and production by efficient utilization of limited resources, sharing of information to eliminate redundancy, increased use of common part/technologies, coordination into the RHOC technology road map and implementation of the USD (AT&L) investment strategy. The RHAP will compliment the GAP electronic part activities by specifically focusing on those tasks required to ensure producability of radiation hardened parts. □

EXHIBIT R-2a, RDT&E Project Justification	DATE: Feb 2004
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7**	PROJECT NUMBER AND NAME **Technology Applications 2228**

B. (U) Accomplishments/Planned Program

		FY 03	FY 04	FY 05
Reentry Systems Application Program (RSAP)		19.0	22.3	26.1
RDT&E Articles Quantity				

(U) FY 2003 PLAN
- (U) ($19.0) Continue Reentry System Applications Program. Full obligation is complete.
  FY 2003 efforts included:
  - (U) Continued development and ground testing of reentry vehicle candidate heatshield, nosetip and aft closure materials including those available from Science & Technology (S&T).
  - (U) Identified and evaluate next generation low-cost heatshield material candidates.
  - (U) Conducted 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) Downselected low-cost design approach and components for Arming and Fuzing applications.
  - (U) Downselected a low-cost inertial sensor technology for Reentry Body (RB) flight test instrumentation.
  - (U) Maintained RSAP technical program plan, conducted system assessments and continued Vulnerability & Hardening certification process in absence of Nuclear Under Ground Testing (UGT) facilities.

(U) FY 2004 PLAN
- (U) ($22.3) Continue Reentry System Applications Program. Full obligation is projected by the 3rd quarter of the 1st year..
  FY 2004 efforts include:
  - (U) Continue to maintain the current capability and implement planned service life extension of Navy reentry systems.
  - (U) Assess data relating to aging trends to establish the impact on system performance and address any effects on the extended service of the deployed systems. Plan and execute test programs for the evaluation of aging effects and the development of predictive methodologies to mitigate the risks associated with aging mechanisms and the planned extended service of the deployed Navy reentry systems.
  - (U) Continue with the development, test, and assessment of replacement heatshield, nosetip, and aft closure materials for use on reentry systems, including those available from Science and Technology (S&T). Make recommendations for improved material thermal protection concepts and test techniques.
  - (U) Continue development of low-cost design approach and components for Arming and Fuzing applications.
  - (U) Assess, integrate, and test reentry system instrumentation, including software and hardware development for avionics computer, GPS, and inertial sensor technology.
  - (U) Maintain the RSAP technical program plan, and conduct system assessments as required.
  - (U) Continue development and improvement of analytical models and techniques for predicting reentry body and components response to stressing environments.
  - (U) Improve methods of assessing the vulnerability and hardness of reentry systems in the absence of underground testing (UGT).

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: **Feb 2004**
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7**	PROJECT NUMBER AND NAME **Technology Applications 2228**

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

(U) FY 2005 PLAN

•(U) ($26.1) 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

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: **Feb 2004**
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7**	PROJECT NUMBER AND NAME **Technology Applications 2228**

	FY 2003	FY 2004	FY 2005
Guidance Application Program (GAP)	13.9	18.4	20.6
RDT&E Articles Quantity			

(U) FY 2003 PLAN
- (U) ($13.9) Continue Strategic Guidance Applications Programs (GAP). Full obligation is complete.
  FY 2003 efforts included:
  - (U) Continued to develop advance sensor models for incorporation in Integrated Engineering Environment (IEE). Integrate Interferometic Fiber Optic Gyro (IFOG), the Hemospherical Resonator Gyro (HRG), and the Alternate PIGA into Strategic Inertial Guidance Hardware Technology Synthesizer (SIGHTS). Utilize IEE/SIGHTS capability to perform system architecture/design tradeoffs in support of technology downselect in FY 2006 for D5 Life Extension.
  - (U) Continued 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) ($18.4) 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) Invest in non-volatile non-destructive memory development to meet MK6 Life Extension memory goals
  - (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 dynamic and radiation margin in support of Life Extension.
  - (U) (GYRO) Develop IFOG hardenable electronic circuits.

(U) FY 2005 PLAN
- (U) ($20.6) 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) Invest in non-volatile non-destructive memory development to meet MK6LE memory goals.
  - (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 dynamic and radiation margin in support of Life Extension.
  - (U) (GYRO) Develop IFOG hardenable electronic circuits.
  - (U) (Stellar) Invest in Electron Bombarded (intensified) CCD and Active Pixel sensors for advanced system concepts.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: Feb 2004
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7**	PROJECT NUMBER AND NAME **Technology Applications 2228**

B. (U) Accomplishments/Planned Program

		FY 03	FY 04	FY 05
Strategic Propulsion Applications Program (SPAP)		0.0	7.9	39.5
RDT&E Articles Quantity				

(U) FY 2003 PLAN N/A
•

(U) FY 2004 PLAN
- (U) ($7.9) 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 motor test.
  - (U) Identify and evaluate suitable technologies for post boost propulsion technologies test.
  - (U) Identify and evaluate suitable technologies for ordnance technologies test.
  - (U) Identify boost motor test fabrication hardware.

(U) FY 2005 PLAN
- (U) ($39.5) 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 motor components by testing and prepare for a boost rocket motor test demonstration.
  - (U) Initiate component tests for identified post boost control technologies.
  - (U) Initiate component tests for identified missile ordnance technologies.
  - (U) Complete fabrication of boost motor test hardware
  - (U) Identify post boost motor test fabrication hardware.
  - (U) Identify ordnance test fabrication hardware.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: Feb 2004
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7**	PROJECT NUMBER AND NAME **Technology Applications 2228**

B. (U) Accomplishments/Planned Program

		FY 03	FY 04	FY 05
Radiation Hardened Applications Program (RHAP)		0.0	12.9	20.0
RDT&E Articles Quantity				

(U) FY 2003 PLAN N/A
•

(U) FY 2004 PLAN
- (U) ($12.9) Initiate RHAP program. Full obligation is projected by the 3rd quarter of the first year.
  FY 2004 efforts include:
  - (U) Initiate and complete a Radiation Hardened Industrial Base Assessment.
  - (U) Start productization of .35 micron digital Silicon-On-Insulator (SOI) technology
  - (U) Start productization of .7 micron mixed signal SOI technology.
  - (U) Start technology/product development of alternate non-volatile memories, including Chalcogenide (CRAM), Magnetic (MRAM), and Silicon-On-Nitride (SONOS) technologies.
  - (U) Identify, evaluate and down-select a physics based model for nuclear radiation effects (Electromagnetic Pulse ((EMP)) and X-ray) on missile and missile components.
  - (U) Identify, evaluate, and down-select a physics based modeling method for nuclear radiation effects (System Generated EMP ((SGEMP)) on missile cables and connectors.
  - (U) Identify and evaluate potential built in self test system circuit models and develop a strategy for modeling nuclear radiation effects.
  - (U) Start evaluation of post radiation SPICE models for dose rate, total ionizing dose events

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 physics based modeling method for nuclear radiation effects (EMP and X-ray) on missile and missile components.
  - (U) Continue physics based modeling method for nuclear radiation effects (SGEMP) on missile cables and connectors.
  - (U) Begin physics based modeling for nuclear radiation effects on modern built in self test circuits.
  - (U) Continue evaluation and validation of post radiation SPICE models for dose rate, total ionizing dose, and single event effects.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: **Feb 2004**
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7**	PROJECT NUMBER AND NAME **Technology Applications 2228**

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

FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Total Complete	Total Cost
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:

- LMMS / CA - Reentry Body Systems integration (RSAP)
- NSWC / VA - Heatshield Nosetip materials development (RSAP)
- ITT / CO - Vulnerability and hardness technologies (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)
- DOE/NM - Evaluation of candidate commercially avalable radiation hardened Field Programmable Gate Arrays (FPGAs) (RHAP)
- NAWC/CA - Rocket motor testing & integration(SPAP)
- LMMS/CA - Missile systems integration (SPAP)

CLASSIFICATION:

Exhibit R-3 Cost Analysis		DATE: **Feb 2004**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT **PE 0101221N Strategic Sub & Wpns Sys Spt**	PROJECT NUMBER AND NAME **Technology Applications 2228**

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 & Management												
Technology Applications	SS - CPFF	LMMS / CA	49.0	8.7	10-02	12.4	10-03	16.0	10-04	Cont.	Cont.	TBD
Technology Applications	WR	NSWC / CA	35.8	4.7	10-02	5.9	10-03	6.4	10-04	Cont.	Cont.	TBD
Technology Applications	MIPR	DOE / NM	12.6	4.5	10-02	0.8	10-03	0.0	10-04	Cont.	Cont.	TBD
Technology Applications	SS - CPFF	CSDL / MA	5.5	0.1	10-02	1.0	10-03	2.1	10-04	Cont.	Cont.	TBD
Technology Applications	SS - CPFF	KAMAN / CO	4.5	0.0	10-02	0.0	10-03	0.0	10-04	Cont.	Cont.	TBD
Technology Applications	SS - CPFF	ITT / CO	N/A	1.0	10-02	1.5	10-03	1.6	10-04	Cont.	Cont.	TBD
Technology Applications	SS - CPFF	CSDL / MA	106.1	13.9	10-02	18.4	10-03	20.6	10-04	Cont.	Cont.	TBD
Technology Applications	SS - CPFF	CSDL / MA	N/A			11.0	10-03	16.0	10-04	Cont.	Cont.	TBD
Technology Applications	SS - CPFF	LMMS/CA	N/A			6.8	10-03	33.5	10-04	Cont.	Cont.	TBD
Technology Applications	SS - CPFF	LMMS/CA	N/A			1.7	10-03	3.0	10-04	Cont.	Cont.	TBD
Technology Applications	MIPR	DOE / NM	N/A			0.7	10-03	1.0	10-04	Cont.	Cont.	TBD
Technology Applications	MIPR	DOE / NM	N/A					1.0	10-04	Cont.	Cont.	TBD
Technology Applications	WR	NSWC / CA	N/A					0.8	10-04	Cont.	Cont.	TBD
Technology Applications	WR	NAWC/CA	N/A			0.8	10-03	3.8	10-04	Cont.	Cont.	TBD
	VARIOUS	VARIOUS	N/A			0.5	10-03	0.4	10-04	Cont.	Cont.	TBD
Subtotal Product Development			213.5	32.9		61.5		106.2		Cont.	Cont.	TBD
Remarks:												
Total Cost			213.5	32.9		61.5		106.2		Cont.	Cont.	
Remarks:												

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	**PE 0101221N Strategic Sub & Wpns Sys Spt**	**0004**

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 acic 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			0.094	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	0.322	0.372	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).

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	**PE 0101221N Strategic Sub & Wpns Sys Spt**	**0004**

B. Accomplishments/Planned Program (Cont.)

	FY 02	FY 03	FY 04	FY 05
Data Processing System Development		0.881		
RDT&E Articles Quantity				

To evaulate potential areas of renovation and to identify a phased approach that facilitiates 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 Workstatioin 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.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	**PE 0101221N Strategic Sub & Wpns Sys Spt**	**0004**

B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
Thin Plate Lead Acid Battery			1.000	
RDT&E Articles Quantity				

Thin Plate Pure Lead Batteries - Submarine main storage batteries are the primary back-up source of power for nuclear submarines. Thin Plate Pure Lead technology (TPPL) is designed to improve the efficiency of the chemical reaction that occurs on the plates of batteries. Hence, incorporating TPPL technology into submarine batteries could significantly increase the achievable energy, power density and life of future submarine batteries. This effort would attempt to scale up the current TPPL product to a size suitable for use in submarine main storage batteries. It is possible that by coupling TPPL plates with VRLA battery technology, the Navy could further increase the energy, power density and life of VRLA submarine main storage batteries. The increase in battery life could result in a commensurate reduction in life cycle cost.

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

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

R-1 SHOPPING LIST - Item No. 161

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	**PE 0101221N Strategic Sub & Wpns Sys Spt**	**0004**

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	5.203	3.966	2.569
Total Adjustments	-0.014	-0.196	-0.446	-1.743
Summary of Adjustments				
Congressional undistributed reductions	-0.003	-0.062	-0.827	-0.450
Reprogrammings			-0.500	-1.200
FY03 Update		0.001		
FY02 Actuals	-0.011			
PBD430				0.008
PBD426				0.012
PBD203			-0.052	-0.052
PBD604			-0.068	-0.066
Inflation Savings		-0.068		
FY03 SBIR		-0.053		
BSO Adjustments		-0.014		
Thin Plate Pure Lead Batteries			1.000	
NWCF Rates Adjustments			0.001	0.005
Subtotal	-0.014	-0.196	-0.446	-1.743

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 □

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	**PE 0101221N Strategic Sub & Wpns Sys Spt**	**0004**

D. 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 Complete	Total Cost
267600 / 267606 BA2 OPN (Electronics)	9233	17551	8496	5265	3419	4010	4082	4159	0	56215
095000 BA1 (HM&E)	21065	39434	27604	7308	5346	12736	17149	19373	0	150015
094500 / 094505 BA1 (Batteries)	10684	13564	11386	26077	24096	30829	14396	14561	0	145593

E. ACQUISITION STRATEGY: *

VRLA Battery - The Type Commanders (TYCOMs) establish battery replacement schedules based on battery performance and maintenance availability. Beginning in FY05, NAVSEA intends to shift procurement from flooded batteries to VRLA. In FY06, the only replacement batteries available will be VRLA; thus the SHIPALT must be accomplished to support installations beginning in FY06.

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 be 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, In: 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

Thin Plate Pure Lead Battery - NSWC Crane

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

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**			PROGRAM ELEMENT **PE 0101221N Strategic Sub & Wpns Sys Spt**			PROJECT NUMBER AND NAME **0004**						
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	
Design/Development Engineering	SS/CPFF	Electric Boat, Groton, CT		0.800	01/03	0.094	01/04	0.000	N/A	0.000	0.894	0.894
Design/Development Engineering	SS/CPFF	NG NNEWS, VA		1.270	01/03	0.000	01/04	0.000	N/A	0.000	1.270	1.270
Design/Development Engineering	SS/PD	SUPSHIP Groton, CT		0.500	03/04	1.054	03/04	0.000	N/A	0.000	1.554	1.554
Developmental Test & Evaluation	SS/WR	NSWC CRANE, IN		1.430	01/03	2.446	03/04	0.000	N/A	0.000	3.876	3.876
Design/Development Engineering	SS/WR	NSWC Carderock, MD		0.000		0.000	01/04	2.020	01/05	0.000	2.020	2.020
Design/Development Engineering	SS/WR	NUWC Newport, RI	0.547	0.480	01/03	0.372	01/04	0.549	01/05	0.000	1.948	1.948
Developmental Test & Evaluation	SS/WR	NUWC Newport, RI		0.723	01/03			0.000		0.000	0.723	0.723
											0.000	
Subtotal Product Development			0.547	5.203		3.966		2.569		0.000	12.285	

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	
											0.000	
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	

Remarks:

R-1 SHOPPING LIST - Item No. 161

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: **February 2004**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**			PROGRAM ELEMENT **PE 0101221N Strategic Sub & Wpns Sys Spt**			PROJECT NUMBER AND NAME **0004**						
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	
											0.000	
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	
Total Cost			0.547	5.203		3.966		2.569		0.000	12.285	

Remarks:

R-1 SHOPPING LIST - Item No. 161

EXHIBIT R-2, RDT&E Project Justification						DATE: FEBRUARY 2004	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT NUMBER AND NAME **Sub Acoustic Warfare Development/0101226N**				PROJECT NUMBER AND NAME Submarine Defensive Warfare Systems/1265		
COST ($ in Millions)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	**1.057**	**5.889**	**8.453**	**8.633**	**8.793**	**8.970**	**9.150**
RDT&E Articles Qty							

Defense Emergency Responses Funds (DERF): Not Applicable

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) efforts entails simulation and effectiveness analysis of new technologies from Future Naval Capability (FNC) and SBIR efforts at the Weapons Analysis Facility (WAF). The WAF analysis provides the US Navy with robust testing of new hardware and software within a detailed representation of complex acoustic environments. 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.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **FEBRUARY 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N /BA-7	**Sub Acoustic Warfare Dev/0101226N**	Submarine Defensive Warfare Systems/1265

B. Accomplishments/Planned Program

Acoustic Intercept	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.581	0.900	0.700
RDT&E Articles Quantity			

FY03 - FY04 - Continue Acoustic Intercept Technology transition.
FY03 - Conduct at Sea-Tests (TACDEVEX)
FY04 - Conduct SACA/ SPVA Sea-Test to confirm performance and validate configuration for FY06 production.
FY05 - Participate in APB 05 Sea-Test.

WAF Analysis	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.476	1.989	1.253
RDT&E Articles Quantity			

FY 03-06 - Continue to conduct countermeasure proofing and effectiveness analysis for designated torpedo at Weapons Analysis Facility (WAF) .

ATT AUR Development	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.000	6.500
RDT&E Articles Quantity			

FY 05 - Begin commonality Integration/development of ATT AUR for Submarine using a modified Submarine CSA MK 2 Launcher system.
FY 06 - Continue ATT Development and Submarine Integration. Conduct at-sea Submarine Launch Capability Test using a modified CSA MK2 Launcher.

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

FY06-Begin transition of Future Naval Capability (FNC) technologies into existing fleet countermeasures.

SLWW	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	3.000	0.000
RDT&E Articles Quantity			

FY04- Conduct captive carry and verticle launch demonstration of AIM-9 missle and associated systems engineering studies.

R-1 SHOPPING LIST - Item No. 163

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **FEBRUARY 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N /BA-7	**Sub Acoustic Warfare Dev/0101226N**	Submarine Defensive Warfare Systems/1265

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2003	FY 2004	FY 2005
Previous President's Budget: (FY 04 Pres Controls)	1.065	2.955	8.580
Current President's Budget: (FY05 Pres Controls)	1.057	5.889	8.453
Total Adjustments	-0.008	2.934	-0.127
Summary of Adjustments			
Miscellaneous Adjustment	-0.008	-0.066	-0.127
Submarine Launched Littoral Warfare Congressional Plus-Up	0.000	3.000	0.000
Subtotal	-0.008	2.934	-0.127

Schedule:

Not Applicable

Technical:

Not Applicable

R-1 SHOPPING LIST - Item No. 163

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: **FEBRUARY 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
RDT&E, N /BA-7	**Sub Acoustic Warfare Dev/0101226N**	Submarine Defensive Warfare Systems/1265	

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
OPN - 221000/221005 Submarine Acoustic Warfare Systems	20.485	25.937	20.857	23.563	25.326	25.924	31.314	CONT.	CONT.

E. ACQUISITION STRATEGY:

See Attached Schedule

F. MAJOR PERFORMERS:

See Attached R-3

R-1 SHOPPING LIST - Item No. 163

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)

DATE: **FEBRUARY 2004**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME
RDT&E, N /BA-7	**Sub Acoustic Warfare Dev/0101226N**	Submarine Defensive Warfare Systems/1265

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	FY 06 Cost	FY 06 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Hardware Analysis	WX	NUWC Newport, RI	0.000	0.807	12/02	0.600	12/03	1.047	12/04			CONT.	0.000	
Systems Engineering	WX	NUWC Newport, RI	0.000	0.000		0.900	02/04	0.500				CONT.	0.000	
Systems Engineering	CPFF	PSU, State College, PA	0.000	0.000		0.000		5.971	02/05			CONT.	0.000	
SLWW	CPFF	Raytheon Middleton, RI	0.000	0.000		3.000	04/04	0.000				CONT.	0.000	
Subtotal Product Development			0.000	0.807		4.500		7.518					12.825	

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						1.139		0.685					1.139	
Subtotal Support			0.000	0.000		1.139		0.685					1.824	

Remarks: * FY04 control will be reduced by $900K via BTR into PE 0205632N, Subhead H740.

R-1 SHOPPING LIST - Item No. 163

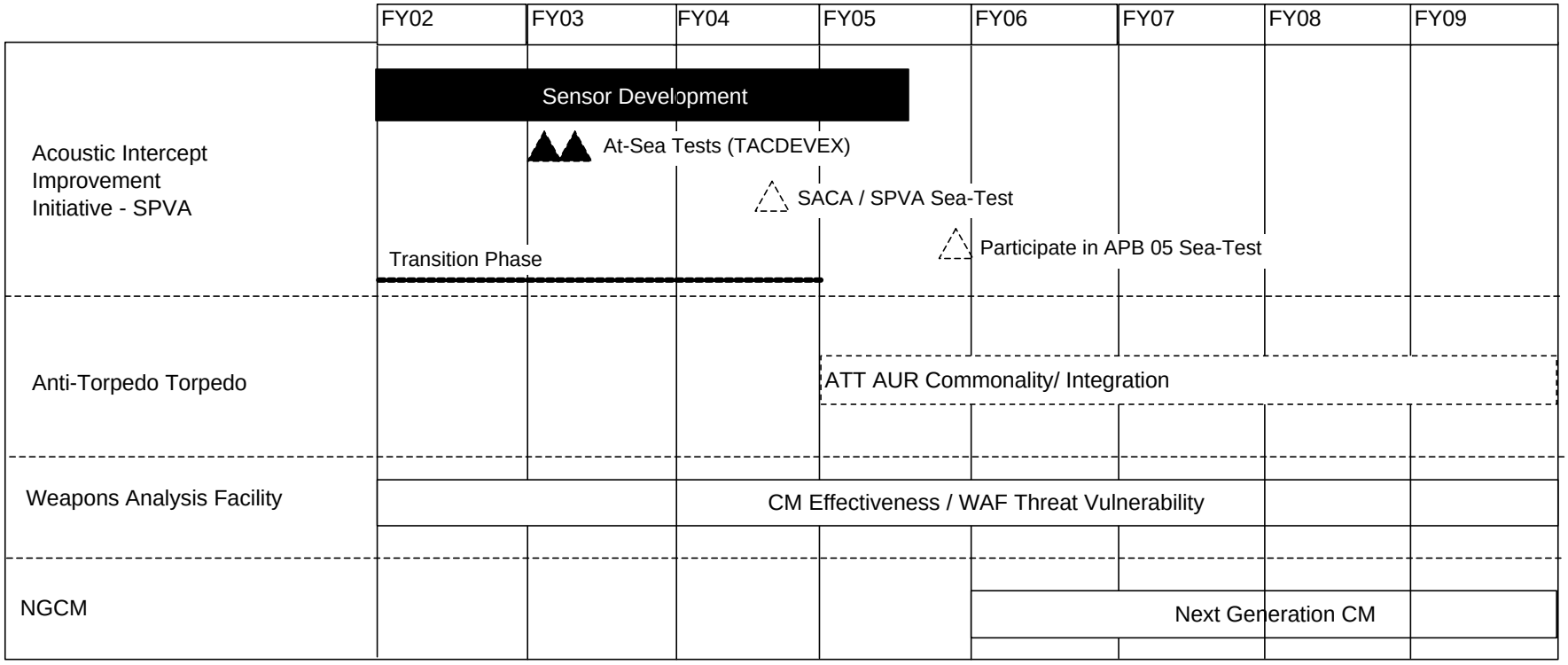
CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE:		DATE: FEBRUARY 2004				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /BA-7**		PROGRAM ELEMENT **Sub Acoustic Warfare Dev/0101226N**			PROJECT NUMBER AND NAME Submarine Defensive Warfare Systems/1265									
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	FY 06 Cost	FY 06 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation													0.000	
Operational Test & Evaluation													0.000	
Live Fire Test & Evaluation													0.000	
Test Assets													0.000	
Tooling													0.000	
GFE													0.000	
Award Fees													0.000	
Subtotal T&E			0.000	0.000		0.000		0.000					0.000	
Remarks:														
Contractor Engineering Support													0.000	
Government Engineering Support													0.000	
Program Management Support	C/CPFF	EG&G Gaithersburg, MD	0.000	0.200	06/03	0.200	11/03	0.200	11/04			CONT.	0.600	
Travel		PMS415	0.000	0.050	11/02	0.050	11/03	0.050	11/04			CONT.	0.150	
Labor (Research Personnel)													0.000	
SBIR Assessment													0.000	
Subtotal Management			0.000	0.250		0.250		0.250					0.750	
Remarks:														
Total Cost			0.000	1.057		5.889		8.453					15.399	
Remarks:														

R-1 SHOPPING LIST - Item No. 163

CLASSIFICATION:

EXHIBIT R-4, RDT&E Project Justification		DATE: **FEBRUARY 2004**
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/1265



R-1 SHOPPING LIST - Item No. 163

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: **February 2004**	
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7**					R-1 ITEM NOMENCLATURE 0101402N Navy Strategic Communications			
COST ($ in Millions)		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost		**14.637**	**23.035**	**31.391**	**32.538**	**23.406**	**17.591**	
H0793 E-6 Service Life Assessment		**0.795**	**3.093**	**3.228**	**4.217**			
H3002 Navy Strategic Communications Block 1		**13.842**	**19.942**	**28.163**	**28.321**	**23.406**	**17.591**	

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 (IAT), 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 E-6B Block I program corrects Airborne National Command Post program FOT&E operational suitability deficiencies and addresses legacy system obsolescence issues. Without the Block I program, legacy system obsolescence will result in several unsupportable mission systems by 2010. Block I consists of the design, development, integration, and testing of the replacements for the existing Digital Airborne Intercommunications Switching System (DAISS)/Intercommunications System (ICS), Mission Computer System (MCS), and Ultra-High Frequency Command, Control and Communications (UHF C3) system. The Block I project also incorporates an Open Systems Architecture (OSA), adds improved operator workstations throughout the aircraft, which in addition to reducing workload and improving system interoperability, provides a foundation for future evolutionary upgrades. Other modifications enhance power and cooling capabilities for ground operations without any ground support.

Block I is STRATCOM's FY02 Integrated Priority List (IPL) no. 1 item and is fully supported in STRATCOM's FY03 IPL. Secretary of Defense's March 2003 Nuclear Posture Review implementation requires that the service fund E-6 sustainability, survivability, and modernization. The 2004-2009 Defense Planning Guidance supports accelerated completion of the Block I program.

R-1 SHOPPING LIST - Item No. 164

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2004**	
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 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost		**0.795**	**3.093**	**3.228**	**4.217**			
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 (IAT), and optimize the E-6 Maintenance Plans. The contractor will perform preliminary high level trade studies of potential modifications to increase the service life.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0101402N Navy Strategic Communications	H0793 E-6 Service Life Assessment

B. Accomplishments/Planned Program

		FY 03	FY 04	FY 05
Engineering and Technical Support / $7.116		0.795	3.093	3.228
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 85 percent of the fleet should exceed; perform damage tolerance analysis to determine critical location inspection techniques and intervals; evaluate life enhancement potential for life-critical locations; modify the LOOPIN fatigue damage algorithms to accept available individual aircraft data (3M, NAVAIR form 13920/1, Structural Data Recording Set (SDRS), and structural configuration) to calculate individual aircraft fatigue life expended (FLE) values for all critical locations; validate SDRS for baseline individual aircraft FLE values; develop damage tolerance algorithms to accept available individual aircraft data (3M, NAVAIR form 13920/1, Structural Data Recording Set (SDRS), and structural configuration) to calculate individual aircraft crack size (growth) values for all critical locations.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0101402N Navy Strategic Communications	H0793 E-6 Service Life Assessment

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2003	FY 2004	FY 2005
Previous President's Budget:	2.829	3.128	0.979
Current BES/President's Budget	0.795	3.093	3.228
Total Adjustments	-2.034	-0.035	2.249
Summary of Adjustments			
Congressional program reductions			
Congressional undistributed reductions		-0.035	
Congressional rescissions			
SBIR/STTR Transfer	-0.057		
Economic Assumptions			-0.011
Reprogrammings	-1.977		
Other Navy/OSD Adjustments			
Congressional increases			
Reprioritization			2.260
Subtotal	-2.034	-0.035	2.249

Schedule:

The change in schedule is due to the funding realignment that occurred during the Navy's review of the SLAP budget.

Technical:

Not Applicable

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0101402N Navy Strategic Communications	H0793 E-6 Service Life Assessment

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
056400 E-6A/B Series	56.076	48.157	19.721	11.462	17.568	59.687	69.158	232.475	514.304

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 FY04. SLAP analysis is the precursor to an effective SLEP program, needed to keep this aircraft a viable Strategic Asset.

F. MAJOR PERFORMERS: **

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**		PROGRAM ELEMENT 0101402N Navy Strategic Communications			PROJECT NUMBER AND NAME 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	
											0.000	
Subtotal Product Development			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Studies & Analyses	SS/CPFF	Boeing Seattle, WA				2.348	03/04	1.537	10/04	1.252	5.137	5.137
Studies & Analyses - IAT	SS/CPFF	Boeing Seattle, WA						0.664	10/04	1.879	2.543	2.543
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Support			0.000	0.000		2.348		2.201		3.131	7.680	
Remarks:												

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**			PROGRAM ELEMENT 0101402N Navy Strategic Communications			PROJECT NUMBER AND NAME 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	
Subtotal T&E			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Government Engineering Support	WX	NAWCAD PAX RIVER, MD		0.544	10/02	0.398	10/03	0.545	10/04	0.573	2.060	
Government Engineering Support	WX	NADEP JAX, FL		0.251	10/02	0.327	10/03	0.462	10/04	0.493	1.533	
Travel	Various	Various				0.020	Various	0.020	Various	0.020	0.060	
											0.000	
											0.000	
											0.000	
Subtotal Management			0.000	0.795		0.745		1.027		1.086	3.653	
Remarks:												
Total Cost			0.000	0.795		3.093		3.228		4.217	11.333	
Remarks: There is no Product Development related to this program.												

R-1 SHOPPING LIST - Item No. 164

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																															DATE: **February 2004**
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
Contract Award										Contract Award																						
SLAP Phase 1 - Load and Stress Analysis and Critical Area Selection																		Phase 1														
SLAP Phase 2 - Detailed Analysis of Critical Areas with SLEP Modification Recommendations																						Phase 2										
SLAP Phase 3 - Individual Aircraft Tracking (IAT) System																						Phase 3										

R-1 SHOPPING LIST - Item No. 164

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

CLASSIFICATION:

Exhibit R-4a, Schedule Detail					DATE: **February 2004**			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT 0101402N Navy Strategic Communications				PROJECT NUMBER AND NAME H0793 E-6 Service Life Assessment			
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Contract Award			2Q					
SLAP Phase 1			2Q-4Q	1Q-4Q				
SLAP Phase 2				3Q-4Q	1Q-4Q			
SLAP Phase 3 - IAT				3Q-4Q	1Q-4Q			

R-1 SHOPPING LIST - Item No. 164

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2004**	
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			
COST ($ in Millions)		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost		**13.842**	**19.942**	**28.163**	**28.321**	**23.406**	**17.591**	
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

(H3002) The E-6B Block I program corrects Airborne National Command Post program FOT&E operational suitability deficiencies and addresses legacy system obsolescence issues. Without the Block I program, legacy system obsolescence will result in several unsupportable mission systems by 2010. Block I consists of the design, development, integration, and testing of the replacements for the existing Digital Airborne Intercommunications Switching System (DAISS)/Intercommunications System (ICS), Mission Computer System (MCS), and Ultra-High Frequency Command, Control and Communications (UHF C3) system. The Block I project also incorporates an Open Systems Architecture (OSA), adds improved operator workstations throughout the aircraft, which in addition to reducing workload and improving system interoperability, provides a foundation for future evolutionary upgrades. Other modifications enhance power and cooling capabilities for ground operations without any ground support.

Block I is STRATCOM's FY02 Integrated Priority List (IPL) no. 1 item and is fully supported in STRATCOM's FY03 IPL. Secretary of Defense's March 2003 Nuclear Posture Review implementation requires that the service fund E-6 sustainability, survivability, and modernization. The 2004-2009 Defense Planning Guidance supports accelerated completion of the Block I program.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0101402N Navy Strategic Communications	H3002 Navy Stategic Communications Project Block 1

B. Accomplishments/Planned Program

		FY 03	FY 04	FY 05
Acquisition Planning & Milestone Documentation /$18.061M		6.977	5.176	5.908
RDT&E Articles Quantity N/A				

Funding supports acquisition planning initiation, acquisition strategy development & implementation, requirements and request for proposal development & refinement, industry conferences, DoD 5000 series document development, program management, technical review and oversight, Systems Integration Lab preparation, contract award activities, preliminary and critical design reviews, CDRL reviews, technical interchange meetings, developmental and operational test and evaluation planning, in support of government review and design approval for the replacement of DAISS, MCS, UHF C3 System, incorporation of OSA with new servers and operator stations, and fixes in ground power and cooling capabilities for austere operations.

		FY 03	FY 04	FY 05
Engineering, Mgmt., Studies & Analysis / $13.920M		6.865	3.751	3.304
RDT&E Articles Quantity N/A				

Funding supports engineering, management, trade studies, and studies and analysis contract support services for acquisition planning and development of acquisition documents, schedule development and monitoring, industry day conferences, DoD 5000 series document development, Request for Proposal (RFP) development, engineering and C3 architectural studies and analysis, Systems Integration Lab preparation, logistics planning, training planning and CDRL reviews for the replacement of DAISS, MCS, UHF C3 System, incorporation of OSA with new servers and operator stations, and fixes in ground power and cooling capabilities for austere operations.

		FY 03	FY 04	FY 05
Prime System Development / $29.966M			11.015	18.951
RDT&E Articles Quantity N/A				

Funding supports all prime contract tasks following award for Block I program initiation, engineering research, design development, integration and test of OSA, MCS, DAISS, power, cooling, and other subsystems related to Block I; preparations (engineering, logistics, training) for PDR and CDR, preparation for and presentation of the Block I design, contractor developmental test and evaluation planning, and leading to LRIP approval and award.

R-1 SHOPPING LIST - Item No. 164

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0101402N Navy Strategic Communications	H3002 Navy Stategic Communications Project Block 1

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2003	FY 2004	FY 2005
Previous President's Budget:	18.073	24.229	31.712
Current BES/President's Budget	13.842	19.942	28.163
Total Adjustments	-4.231	-4.287	-3.549
Summary of Adjustments			
Congressional program reductions			
Congressional undistributed reductions		-0.297	
Congressional rescissions			
SBIR/STTR Transfer	-0.215		
Economic Assumptions			-0.074
Reprogrammings	-4.016		
Other Navy/OSD Adjustments			
Congressional increases			
Reprioritization		-3.990	-3.475
Subtotal	-4.231	-4.287	-3.549

Schedule:

The change in schedule is a result of PR-05 and other funding realignments to the E-6 Block 1 Program.

Technical:

Not Applicable

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0101402N Navy Strategic Communications	H3002 Navy Stategic Communications Project Block 1

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
056400 E-6A/B Series	56.076	48.157	19.721	11.462	17.568	59.687	69.158	232.475	514.304

E. ACQUISITION STRATEGY: *

Competitively Award Cost Plus Development Contract with follow on FFP Production Contract.

F. MAJOR PERFORMERS: **

R-1 SHOPPING LIST - Item No. 164

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**		PROGRAM ELEMENT 0101402N Navy Strategic Communications			PROJECT NUMBER AND NAME H3002 Navy Stategic 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				11.015	02/04	18.951	10/04	45.634	75.600	75.600
											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		11.015		18.951		45.634	75.600	
Remarks:												
Studies & Analyses	RX	Various A&AS	0.571	1.464	10/02	0.795	10/03	0.617	10/04	1.622	5.069	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Support			0.571	1.464		0.795		0.617		1.622	5.069	
Remarks:												

R-1 SHOPPING LIST - Item No. 164

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**		PROGRAM ELEMENT 0101402N Navy Strategic Communications			PROJECT NUMBER AND NAME H3002 Navy Stategic 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
Developmental Test & Evaluation	WX	NAWCAD, Pax River, MD								0.632	0.632	
Operational Test & Evaluation	WX	NAWCAD, Pax River, MD								1.095	1.095	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal T&E			0.000	0.000		0.000		0.000		1.727	1.727	
Remarks:												
Program Management Support	RX	Various A&AS	1.105	2.850	10/02	1.065	10/03	0.831	10/04	1.754	7.605	
Government Engineering Support	WX	NAWCAD, Pax River, MD	1.475	5.927	10/02	3.506	10/03	4.027	10/04	10.335	25.270	
Government Engineering Support	WX	NADEP JAX, FL	0.102	0.100	10/02	0.497	10/03	0.558	10/04	1.260	2.517	
Government Engineering Support	WX	NAWCTSD, Orlando, FL		0.269	10/02	0.273	10/03	0.277	10/04	0.599	1.418	
Government Engineering Support	Various	Various		0.466	10/02	0.400	10/03	0.546	10/04	0.840	2.252	
Contractor Engineering Support	RX	Various A&AS	1.173	2.551	10/02	1.891	10/03	1.856	10/04	4.047	11.518	
Travel	WX	NAWCAD, Pax River, MD	0.128	0.215	Various	0.500	Various	0.500	Various	1.500	2.843	
Subtotal Management			3.983	12.378		8.132		8.595		20.335	53.423	
Remarks:												
Total Cost			4.554	13.842		19.942		28.163		69.318	135.819	
Remarks:												

R-1 SHOPPING LIST - Item No. 164

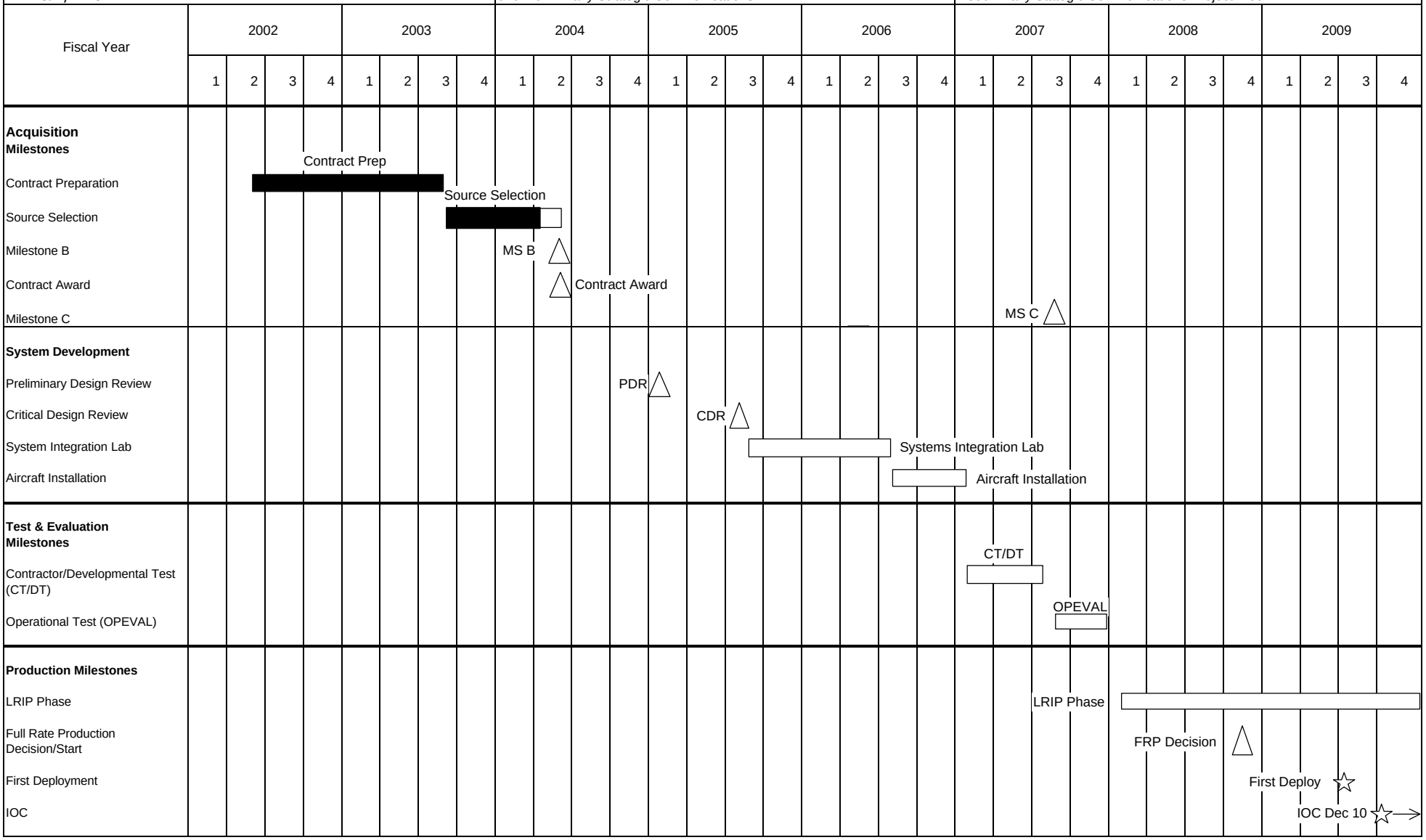
CLASSIFICATION:

EXHIBIT R4, Schedule Profile | DATE: **February 2004**

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



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

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **February 2004**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT 0101402N Navy Strategic Communications				PROJECT NUMBER AND NAME H3002 Navy Stategic 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-3Q						
Source Selection		3Q-4Q	1Q-2Q					
Milestone B (MS B)			2Q					
Contract Award			2Q					
Preliminary Design Review (PDR)				1Q				
Critical Design Review (CDR)				3Q				
System Integration Lab				3Q-4Q	1Q-3Q			
Aircraft Installation					3Q-4Q	1Q		
Contractor/Developmental Testing (CT/DT)						1Q-3Q		
Milestone C (MS C)						3Q		
Operational Testing (OPEVAL)						3Q-4Q		
LRIP Phase							1Q-4Q	1Q-4Q
Full Rate Production (FRP) Decision/Start							4Q	
First Deployment								3Q
IOC								2Q FY11

R-1 SHOPPING LIST - Item No. 164

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

BA: 07 PROGRAM ELEMENT: 0203761N
PROGRAM ELEMENT TITLE: Rapid Technology Transition (RTT)

COST: (Dollars in Thousands)

Project Number & Title	FY 2003 Actual	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate
R4021 Rapid Technology Transition (RTT)							
	0	9,889	14,630	14,661	14,659	14,677	14,694
Totals	0	9,889	14,630	14,661	14,659	14,677	14,694

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: 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 charter to transition technology from any source, including those not traditionally associated with defense technology. An effective and robust integration of commercial and military technologies can reduce costs and improve Naval capabilities, but only if technology transition can keep pace with fast moving changes in technologies and operational needs. The RTT program is structured to bring transition deals to closure quickly, and to provide execution year funding for a rapid start, bridging the gap until the program of record can fund the completion of the technology insertion.

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

To ensure the widest possible awareness of emergent commercial technology opportunities, RTT will interact with the venture capital community and industry. The RTT program will coordinate closely with Program Executive Offices (PEOs) and Program Managers (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 demonstrations of high risk/high payoff technologies.

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

BA: 07 PROGRAM ELEMENT: 0203761N
PROGRAM ELEMENT TITLE: Rapid Technology Transition (RTT)

PROGRAM CHANGE SUMMARY:

	FY 2003	FY 2004	FY 2005
FY 2004-2005 President's Budget Submission	0	14,662	14,683
Cong. Rescissions/Adjustments/Undist.Reductions	0	-111	0
Congressional Actions	0	-4,662	0
Inflation Savings	0	0	-47
Technical Adjustments	0	0	-6
FY 2005 President's Budget Submission	0	9,889	14,630

PROGRAM CHANGE SUMMARY EXPLANATION:
Technical: Not applicable.
Schedule: Not applicable.

FY 2005 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET DATE: Feb 2004
Exhibit R-2a

BA: 07 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 2003 Actual	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate
R4021 Rapid Technology Transition (RTT)	0	9,889	14,630	14,661	14,659	14,677	14,694

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: 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 charter to transition technology from any source, including those not traditionally associated with defense technology. An effective and robust integration of commercial and military technologies can reduce costs and improve Naval capabilities, but only if technology transition can keep pace with fast moving changes in technologies and operational needs. The RTT program is structured to bring transition deals to closure quickly, and to provide execution year funding for a rapid start, bridging the gap until the program of record can fund the completion of the technology insertion.

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

To ensure the widest possible awareness of emergent commercial technology opportunities, RTT will interact with the venture capital community and industry. The RTT program will coordinate closely with Program Executive Offices (PEOs) and Program Managers (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 demonstrations of high risk/high payoff technologies.

B. ACCOMPLISHMENTS/PLANNED PROGRAM:

	FY 2003	FY 2004	FY 2005
RTT	0	9,889	14,630

FY 2003 Accomplishments: Not Applicable

FY 2004 Plans:
This project will be managed by the Commercial Technology Transition Office (CTTO) within the Office of Naval Research. Initial program efforts will include:

- Develop and execute a process and a supporting data base for matching technology insertion opportunities with high priority needs. This process will include interfaces with the technology, acquisition, resource sponsor and user communities, and with industry.
- Broker high payoff technology transition deals with programs of record, using RTT as the source of bridge funding for a rapid start. Opportunities under evaluation in FY 2004 include: Advanced Hawkeye Alternate Transmitter; Ship Service Fuel Cell; Aircraft Weapon Inventory Management System; Battle Force E-mail for P-3C; Commercial Bandwidth Optimization for Surface Ships; Secure High Frequency (HF) Internet capability for E-2C; Fiber Optic Splicing for F/A-18; Metal Matrix Composite Shaft Seals for DDG-51; On-Board Vehicle Power for USMC HMMWVs; Commercial Precision Landing for E-2C; Automated E-2C Air Tasking Order capability for Joint targeting.

Engage the venture capital (VC) community to identify innovative technology sources that might not otherwise be visible to DoD. Venture Capitalists (VCs) invest in small, agile, technology companies whose products often have dual use potential. The RTT will follow up on leads from VCs, and work directly with VC-backed portfolio companies and Naval programs of record to develop technology transition deals for product variants that will meet defense system needs. Engaging the VC community will increase DoN awareness, leverage commercial investments, and reduce time to market for technologies to meet current naval needs.
Evaluate various rapid technology transition strategies and business models via role-playing "war 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.

FY 2005 Plans:

• Continue RTT initiatives. Execute the process developed in FY 04 to broker a new set of technology transition deals enabled by FY 2005 RTT bridge funding, using the insight into acquisition and warfighter needs gained through development of the FY 2004 transitions to increase the innovation and impact of the FY 2005 transition deal set. The goal is to complete 5-8 new technology transition deals. Projects are expected to be similar in nature to the deals closed in FY 2004, with substantial improvements in performance, readiness, and/or total ownership costs in response to needs identified by programs of record.

• Complete FY 2004 transitions. Complete transitions initiated in FY 2004 such as: Battle Force E-mail for P-3C, Commercial Bandwidth Optimization for Surface Ships and Automated E-2C Air Tasking Order for Joint targeting. Monitor technical and programmatic progress towards acquisition of all transitions initiated in FY 2004.

• Continue RTT venture initiatives. Expand activities to follow up on VC leads generated through the Naval Research Advisory Committee (NRAC) panel on Venture Capital. Utilize leading commercial (non-defense industry) trends identified by the NRAC VC panel to guide development of FY 2005 RTT transition deals.

C. OTHER PROGRAM FUNDING SUMMARY:

RELATED RDT&E: All technology investments in DoN.

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

D. ACQUISITION STRATEGY:

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

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: **February 2004**	
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7**					R-1 ITEM NOMENCLATURE 0204136N F/A-18 SQUADRONS			
COST ($ in Millions)		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost		**204.131**	**172.743**	**134.580**	**82.998**	**17.949**	**14.145**	**11.088**
E1662 F/A-18 Improvements		**88.742**	**64.504**	**44.296**	**14.603**	**11.320**	**10.908**	**11.088**
E2065 F/A-18 RADAR Upgrade		**104.691**	**108.239**	**90.284**	**68.395**	**6.629**	**3.237**	
E9267 F414 Engine Durability Improvements		**6.655**						
E9268 APG-73 Radar Upgrade		**4.043**						

(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 and to ensure interoperability in a network centric environment. Additionally, continued improvements in reliability and maintainability are necessary to ensure maximum benefit is achieved through reduced cost of ownership and to provide enhanced availability.

F/A-18 Improvements: The F/A-18 is a multi-mission strike fighter aircraft that is used in both fighter and attack roles through selected use of external equipment (fuel tanks, targeting/navigation, Forward Looking Infrared (FLIR) pods, and various bomb/missile launching racks). Additional capabilities are required for interoperability in a network-centric operational environment. In order to respond effectively to emerging future threats, F/A-18 aircraft capabilities are being upgraded to incorporate new/enhanced weapons systems and avionics including the Joint Helmet Mounted Cueing System (JHMCS), 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 for interoperability in a network centric operational environment, to include: increased software capabilities, potential new hardware capabilities,upgrading existing hardware, and network centric warfare upgrades. Additionally, a continuing capability is needed to perform technical evaluations/investigative flight testing, provide software based on reported fleet problems.

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification	DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7**	R-1 ITEM NOMENCLATURE 0204136N F/A-18 SQUADRONS

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.

F414 Engine Durability Improvements: The FY03 Congressional add supports 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 engine. The improved component efficiency of the EDE could be used to increase life or performance of the F414 engines.

AN/APG-73 Radar Upgrade: The AN/APG-73 radar will alleviate Electronic CounterCountermeasures (ECCM) deficiences 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.

R-1 SHOPPING LIST - Item No.166

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2004**	
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 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost		**88.742**	**64.504**	**44.296**	**14.603**	**11.320**	**10.908**	**11.088**
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). Additional capabilities are required for interoperability in a network-centric operational environment. In order to respond effectively to emerging future threats, F/A-18 aircraft capabilities are being upgraded to incorporate new/enhanced weapons systems and avionics including the Joint Helmet Mounted Cueing System (JHMCS), 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 for interoperability in a network centric operational environment, to include: increased software capabilities, potential new hardware capabilities, upgrading existing hardware, and network centric warfare upgrades. Additionally, a continuing capability is needed to perform technical evaluations/investigative flight testing, provide software based on reported fleet problems.

R-1 SHOPPING LIST - Item No.166

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
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) B. Accomplishments/Planned Program

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		0.884	0.982	0.800
RDT&E Articles Quantity				

Continue to conduct engineering analysis and develop improvements to existing systems and subsystems for deficiencies identified during development of the aircraft. Provide technical support for the integration of new weapons , systems, and Network Centric Warfare capability.

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		16.926	10.625	12.855
RDT&E Articles Quantity				

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

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		23.171	20.568	12.691
RDT&E Articles Quantity				

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

R-1 SHOPPING LIST - Item No.166

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
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) B. Accomplishments/Planned Program

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		12.846		
RDT&E Articles Quantity				

Completed development of ATFLIR to include developmental testing and OPEVAL.

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		22.834	17.301	14.428
RDT&E Articles Quantity				

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

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		12.081	15.028	3.522
RDT&E Articles Quantity				

Continue and complete Aft Crew Station development and integration. Start and complete TECHEVAL and OTIIA.

R-1 SHOPPING LIST - Item No.166

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
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 2003	FY 2004	FY 2005
Previous President's Budget:	95.079	69.032	44.463
Current BES/President's Budget	88.742	64.504	44.296
Total Adjustments	-6.337	-4.528	-0.167
Summary of Adjustments			
Congressional program reductions			
Congressional undistributed reductions		-0.768	
Congressional rescissions			
SBIR/STTR Transfer	-2.305		
Economic Assumptions			-0.106
Reprogrammings	-4.032		
Reprioritization		-3.760	-0.061
Congressional increases			
Subtotal	-6.337	-4.528	-0.167

(U) Schedule:

ATFLIR schedule slip due to delay in receiving MS III decision.
MIDS OT-IIAI was moved to leverage off of 19C FOT&E, which allowed time for validation correction discrepancies (VCD).
ACS DT 11A runs through the start of TECHEVAL.
JHMCS Aft Seat FOT&E was moved to leverage off of 19C and H3E FOT&E respectfully.
HOL - FOT&E for H2E was expanded by one Quarter to leverage test assets

(U) Technical:

R-1 SHOPPING LIST - Item No.166

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
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) D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
APN-1 (E/F) Weapons System Cost Line Item 3 F/A-18E/F Hornet (MYP)	3196.934	3044.133	2985.762	2848.414	2351.712	2066.567	1753.698	3077.01	21324.23
APN-1 (G) Weapons System Cost Line Item 2 EA-18G			8.243	333.98	882.315	1292.063	1568.357	2467.353	6552.311
APN-5 Line Item 27 F-18 Series Modification	385.732	361.044	412.495	394.319	504.613	451.616	468.834	1515.582	4494.235

Related RDT&E
(U) P.E. 0207163N Advanced Medium Range Air-to-Air Missile (AMRAAM)
(U) P.E. 064269N EA-18 G (FY05-09)
(U) P.E. 0604270N Electronic Warfare Development (FY02-04)

(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. The major programs within the F/A-18 Improvements project are:

*__ANAV__. ANAV development is provided on a sole source cost plus fixed fee contract on an R&D Basic Ordering Agreement to Boeing. Procurement of production hardware will be made as CFE through the prime contractor.

*__ATFLIR__. The ATFLIR development was a sole source cost plus incentive fee contract to Boeing which was completed in FY03. 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 cost type contracts. The contract vehicle is a Technical Direction Letter contract at China Lake. As the Prime contractor for the aircraft, Boeing is the design agent for software of aircraft in production.

* __Advanced Crew Station.__ The design and development of the Advanced Crew Station modification is sole source to Boeing as the Prime aircraft contractor.

* __MIDS__. An acquisition developmental effort supported by SPAWAR (PMW-159), MIDS is being developed by a consortium of international companies.

* __JHMCS__. JHMCS development is via a sole source cost plus award fee Joint Air Force contract to Boeing.

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**			PROGRAM ELEMENT 0204136N F/A-18 SQUADRONS			PROJECT NUMBER AND NAME 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 PIDS/DCS	SS/CPFF/FFP	MDA-ST LOUIS,MO	90.000								90.000	90.000
Primary Hardware Development ATFLIR	SS/CPIF/AF	MDA-ST LOUIS,MO	154.845	8.310	11/02						163.155	163.155
AWARD FEE ATFLIR			1.576								1.576	
Primary Hardware Development ANAV	SS/CPFF	MDA-ST LOUIS,MO		9.212	09/03	6.669	03/04	1.741	03/05	5.685	23.307	23.307
Primary Hardware Development ACS	SS/CPIF	MDA-ST LOUIS, MO	36.810	10.110	11/02	9.585	11/03	0.179	11/04		56.684	56.684
Primary Hardware Development HOL	SS/CPIF/TDL	NAWCWD-CHINA LAKE	117.446	6.289	11/02	1.669	11/03	2.016	11/04		127.420	127.420
Primary Hardware Development JHMCS	MIPR	WPAFB DAYTON, OHIO	16.560	20.638	02/03	19.419	02/04	11.743	02/05		68.360	
Primary Hardware Development MISC.	WX	OTHER FIELD ACTIVITIES	14.532	5.788	11/02	5.194	11/03	8.075	11/04		33.589	
Ancillary Hdw Develop ATFLIR	WX	NAWCAD-LAKEHURST NJ	9.201								9.201	
Subtotal Product Development			440.970	60.347		42.536		23.754		5.685	573.292	

Remarks:
FY99 and prior year award fee earned is 74.7% (ATFLIR)

Development Support MISC	VARIOUS	VARIOUS	33.092	4.049	11/02	4.214	11/03	3.135	11/04	3.854	48.344	
Software Development	WX	NAWCWD-CHINA LAKE	106.067	9.602	12/02	7.689	12/03	9.430	12/04	19.862	152.650	
Prior Year Costs	Various	Various	2,567.069								2,567.069	
Subtotal Support			2,706.228	13.651		11.903		12.565		23.716	2,768.063	

Remarks:
Prior year costs (FY95 & prior) not broken out into separate categories.

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**		PROGRAM ELEMENT 0204136N F/A-18 SQUADRONS				PROJECT NUMBER AND NAME 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	47.969	7.094	11/02	4.312	11/03	6.669	11/04	12.341	78.385	
Operational Test & Evaluation	WX	OPTEVFOR, NORFOLK, VA	6.704	6.254	11/02	4.365	11/03				17.323	
Subtotal T&E			54.673	13.348		8.677		6.669		12.341	95.708	
Remarks:												
Program Management Sup	VARIOUS	NAVAIR, PAX RIVER, MD	7.917	0.241	11/02	0.484	11/03	0.408	11/04	2.620	11.670	
Travel	WX	NAVAIR, PAX RIVER, MD	3.122	1.155	VAR	0.904	VAR	0.900	VAR	3.557	9.638	
Subtotal Management			11.039	1.396		1.388		1.308		6.177	21.308	
Remarks:												
Total Cost			3,212.910	88.742		64.504		44.296		47.919	3,458.371	
Remarks:												

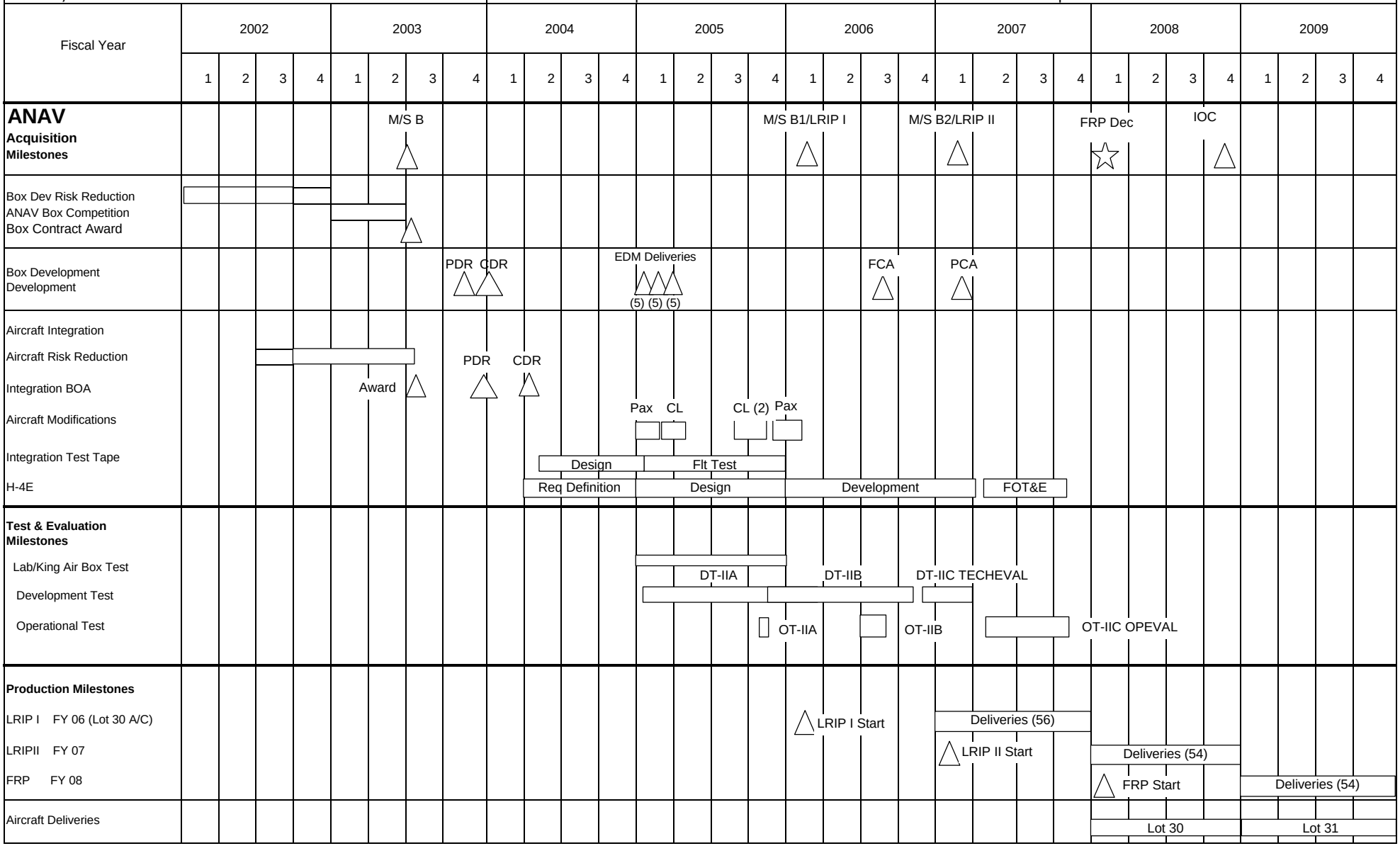
R-1 SHOPPING LIST - Item No.166

EXHIBIT R4, Schedule Profile | DATE: February 2004

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



CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **February 2004**		
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 **ANAV**	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 Start						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. 166

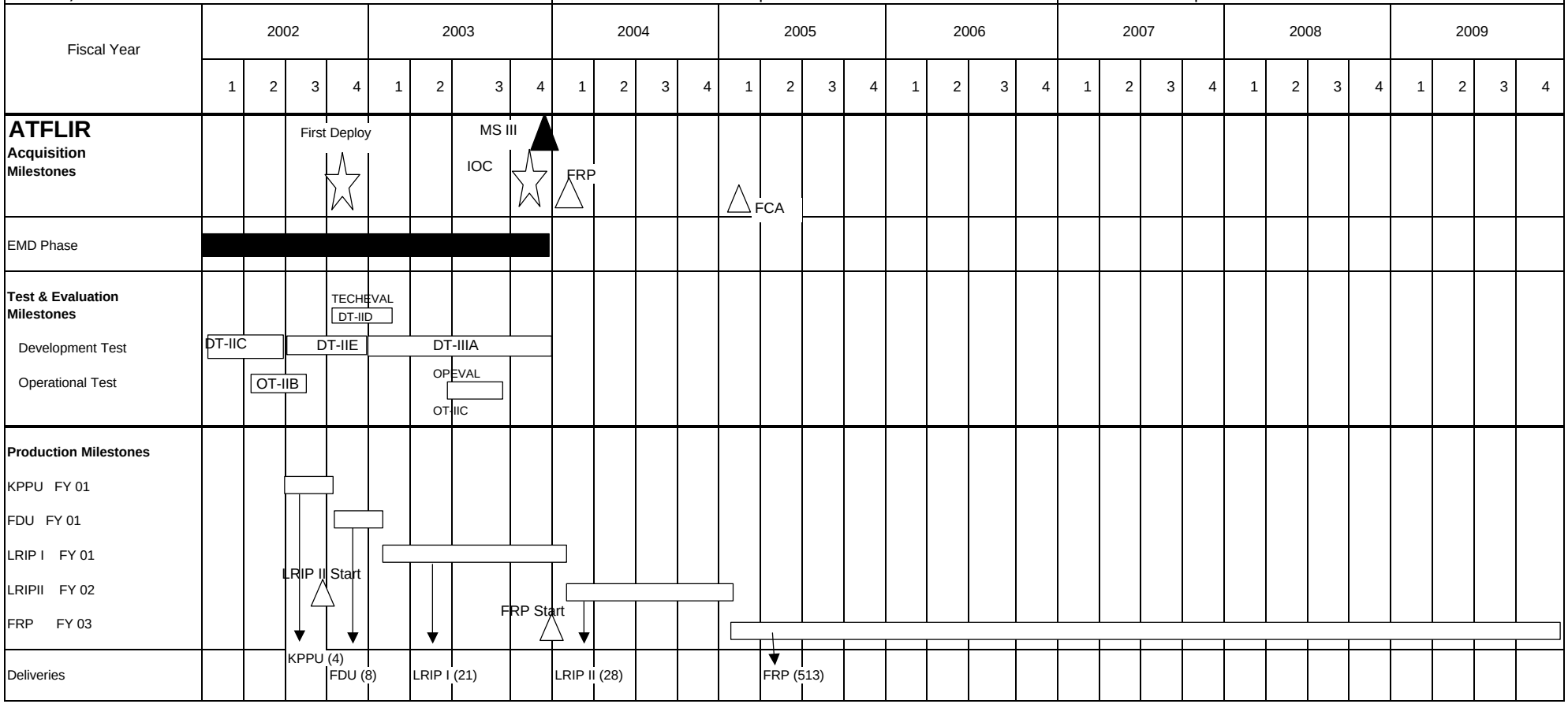
CLASSIFICATION:

EXHIBIT R4, Schedule Profile | DATE: **February 2004**

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



R-1 SHOPPING LIST - Item No. 166

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

CLASSIFICATION:

Exhibit R-4a, Schedule Detail					DATE: **February 2004**			
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 **ATFLIR**	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Developmental Testing (DT-IIC)	1Q-2Q							
Developmental Testing (DT-IID) (TECHEVAL)	4Q	1Q						
Developmental Testing (DT-IIE)	3Q-4Q							
Developmental Testing (DT-IIIA)		1Q-4Q						
Operational testing(OT-IIB)	2Q-3Q							
Functional Configuration Audit (FCA)				1Q				
Low-Rate Initial Production I Delivery		1Q-4Q	1Q					
Operational Evaluation (OT-IIC) (OPEVAL)		2Q-3Q						
Low-Rate Initial Production II Delivery			1Q-4Q	1Q				
IOC		4Q						
Full Rate Production (FRP) Decision			1Q					
Full Rate Production Start		4Q						
First Deployment	4Q							

R-1 SHOPPING LIST - Item No. 166

CLASSIFICATION:

EXHIBIT R4, Schedule Profile | DATE: **February 2004**

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 DVMC △										IOC ☆												
Prototype Phase																																
System Development	CDR △																															
EDM Delivery					DVMC, 8x10, HC, AMC T2 △																													
Software ACS/AESA Test Readiness Review ACS/AESA BRR H3E TRR				ACS/AESA ATTR △			ACS/AESA BRR △	H3E Release to Navy △																										
Test & Evaluation Milestones												DT-IIA								TECHEVAL												
Development Test												▭								▭												
Operational Test																				FOT&E ▭												
Production Milestones												Initial Delivery in Lot 26(E/F) △																				

R-1 SHOPPING LIST - Item No. 166

CLASSIFICATION:

Exhibit R-4a, Schedule Detail					DATE: **February 2004**			
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						
First flight Developmental Testing (DT) for ACS Aircraft		1Q-4Q	1Q-4Q	1Q-3Q				
FOT&E ACS					2Q-4Q			
Techeval				3Q-4Q	1Q-2Q			
IOC					4Q			
Initial Delivery Lot 26		4Q	1Q					
FRP DVMC			1Q					

R-1 SHOPPING LIST - Item No. 166

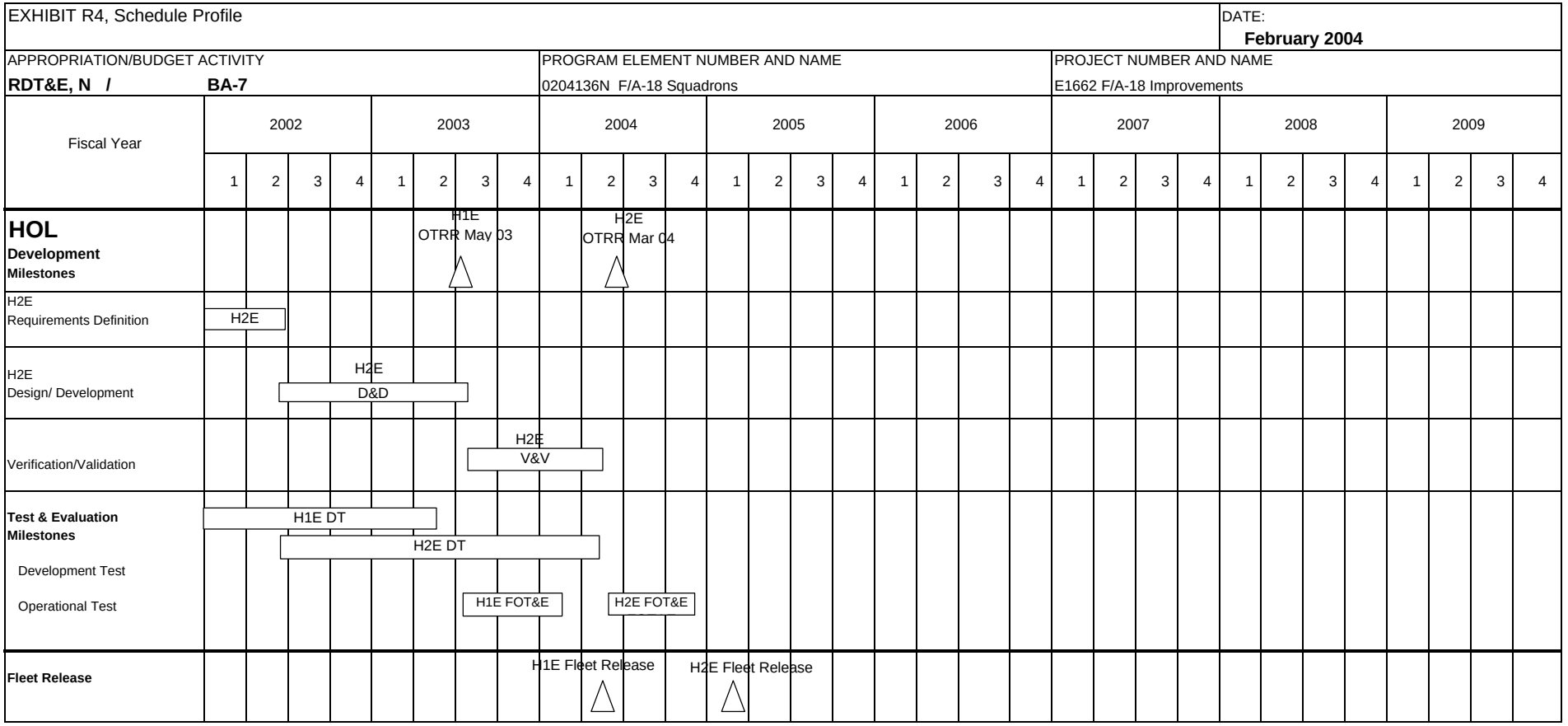
CLASSIFICATION:

EXHIBIT R4, Schedule Profile | DATE: **February 2004**

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



R-1 SHOPPING LIST - Item No. 166

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **February 2004**		
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 **HOL**	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
H1E Development Test (DT)	1Q-4Q	1Q-2Q						
Operational Test Readiness Review (OTRR)		3Q						
Follow On Test and Evaluation (FOT&E)		3Q-4Q	1Q					
Fleet Release			2Q					
H2E Requirements Definition	1Q-2Q							
Design/Development Phase	2Q-4Q	1Q-3Q						
Development Test (DT)	2Q-4Q	1Q-4Q	1Q-2Q					
Validation & Verification (V&V)		3Q-4Q	1Q-2Q					
Operational Test Readiness Review (OTRR)			2Q					
Follow On Test and Evaluation (FOT&E)			2Q-4Q					
Fleet Release				1Q				

R-1 SHOPPING LIST - Item No. 166

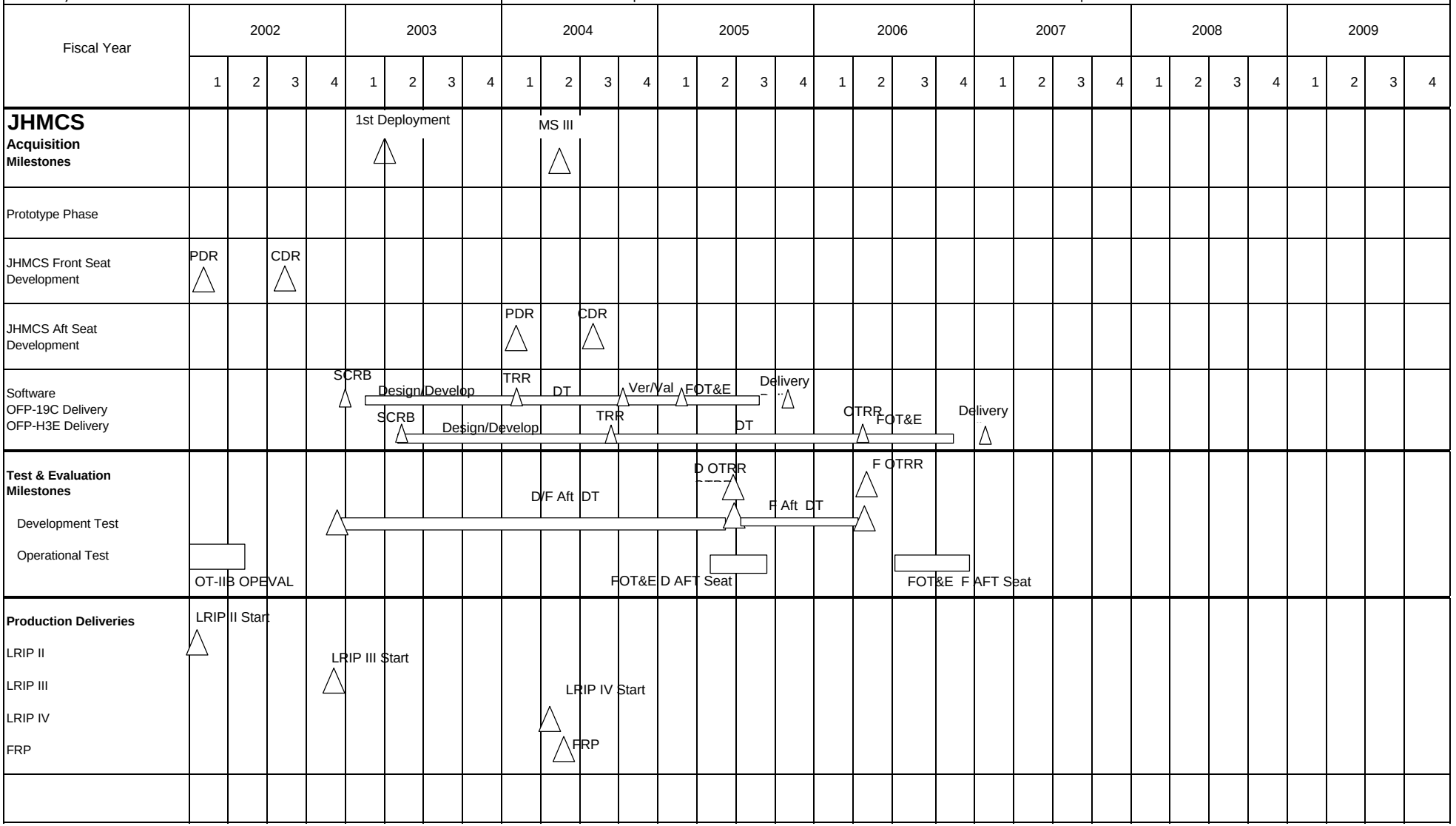
CLASSIFICATION:

EXHIBIT R4, Schedule Profile | DATE: **February 2004**

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



R-1 SHOPPING LIST - Item No. 166

Note: MS III decision in work by MDA. Proposed plan, addition of LRIP IV in FY03, followed by MS III decision in early FY04.

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **February 2004**		
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
Preliminary Design Review (PDR) Front Seat	1Q							
Critical Design Review (CDR) Front Seat	3Q							
Preliminary Design Review (PDR) AFT Seat			1Q					
Critical Design Review (CDR) AFT Seat			3Q					
Test Readiness Review (TRR) Aft Seat			1Q,3Q					
Developmental Testing Aft Seat	4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-2Q			
Operational Testing (OT-IIB) Front Seat	1Q-2Q							
Development Test (DT) D AFT seat			3Q-4Q	1Q-2Q				
Development Test (DT) F AFT seat				3Q-4Q	1Q-2Q			
Software Delivery OFP-19C				4Q				
Follow On Test Evaluation (D Aft Seat)				2Q-3Q				
Follow On Test Evaluation (F Aft Seat)					3Q-4Q			
Software Delivery OFP-H3E						1Q		
LRIPII	1Q							
LRIPIII	4Q							
LRIPIV			2Q					
Full Rate Production Start			2Q					
First Deployment		1Q						

R-1 SHOPPING LIST - Item No. 166

CLASSIFICATION: **UNCLASSIFIED**

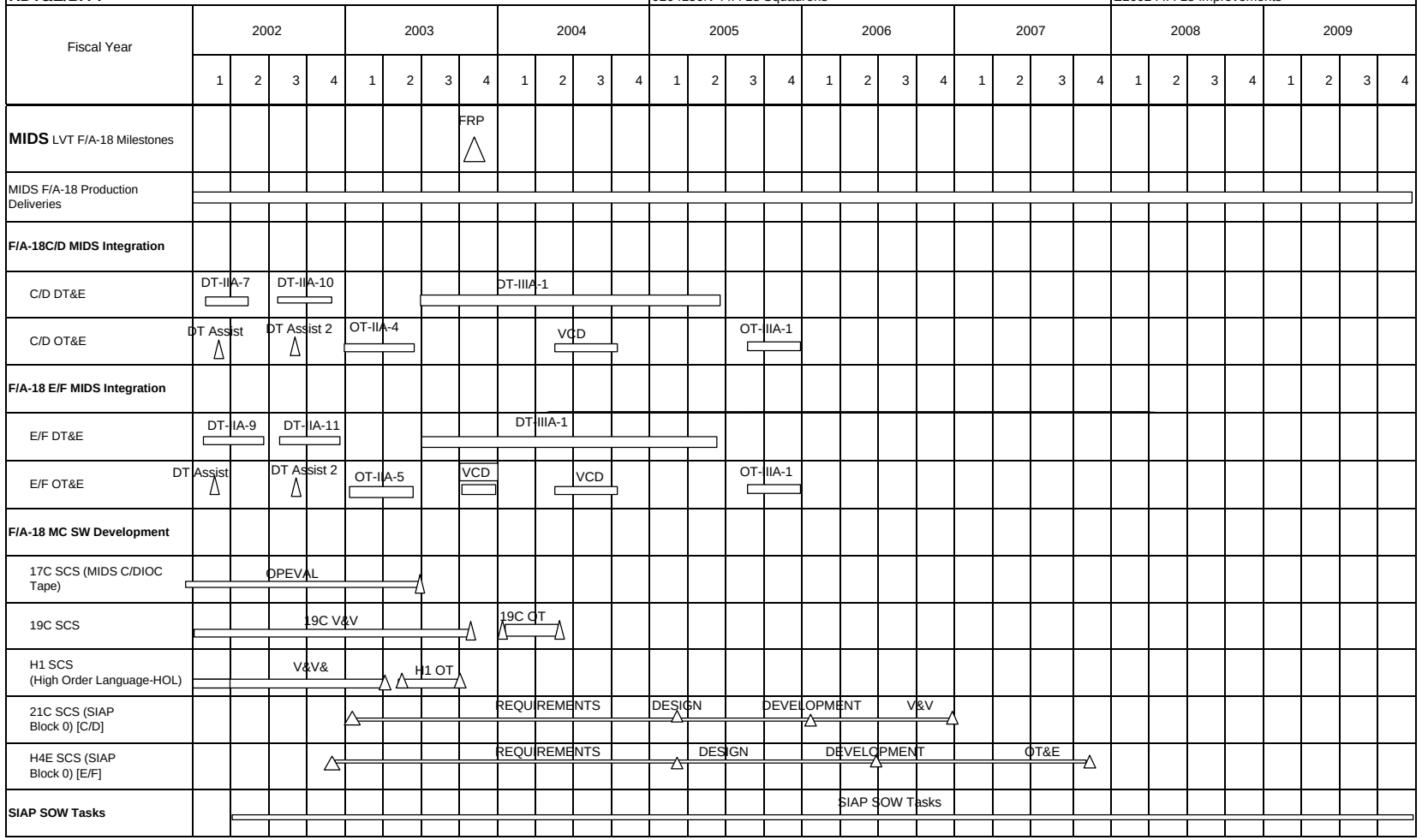
EXHIBIT R-4a, Schedule Profile

DATE: **February 2004**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E/BA-7**

PROGRAM ELEMENT: 0204136N F/A-18 Squadrons

PROJECT NUMBER AND NAME: E1662 F/A-18 Improvements



R-1 SHOPPING LIST - Item N0. 166

UNCLASSIFIED

Exhibit R-4a, Schedule Detail

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

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2004	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT NUMBER AND NAME 0204136N/F/A-18 SQUADRONS				PROJECT NUMBER AND NAME E2065 F/A-18 RADAR Upgrade			
COST ($ in Millions)		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
E2065/RADAR UPGRADE		**104.691**	**108.239**	**90.284**	**68.395**	**6.629**	**3.237**	

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.

R-1 SHOPPING LIST - Item No. 166

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
RDT&E, N / BA-7	0204136N F/A-18 SQUADRONS	E2065 F/A-18 RADAR Upgrade	

B. Accomplishments/Planned Program

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		89.732	74.421	56.428
RDT&E Articles Quantity				

Continue EMD effort and radar cross-section assessments. Start Anti-Tamper Devlopment in FY05.

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		14.809	29.968	24.706
RDT&E Articles Quantity				

Continue software development, DT, and systems integration efforts.

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		0.150	3.850	9.150
RDT&E Articles Quantity				

AESA OT&E.

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

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

R-1 SHOPPING LIST - Item No. 166

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0204136N F/A-18 SQUADRONS	E2065 F/A-18 RADAR Upgrade

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2003	FY 2004	FY 2005
Previous President's Budget:	104.481	110.015	78.578
Current BES/President's Budget	104.691	108.239	90.284
Total Adjustments	0.210	-1.776	11.706
Summary of Adjustments			
Congressional program reductions			
Congressional undistributed reductions		-1.226	
Congressional rescissions			
SBIR/STTR Transfer	-1.947		
Economic Assumptions			-0.241
Reprogrammings	2.157		
Reprioritization		-0.550	11.947
Congressional increases			
Subtotal	0.210	-1.776	11.706

Schedule:

Anti-Tamper Development continues through FY08. OT-C1 Phase II was incorporated in FY05 for OPEVAL risk reductin and will be completed in a DT assist environment.

Tecnnicai:

Incorporating Anti Tamper development into AESA starting in FY05.

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
(1) Line Item 3 F/A-18E/F HORNET (MYP) APN-1	78.158	85.967	112.830	169.350	179.660	186.360	183.230	365.780	1361.335
(2) Line Item 27 F-18 SERIES MODIFICATION APN- (OSIP XX-07)	0	0	0	0	87.131	69.757	76.768	86.280	319.936

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT NUMBER AND NAME 0204136N F/A-18 SQUADRONS	PROJECT NUMBER AND NAME E2065 F/A-18 RADAR Upgrade

E. ACQUISITION STRATEGY:

The AESA program employs a two-phase approach with sole source contracts to Boeing, the airframe prime manufacturer. Phase I is a moderate risk reduction phase conducted in FY 1999 and FY 2000. During this phase, Boeing conducted competitive source selection at the radar system subcontract level. A BOA order for RFP development and subcontractor selection was made to conduct this effort. It includes an "845" agreement for prototype development, which includes commercial development/amortization provisions. Conducting the competition early in the program allowed for focused risk reduction and contractor investment. Phase II consisted of a typical System Demonstration program and development contract. The program transitioned to Phase II with a successful Milestone II Decision in FY 2001. When the program entered production in FY03, the "845" agreement allowed the contractor to amortize unreimbursed development costs into the production unit cost. This strategy fully utilizes acquisition reform initiatives such as: early partnering with industry; alpha contracting; leveraging industry investment; optimizing use of Commercial Off-the Shelf software and Non-Developmental Item; Cost as an Independent Variable; and Electronic Data Deliverables.

R-1 SHOPPING LIST - Item No. 166

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**		PROGRAM ELEMENT 0204136N F/A-18 SQUADRONS				PROJECT NUMBER AND NAME E2065 F/A-18 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	196.031	89.459	10/02	74.197	10/03	56.213	10/04	64.188	480.088	480.088
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			204.448	89.459		74.197		56.213		64.188	488.505	
Remarks:												
Software Development	WX	NAWCWD China Lake, CA	4.590	8.428	10/02	14.072	10/03	11.689	10/04		38.779	
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	0.164	11/03	0.175	10/04	0.182	1.326	
Subtotal Support			5.558	8.636		14.236		11.864		0.182	40.476	
Remarks:												

R-1 SHOPPING LIST - Item No. 166

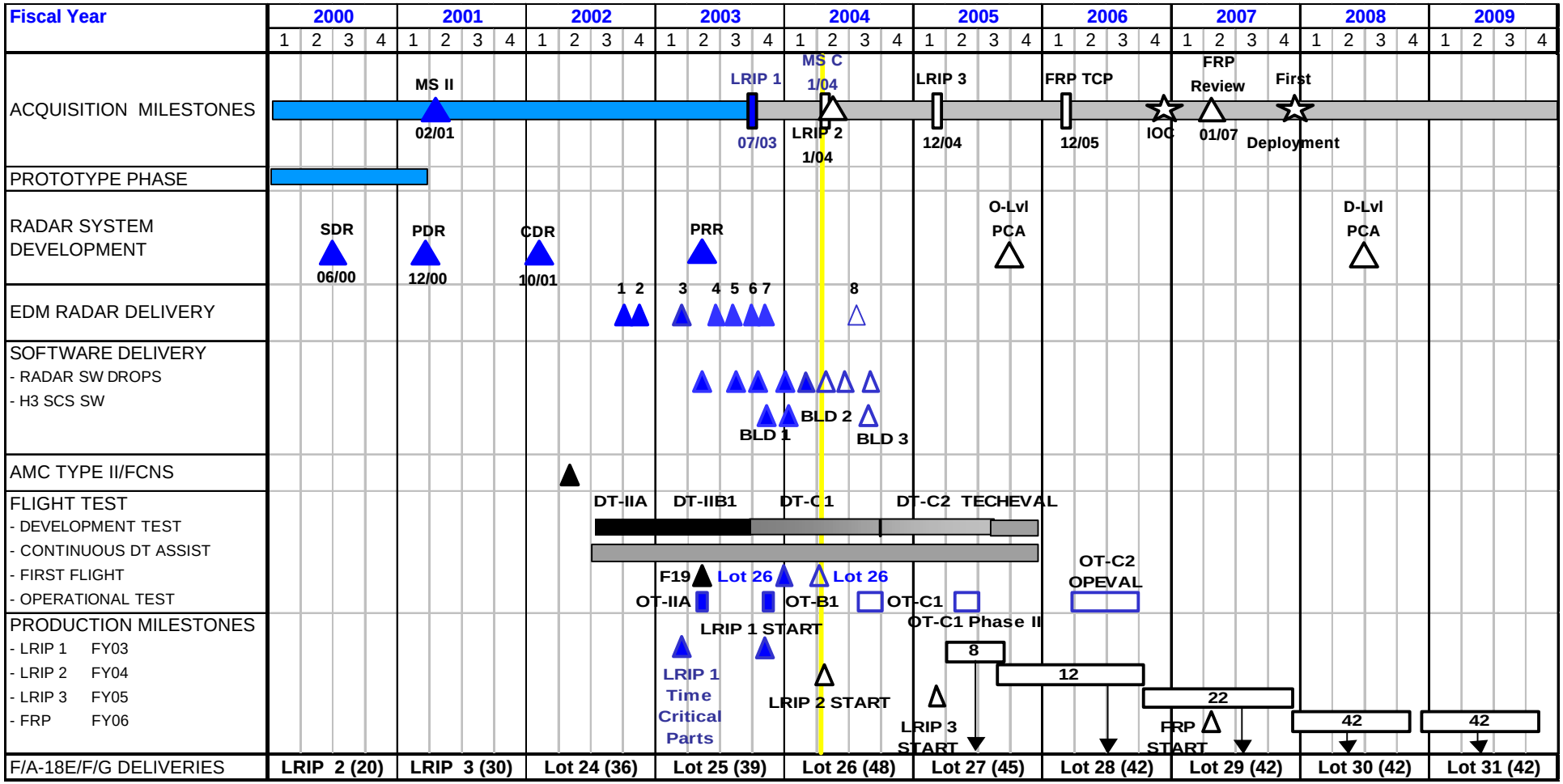
CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**		PROGRAM ELEMENT 0204136N F/A-18 SQUADRONS				PROJECT NUMBER AND NAME E2065 F/A-18 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	1.767	10/02	1.822	10/03	1.327	10/04		10.588	
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		4.614	10/02	14.074	10/03	11.690	10/04		30.378	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal T&E			5.672	6.531		19.746		22.167		13.851	67.967	
Remarks:												
Program Management Support	Various	NAVAIR Pax River, MD	1.652								1.652	
											0.000	
Travel	WX	NAVAIR Pax River, MD	0.295	0.065	10/02	0.060	10/03	0.040	10/04	0.040	0.500	
											0.000	
											0.000	
											0.000	
Subtotal Management			1.947	0.065		0.060		0.040		0.040	2.152	
Remarks:												
Total Cost			217.625	104.691		108.239		90.284		78.261	599.100	
Remarks:												

R-1 SHOPPING LIST - Item No. 166

CLASSIFICATION:

EXHIBIT R4, Schedule Profile		DATE: February 2004
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT NUMBER AND NAME 0204136N F/A-18 SQUADRONS	PROJECT NUMBER AND NAME E2065 F/A-18 RADAR Upgrade



CLASSIFICATION:

Exhibit R-4a, Schedule Detail					DATE: **February 2004**			
APPROPRIATION/BUDGET ACTIVITY **RDT&BA-7**	PROGRAM ELEMENT 0204136N F/A-18 SQUADRONS				PROJECT NUMBER AND NAME E2065 F/A-18 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)	3Q-4Q							
Operational Testing (OT-IIA)		2Q						
Start Low-Rate Initial Production I (LRIP I)		4Q						
Developmental Testing (DT-IIB1)		1Q-3Q						
Developmental Testing (DT-C1)		4Q	1Q-3Q					
Developmental Testing (DT-C2)			4Q	1Q-3Q				
Milestone C (MS C)			2Q					
Start Low-Rate Initial Production II			2Q					
Low-Rate Initial Production I Delivery				2Q-3Q				
Technical Evaluation (TECHEVAL)				3Q-4Q				
Operational Evaluation (OT-IIC) (OPEVAL)					2Q-3Q			
Low-Rate Initial Production II Delivery				3Q-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. 166

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: **February 2004**	
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7**					R-1 ITEM NOMENCLATURE 0204152N, E-2 Squadrons			
COST ($ in Millions)		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost		**18.878**	**19.331**	**6.055**	**2.155**	**1.579**	**1.586**	**1.605**
0463 - (E-2C Improvements)		**8.502**	**8.749**	**6.055**	**2.155**	**1.579**	**1.586**	**1.605**
2321 - (E-2 Radar Modernization)		**10.376**						
9417 - (E-2C Program Support Activity)*			**0.989**					
9418 - (E-2C Program Support Actvity)*			**3.461**					
9419 - (Non-Cooperative Combat Identification)*			**1.682**					
9420 - (PMRF Net-Centric Test Bed/Adv. Haw.)*			**4.450**					

* The FY 2004 budget reflects the following Congressional adds: $1.0M for E-2C Program Support Activity (PSA) which has been revised by $.011 for Congressional Undistributed Adjustments; $3.5M for E-2C PSA (SBIR Phase III) which has been revised by $.039 for Congressional Undistributed Adjustments; $1.7M for Non-Cooperative Combat Identification Capability which has been revised by $.018 for Congressional Undistributed Adjustments; and $4.5M for PMRF Net-Centric Test Bed/AHE Testing which has been revised by $.050 for Congressional Undistributed Adjustments.

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 (SATCOMS), and permits the evolutionary growth of a Combat Identification and Theater Air and Missile Defense (TAMD) Capability.

FY2003-2009: 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. 167

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2004**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT NUMBER AND NAME 0204152N, E-2 SQUADRONS				PROJECT NUMBER AND NAME 0463, E-2C IMPROVEMENTS			
COST ($ in Millions)		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost		**8.502**	**19.331** *	**6.055**	**2.155**	**1.579**	**1.586**	**1.605**
RDT&E Articles Qty								

* The FY 2004 budget reflects the following Congressional adds: $1.0M for E-2C Program Support Activity (PSA) which has been revised by $.011 for Congressional Undistributed Adjustments; $3.5M for E-2C PSA (SBIR Phase III) which has been revised by $.039 for Congressional Undistributed Adjustments; $1.7M for Non-Cooperative Combat Identification Capability which has been revised by $.018 for Congressional Undistributed Adjustments; and $4.5M for PMRF Net-Centric Test Bed/AHE Testing which has been revised by $.050 for Congressional Undistributed Adjustments.

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0204152N, E-2 SQUADRONS	0463, E-2C IMPROVEMENTS

B. Accomplishments/Planned Program

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

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		2.380	2.300	
RDT&E Articles Quantity				

Multi-Source Integration (MSI) Phase I
Conducted MSI Test and Evaluation in conjunction with CEC follow-on Test and Evaluation (FOT&E) for E-2C.
Fund MSI Phase I productionization and final test and evaluation for fielding in the E-2C.

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		2.326		
RDT&E Articles Quantity				

Theater Air and Missile Defense (TAMD) Requirements
Conducted avionics system trade study to support new architectures. Supported organic sensor/resource management.

R-1 SHOPPING LIST - Item No. 167

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0204152N, E-2 SQUADRONS	0463, E-2C IMPROVEMENTS

B. Accomplishments/Planned Program (Cont.)

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		1.501	1.100	0.950
RDT&E Articles Quantity				

Multi-Source Integration (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 Juiliet. 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. Perform all source data fusion in the E-2 including radar, Identification Friend or Foe (IFF), Electronic Surveillance Measures (ESM), Link 16, Link 11, and Cooperative Engagement Capability (CEC).

		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 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		1.295	2.100	0.200
RDT&E Articles Quantity				

Single Integrated Air Picture (SIAP) Block 0
Fund Multi-Source Integration (MSI) development to support SIAP and add correlation/decorrelation to support MSI.

R-1 SHOPPING LIST - Item No. 167

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0204152N, E-2 SQUADRONS	0463, E-2C IMPROVEMENTS

B. Accomplishments/Planned Program (Cont.)

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost			2.049	3.676
RDT&E Articles Quantity				

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

		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 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost			0.989	
RDT&E Articles Quantity				

Congressional Add for E-2C Program Support Activity (9417).
Complete ground testing and initiate flight test of a slide lateral engine mount design to improve vibration isolation capabilities.

R-1 SHOPPING LIST - Item No. 167

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0204152N, E-2 SQUADRONS	0463, E-2C IMPROVEMENTS

B. Accomplishments/Planned Program (Cont.)

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost			3.461	
RDT&E Articles Quantity				

Congressional Add for E-2C Program Support Activity (9418).
Support integration of the Multi-purpose Transportable Middleware capability into the E-2C Hawkeye 2000 mission computer.

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost			1.682	
RDT&E Articles Quantity				

Congressional Add for Non-Cooperative Combat Identification Capability (9419).
Support of concept development, system engineering, and system prototyping for an advanced non-cooperative identification system capability.

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost			4.450	
RDT&E Articles Quantity				

Congressional Add for PMRF Net-Centric Test Bed/Advanced Hawkeye Testing (9420).
Support science and technology and advanced technology demonstration initiatives for potential transition to the E-2 Hawkeye program.

R-1 SHOPPING LIST - Item No. 167

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0204152N, E-2 SQUADRONS	0463, E-2C IMPROVEMENTS

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2003	FY 2004	FY 2005
Previous President's Budget:	7.773	9.083	6.229
Current BES/President's Budget:	8.502	19.331	6.055
Total Adjustments	0.729	10.248	-0.174
Summary of Adjustments			
Congressional program reductions			
Congressional undistributed reductions		-0.232	
Congressional rescissions			
SBIR/STTR Transfer	-0.153		
Reprioritization		-0.220	-0.167
Economic Assumtions			-0.007
Reprogrammings	0.882		
Congressional increases		10.700	
Subtotal	0.729	10.248	-0.174

Schedule: The MSI S&T Demo schedule slid in FY03 from the first quarter to the third quarter due to technical performance in control signals in Multi-Mission Advanced Tactical Terminal (MATT) radio, causing other minor schedule changes for MSI to slide according. No impact to the overall program schedule.

Technical: Not Applicable.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0204152N, E-2 SQUADRONS	0463, E-2C IMPROVEMENTS

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
APN-1/E-2C (LI# 12 & 13)	286.594	226.811	247.950	249.059	208.579	175.895	733.639	10283.83	14917.757
APN-5/E-2C (LI# 36)	25.001	50.274	15.124	13.785	9.444	9.338	8.561	349.280	923.011
APN-6/E-2C (LI# 53)	20.970	2.947	1.148	0.000	0.000	0.000	11.925	287.622	430.515

Related RDT&E
(U) 0204152N E-2 Squadrons PU E2321
(U) 0603658N (Ship Self Defense, CEC)
(U) 0604234N Advanced Hawkeye

E. ACQUISITION STRATEGY:

Not Applicable

R-1 SHOPPING LIST - Item No. 167

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**		PROGRAM ELEMENT 0204152N, E-2 SQUADRON				PROJECT NUMBER AND NAME 0463, 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								291.513	291.513
Primary Hardware Dev.	Various	Various	5.765	0.882	09/03						6.647	
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	Various		2.925	02/03	0.700	10/03				3.625	3.625
Primary Hardware - IPAD	SS/CPFF	NGC				1.000	10/03				1.000	1.000
Primary Hardware - ABC2	Various	Various				2.049	01/04	1.800	10/04		3.849	
Primary Hardware - SIAP	Various	Various		1.093	01/03	2.100	01/04				3.193	
Primary Hardware - SIAP												
E-2C Prog Spt Act	TBD	Various				0.989	02/04				0.989	
E-2C Prog Spt Act-SBIR Phase III	TBD	Various				3.461	02/04				3.461	
Non-Coop Combat ID Capability	TBD	Various				1.682	02/04				1.682	
PMRF Net-Centric Test Bed	TBD	Various				4.450	02/04				4.450	
Training Development												
Licenses												
Tooling												
GFE												
Primary Hardware - AODS	TBD	Various						0.600	10/04		0.600	
Subtotal Product Development			464.397	4.900		16.431		2.400			488.128	

Remarks:

R-1 SHOPPING LIST - Item No. 167

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**		PROGRAM ELEMENT 0204152N, E-2 SQUADRONS				PROJECT NUMBER AND NAME 0463, 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
Government Eng. Spt - Various	WX/RC	NAWCAD, PAX RIVER, MD	75.228	0.118	01/03	1.100	10/03	1.073	10/04		77.519	
Government Eng. Spt -ASA/UESA	C/CPFF	Classified	5.661								5.661	5.661
Government Eng. Spt - ASA	MIPR	NRL, Wash., D.C.	0.600								0.600	
Government Eng. Spt	SS/CPFF	NGC, NY	2.301								2.301	2.301
Government Eng. Spt (RAND)	MIPR	Pentagon, Wash., D.C.	0.300								0.300	
Government Eng. Spt (SIAP)	Various	Various		0.202	05/03			0.200	10/04		0.402	
Development Support	WX/RL	NAWCAD, PAX RIVER, MD	0.000			0.600	10/03				0.600	
Software Development												
Integrated Logistics Support												
Configuration Management												
Technical Data												
Studies & Analyses												
GFE												
Subtotal Support			84.090	0.320		1.700		1.273			87.383	

Remarks:

R-1 SHOPPING LIST - Item No. 167

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**		PROGRAM ELEMENT 0204152N, E-2 SQUADRONS				PROJECT NUMBER AND NAME 0463, 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	2.152	12/02	0.700	10/03	1.639	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	2.152		0.700		1.639		Continuing	Continuing	
Remarks:												
Contractor Engineering Support											0.000	
Government Engineering Support											0.000	
Program Management Support	WX/RX	NAWCAD, PAX RIVER, MD	0.091	1.016	01/03	0.470	10/03	0.683	10/04		2.260	
Travel	WX/WR	NAWCAD, PAX RIVER, MD	0.166	0.114	12/02	0.030	10/03	0.060	10/04	Continuing	Continuing	
Transportation											0.000	
											0.000	
Subtotal Management			0.257	1.130		0.500		0.743		Continuing	Continuing	
Remarks:												
Total Cost			645.724	8.502		19.331		6.055		Continuing	Continuing	
Remarks:												

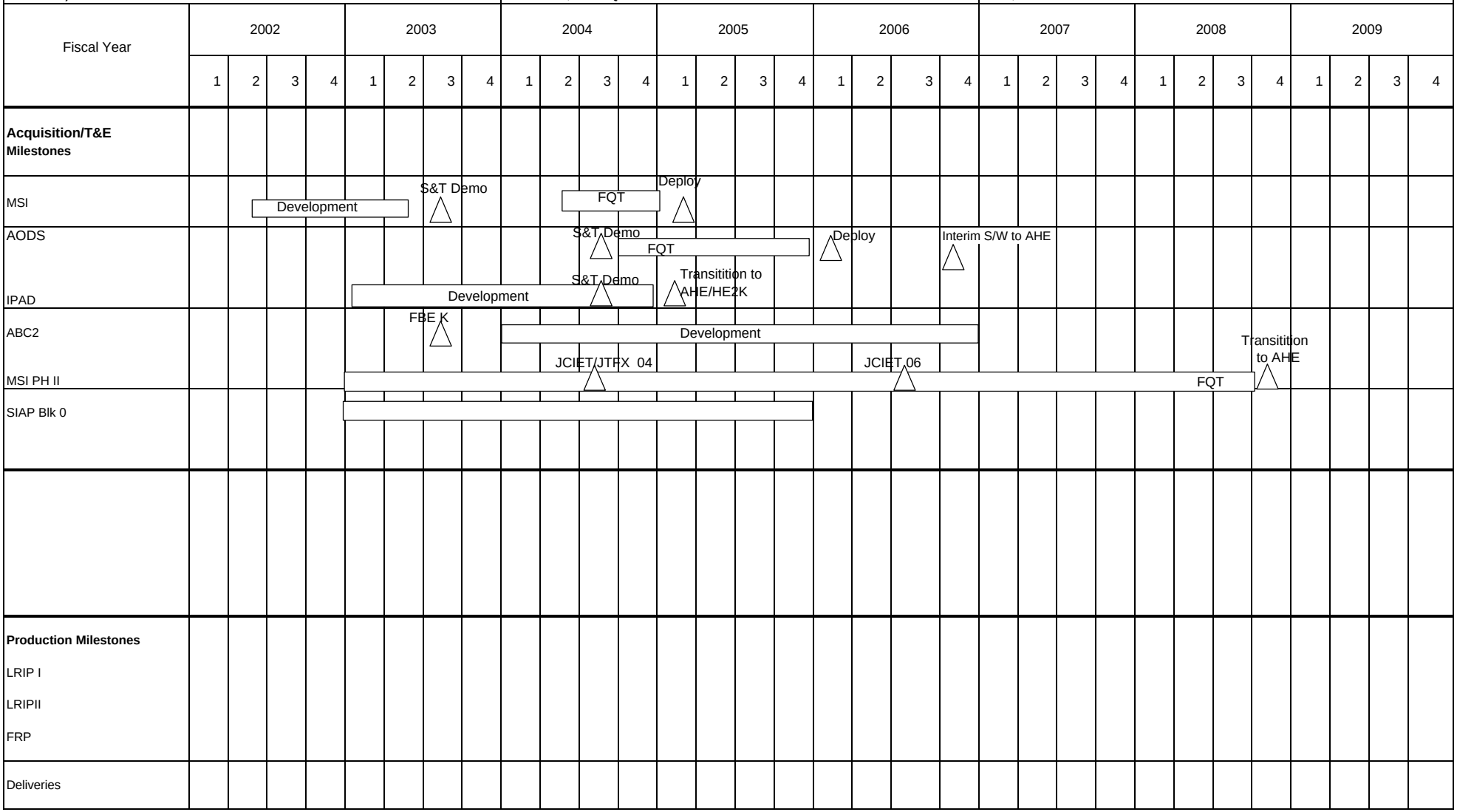
R-1 SHOPPING LIST - Item No. 167

CLASSIFICATION:

EXHIBIT R4, Schedule Profile

DATE: **February 2004**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0204152N, E-2 SQUADRONS	0463, E-2C IMPROVEMENTS



R-1 SHOPPING LIST - Item No. 167

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

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **February 2004**		
APPROPRIATION/BUDGET ACTIVITY **RDT&BA-7**	PROGRAM ELEMENT 0204152N, E-2 SQUADRONS				PROJECT NUMBER AND NAME 0463, E-2C IMPROVEMENTS			
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
MSI PH I Development	2Q - 4Q	1Q - 2Q						
MSI PH I S&T Demo		3Q						
MSI PH I FQT			2-4Q					
MSI PH I Deploy				1Q				
AODS S&T			3Q					
AODS FQT			4Q	1Q - 4Q				
AODS Deploy					1Q			
AODS Interim S/W to AHE					4Q			
IPAD Development		1Q - 4Q	1Q - 4Q					
IPAD Demo			3Q					
IPAD Transition to AHE/HE2K				1Q				
ABC2 FBE K		3Q						
ABC2 Development			1Q - 4Q	1Q - 4Q	1Q - 4Q			
MSI PH II FQT		1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 3Q	
MSI PH II JCIET			3Q		3Q			
MSI PH II Transition to AHE							4Q	
SIAP Blk 0		1Q - 4Q	1Q - 4Q	1Q - 4Q				

R-1 SHOPPING LIST - Item No. 167

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification								DATE: February 2004			
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 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Total PE Cost	**129.1**	**0.0**	**12.0**	**23.1**	**19.8**	**19.7**	**16.5**	**13.9**	**14.1**	**Continuing**	**Continuing**
0725 Communications Automation	**19.9**		**4.8**	**3.2**	**2.1**	**2.1**	**2.7**	**2.7**	**2.8**	**Continuing**	**Continuing**
1083 Shore to Ship Communications	**99.9**		**6.3**	**12.2**	**17.7**	**17.6**	**13.9**	**11.1**	**11.3**	**Continuing**	**Continuing**
0795 Support of MEECN	**6.0**		**1.0**	**0.8**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**		**7.8**
9100 Programmable Integrated Communications Terminals	**3.3**		**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**3.3**
9421 Joint Integrated Systems Technology for Advanced Network Systems (JIST-NET)	**0.0**		**0.0**	**6.9**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**6.9**
Quantity of RDT&E Articles											

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

The Communications Automation Program - This project is a continuing program that provides for automation and communications upgrades for Fleet tactical users. It includes Tactical Messaging (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.

In FY 04 the Program of record Name changed 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.

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.

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.

The Joint Integrated System Technology for Advanced Networking Systems (JIST-NET) project is an ongoing effort to integrate, develop, and support Military SATCOM multi-spectrum communications planning, management, and control capabilities that interface with many mono-spectral planning and management tools and with advanced planning tools. This project has extremely high visibility within the DoD and United States Congress. The project was moved to PEO C4I & Space, PMW 176 from the United States Air Force starting in FY04 to better meet the requirements, deadlines, and funding priorities established for the project.

R-1 SHOPPING LIST - Item No. 168

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification	DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY BA-7**	R-1 ITEM NOMENCLATURE PE: 0204163N TITLE: FLEET COMMUNICATIONS

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.

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.

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 including shore infrastructure for EAM distribution.

Minimum Essential Emergency Communications Network (MEECN) is the Tri-Service transmission system, including land-based segment, which ensured delivery of Emergency Action Messages (EAM) to our strategic platforms.

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 submarine 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 was a Congressional Add in FY02 only.

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.

R-1 SHOPPING LIST - Item No. 168

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: **February 2004**			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT NUMBER AND NAME 0204163N FLEET COMMUNICATION					PROJECT NUMBER AND NAME 0725 Communications Automation					
COST ($ in Millions)	Prior Years Cost	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009		Cost to Complete	Total Program
Project Cost	**19.9**	**4.8**	**3.2**	**2.1**	**2.1**	**2.7**	**2.7**	**2.8**		**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). 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.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N /BA-7	0204163N Shore to Ship Communications Systems	0725 Communications Automation

(U) B. Accomplishments/Planned Program

	FY 03	FY 04	FY 05
ADNS	1.248	0.374	0.428
RDT&E Articles Quantity			

FY03 Accomplishments: Conducted analysis, testing and demonstration in support of future technology refresh. Began development of initial traffic management and Quality of Service (QoS) capabilities. Demonstrated policy routing scheme. Initiated analysis of Voice over Internet Protocol (VoIP) alternatives.
FY04: Continue development of converged voice, video and data capability within ADNS. Continue analysis of VoIP alternatives. Demonstrate VoIP capability. Develop advanced methods to implement prioritization of data using message traffic precedence, dynamic bandwidth management, and asymmetrical operations under Emission Control (EMCON) conditions. Analyze and test line of sight (LOS) and airborne networking. Devise solutions for Allied and coalition interoperability.
FY05: Develop methods for implementing Internet Protocol version 6 (IPv6). Devise solutions for dual stack(IPv4 and IPv6) policy routing. Develop methodology for implementing Black Routing within ADNS. Develop advanced traffic management and control and Quality of Service (QoS) capabilities. Demonstrate dynamic routing scheme.

	FY 03	FY 04	FY 05
Tactical Messaging (NAVMACS)	1.896	1.302	1.214
RDT&E Articles Quantity			

FY03 Accomplishments: Completed HW/SW test and integration for SMS ph2. Completed development and test efforts for multi-enclave messaging administration terminals. Successfully tested DMS Afloat at the Joint Interoperability Certification (JIC) Excercise as part of JUICE '03. Continued test and evaluation of emerging technology and product upgrades such as DMS Directory System Enhancements (DSE Upgrade), Maintenance Release 1 (MR1), and Windows 2000 migration as directed by DISA, DMDS 6.2, and GOTS Delta products. Commenced architecture planning for DMS Client/Server convergence with ISNS.
FY04: Continue development and test efforts for emerging technology and product upgrades such and DMS (DSE Upgrade), Maintenace Release 2 (MR2), complete Windows 2000 migration, IP broadcast integration, Web based solutions, and COTS SW/HW refresh for all enclaves and USN platforms. Support DICE '04 Joint Operational Testing.
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. Conduct Follow-on Operational Test and Evaluation (FOT&E).

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N /BA-7	0204163N Shore to Ship Communications Systems	0725 Communications Automation

(U) B. Accomplishments/Planned Program

	FY 03	FY 04	FY 05
Global Directory Services	1.635	1.169	0.438
RDT&E Articles Quantity			

FY03 Accomplishments: Provided continuing design and development efforts that built an enterprise-wide directory service environment by bridging efforts developed in FY02. Specifically provided for the development of a global meta-directory service that integrated disparate directory services used throughout the Naval community. Efforts also included developing a directory service architecture to support the development of Universal E-mail and provided developmental engineering support for the new functionality that interacted 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 provides 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 will provide the ability to establish Universal Accounts. Provide developmental engineering support for ship-to-shore communications and data sharing.

	FY 03	FY 04	FY 05
JNMS	0.000	0.350	0.000
RDT&E Articles Quantity			

FY04: Support testing of JNMS for Integrated Shipboard and Network Systems (ISNS), ADNS, and lab activities for security accreditation of the system.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0204163N Shore to Ship Communications Systems	0725 Communications Automation

(U) C. PROGRAM CHANGE SUMMARY:

(U) Funding:	FY 2003	FY 2004	FY 2005
FY04 President's Budget:	4.646	3.271	2.935
FY05 President's Budget:	4.779	3.195	2.080
Total Adjustments	0.133	-0.076	-0.855
Summary of Adjustments			
Issue 19004 Tech Issue: Naval Global Directory Service (NGDS)			-0.830
Issue 66556 FY03_SBIR_5-May-03	-0.064		
Issue 67689 MANPOWER			-0.011
Issue 66961 SPAWAR Service Cost Center Adjustments		-0.008	-0.006
Issue 68849 FY03 Update	0.197		-0.005
Issue 68041 Section 8094: Management Improvements		-0.009	
Issue 68060 Section 8029: FFRDC Reduction		-0.031	
Issue 68066 Section 8126: Efficiencies/Revised Econ . Assumptions		-0.028	
Issue 69025 WCW - R&D - SPAWAR - PBD 430			-0.002
Issue 69045 PBD 426 Rates - SSC			0.006
Issue 69492 PBD 604 Inflation			-0.006
Issue 69512 PBD 604 Non Purchase Inflation			-0.001
Subtotal	0.133	-0.076	-0.855

(U) Schedule:

Not Applicable

(U) Technical:

Not Applicable

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0204163N Shore to Ship Communications Systems	0725 Communications Automation

(U) D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
3050 – Comm Auto - NAVMACS	9.248	7.230	10.519	11.834	1.053	2.719	3.008	Continuing	Continuing
3050 – Comm Auto – JNMS	0.000	5.682	1.396	1.687	1.930	2.118	2.170	Continuing	Continuing
3050 – Comm Auto – ADNS	43.682	18.908	41.474	40.992	35.781	32.939	33.962	Continuing	Continuing

(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 acquisiton streamlinging 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.

(U) F. MAJOR PERFORMERS: **

N/A

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

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

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)										DATE: **February 2004**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**			PROGRAM ELEMENT 0204163N Shore to Ship Communications Systems			PROJECT NUMBER AND NAME 0725 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
Primary Hardware Development	PO	SSC	2.814								Continuing	
Ancillary Hardware Development											0.000	
Aircraft Integration											0.000	
Ship Integration											0.000	
Ship Suitability											0.000	
Systems Engineering	PO	SSC	8.207	0.637	Dec 2002	0.251	Dec 2003	0.268	Dec 2004		Continuing	
Prime Mission Product	PO	SSC	1.583	1.278	Dec 2002	0.687	Dec 2003	0.610	Dec 2004		Continuing	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Systems Engineering	CPAF	MAXIM (PMTO)	0.348	0.060	Dec 2002	0.060	Dec 2003	0.060	Dec 2004		Continuing	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Product Development			12.952	1.975		0.998		0.938		0.000	Continuing	

Remarks:

R-1 SHOPPING LIST - Item No. 168

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)									DATE: **February 2004**			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**			PROGRAM ELEMENT 0204163N Shore to Ship Communications Systems			PROJECT NUMBER AND NAME 0725 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
Development Support											0.000	
Software Development	Var	Various	1.411	1.635	Dec 2002	1.169	Dec 2003	0.438	Dec 2004		Continuing	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
Studies & Analyses											0.000	
GFE											0.000	
Award Fees											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Support			1.411	1.635		1.169		0.438		0.000	Continuing	

Remarks:

R-1 SHOPPING LIST - Item No. 168

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**		PROGRAM ELEMENT 0204163N Shore to Ship Communications Systems			PROJECT NUMBER AND NAME 0725 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	0.138	Dec 2003	0.131	Dec 2004		Continuing	
Program Management Support	CPAF	BAH	0.599	0.387	Dec 2002	0.277	Dec 2003	0.285	Dec 2004		Continuing	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			1.916	0.759		0.538		0.539		0.000	Continuing	
Remarks:												
Total Cost			19.926	4.779		3.195		2.080		0.000	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 168

CLASSIFICATION:

EXHIBIT R4, Schedule Profile | DATE: **February 2004**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-7**

PROGRAM ELEMENT NUMBER AND NAME: 0204163N Shore to Ship Communications Systems

PROJECT NUMBER AND NAME: 0725 Communications Automation/ADNS

Fiscal Year	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
Acquisition Milestones			I OC Incr 1 ☆																									
Prototype Phase	CDR Incr 1																											
System Development	▲ Sys Dev Incr 1																											
Test & Evaluation Milestones							DT Incr 1 ▲	OT Incr 1 ▲																				
Development Test																												
Operational Test																												
Deliveries																												

R-1 SHOPPING LIST - Item No. 168

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

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

CLASSIFICATION:

EXHIBIT R4, Schedule Profile | DATE: **February 2004**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-7**

PROGRAM ELEMENT NUMBER AND NAME: 0204163N Shore to Ship Communications Systems

PROJECT NUMBER AND NAME: 0725 Communications Automation/ADNS

Fiscal Year	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
Acquisition Milestones									IOC Incr 2 ☆																			
Prototype Phase	Proto Type Phase Incr 2																											
System Development	SDR Incr 2 ▲	PDR Incr 2 ▲	▲	CD R Incr 2																								
	Sys Dev Incr 2																											
Test & Evaluation Milestones									DT Incr 2 ▲		OT Incr 2 ▲																	
Development Test																												
Operational Test																												
Deliveries																												

R-1 SHOPPING LIST - Item No. 168

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

CLASSIFICATION:

EXHIBIT R4, Schedule Profile			DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT NUMBER AND NAME 0204163N Shore to Ship Communications Systems	PROJECT NUMBER AND NAME 0725 Communications Automation/ADNS	

Fiscal Year	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
Acquisition Milestones																	IOC Incr 3 ☆											
Prototype Phase										Proto Type Phase Incr 3																		
System Development												Incr 3 SDR ▲		PDR Incr 3 ▲	CDR Incr 3 ▲													
												Sys Dev Incr 3																
Test & Evaluation Milestones																	DT Incr 3 ▲											
Development Test																			OT Incr 3 ▲									
Operational Test																												
Deliveries																												

R-1 SHOPPING LIST - Item No. 168

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

CLASSIFICATION:

EXHIBIT R4, Schedule Profile			DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT NUMBER AND NAME 0204163N Shore to Ship Communications Systems	PROJECT NUMBER AND NAME 0725 Communications Automation/ADNS	

Fiscal Year	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
Acquisition Milestones																							IOC Incr 4 ☆						
Prototype Phase																Proto Type Phase Incr 4												
System Development																	Incr 4 SDR ▲		PDR Incr 4 ▲	CDR Incr 4 ▲								
																	Sys Dev Incr 3											
Test & Evaluation Milestones																							DT Incr 4 ▲					
Development Test																										OT Incr 4 ▲		
Operational Test																												
Deliveries																												

R-1 SHOPPING LIST - Item No. 168

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

CLASSIFICATION:

Exhibit R-4a, Schedule Detail					DATE: **February 2004**			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT PE: 0204163N Shore to Ship Communications Systems				PROJECT NUMBER AND NAME 0725 Communications Automation/ADNS			
Schedule Profile	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010
INCREMENT I								
*MAGTF Router **(MR)** R-4 #1*								
Prototype Phase								
System Design Review (SDR)								
Preliminary Design Review (PDR)								
System Development	1-3Q							
Critical Design Review (CDR)	1Q							
IOC	4Q							
Developmental Testing (DT)		3Q						
Operational Testing (OT)		4Q						
INCREMENT II								
*Initial Traffic Management, Shore **(TMS)** R-4 #2*								
Prototype Phase	1-4Q							
System Design Review (SDR)	1Q							
Preliminary Design Review (PDR)	2Q							
System Development	1-3Q							
Critical Design Review (CDR)	3Q							
IOC			1Q					
Developmental Testing (DT)			1Q					
Operational Testing (OT)			3Q					
*Intitial QOS **(IQOS)** R-4 #2*								
Prototype Phase	1-4Q							
System Design Review (SDR)	1Q							
Preliminary Design Review (PDR)	2Q							
System Development	1-3Q							
Critical Design Review (CDR)	3Q							
IOC			1Q					
Developmental Testing (DT)			1Q					
Operational Testing (OT)			3Q					

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **February 2004**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT PE: 0204163N Shore to Ship Communications Systems				PROJECT NUMBER AND NAME 0725 Communications Automation/ADNS			
Schedule Profile	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010
INCREMENT III								
*Voice Over IP **(VOIP)** R-4 #3*								
Prototype Phase			2Q					
System Design Review (SDR)			4Q					
Preliminary Design Review (PDR)				1Q				
System Development			4Q	2Q				
Critical Design Review (CDR)				2Q				
IOC					Q1			
Developmental Testing (DT)					Q1			
Operational Testing (OT)					Q3			
*Advanced QOS **(AQOS)** R-4 #3*								
Prototype Phase			2Q					
System Design Review (SDR)			4Q					
Preliminary Design Review (PDR)				1Q				
System Development			4Q	2Q				
Critical Design Review (CDR)				2Q				
IOC					Q1			
Developmental Testing (DT)					Q1			
Operational Testing (OT)					Q3			
*Advanced Traffic Management **(ADVTM)** R-4 #2*								
Prototype Phase			2Q					
System Design Review (SDR)			4Q					
Preliminary Design Review (PDR)				1Q				
System Development			4Q	2Q				
Critical Design Review (CDR)				2Q				
IOC					Q1			
Developmental Testing (DT)					Q1			
Operational Testing (OT)					Q3			
*IPV6 **(IPV6)***								
Prototype Phase			2Q					
System Design Review (SDR)			4Q					
Preliminary Design Review (PDR)				1Q				
System Development			4Q	2Q				
Critical Design Review (CDR)				2Q				
IOC					Q1			
Developmental Testing (DT)					Q1			
Operational Testing (OT)					Q3			

CLASSIFICATION:

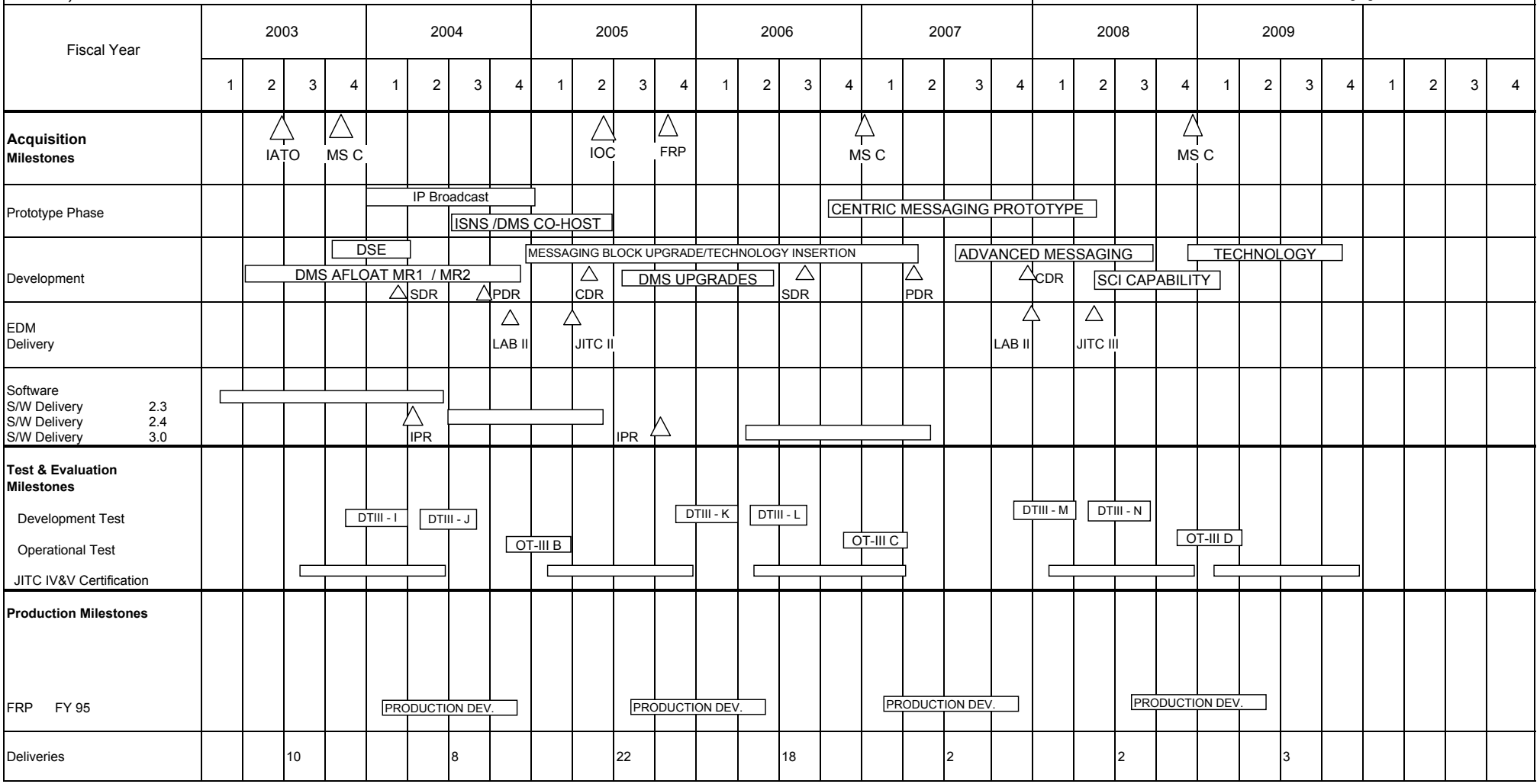
Exhibit R-4a, Schedule Detail					DATE: **February 2004**			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT PE: 0204163N Shore to Ship Communications Systems				PROJECT NUMBER AND NAME 0725 Communications Automation/ADNS			
Schedule Profile	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010
INCREMENT IV								
*Black Routing **(BR)***								
Prototype Phase				4Q				
System Design Review (SDR)					2Q			
Preliminary Design Review (PDR)					3Q			
System Development					2-4Q			
Critical Design Review (CDR)					4Q			
IOC						3Q		
Developmental Testing (DT)						3Q		
Operational Testing (OT)							1Q	
*JTRS Integration **(JTRSI)***								
Prototype Phase				4Q				
System Design Review (SDR)					2Q			
Preliminary Design Review (PDR)					3Q			
System Development					2-4Q			
Critical Design Review (CDR)					4Q			
IOC						3Q		
Developmental Testing (DT)						3Q		
Operational Testing (OT)							1Q	
*Transformational Communications **(TC)***								
Prototype Phase				4Q				
System Design Review (SDR)					2Q			
Preliminary Design Review (PDR)					3Q			
System Development					2-4Q			
Critical Design Review (CDR)					4Q			
IOC						3Q		
Developmental Testing (DT)						3Q		
Operational Testing (OT)							1Q	

R-1 SHOPPING LIST - Item No. 168

CLASSIFICATION:

EXHIBIT R4, Schedule Profile — DATE: **February 2004**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0204163N Fleet Communications	0725 Communications Automation/Tactical Messaging



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

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **February 2004**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT 0204163N Fleet Communications				PROJECT NUMBER AND NAME 0725 Communications Automation/Tactical Messaging			
Schedule Profile	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	
IATO	2Q-3Q							
IOC			2Q					
Milestone C	4Q			4Q		4Q		
FRP			4Q					
IP Broadcast		1Q-4Q						
ISNS / DMS CO-HOST		3Q-4Q	1Q-2Q					
Centric Messaging Prototype				4Q	1Q-4Q	1Q-2Q		
Build 2.3/DMS Integration	1Q							
DMS System Eng.	3Q	1Q						
DMS Afloat MR 1 / MR 2	1Q-4Q	1Q-4Q						
Messaging Block Upgrade/Tech Insertion		4Q	1Q-4Q	1Q-4Q	1Q-2Q			
DMS Upgrades			3Q-4Q	1Q-2Q				
Advanced Messaging					3Q-4Q	1Q-3Q		
SCI Capibility						2Q-4Q	1Q	
Technology						4Q	1Q-4Q	
CDR			2Q		4Q			
SDR		1Q-2Q		3Q				
PDR		3Q-4Q			2Q			
EMD - Lab		4Q			4Q	1Q		
EMD - JITC			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				2Q-4Q	1Q-3Q			
IPR		2Q-3Q	4Q					
Development Test	4Q	1Q, 2Q-3Q	4Q	1Q, 2Q-3Q	4Q	1Q, 2Q-3Q		
Operational Test		4Q	1Q-2Q	4Q	1Q	4Q	1Q	
JITC IV&V Certification	1Q, 3Q-4Q	1Q-2Q	1Q-4Q	2Q-4Q	1Q	1Q-4Q	1Q-4Q	
Deliveries	10	8	22	18	2	2	3	

R-1 SHOPPING LIST - Item No. 168

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: February 2004			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT NUMBER AND NAME 0204163N FLEET COMMUNICATION					PROJECT NUMBER AND NAME 1083 Shore to Ship Communications Systems					
COST ($ in Millions)	Prior Years Cost	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009		Cost to Complete	Total Program
Project Cost	**99.9**	**6.3**	**12.2**	**17.7**	**17.6**	**13.9**	**11.1**	**11.3**		**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, SSGNs and SSBNs. This project provides enhancements to the shore-to-ship transmitting systems and provides submarine unique capabilities to the Network Operation Center (NOC) and Broadcast Control 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. The Common Submarine Radio Room (CSRR) integrates COTS and GOTS components into a single radio room configuration for all classes of submarines. The CSRR design is based on the Virginia class radio room and is adapted for each platform's hull shape and mission needs. Technologies to improve high voltage insulators, helix house bushings and antenna components used in the Fixed VLF (FVLF) transmit systems are evaluated and tested through the High Voltage Improvement Program (HVIP). EAM 2010 will provide a communications approach in support of the Joint Operational Architecture (JOA) for time-critical EAMs to be disseminated across Areas of Responsibility (AOR's) in support of Joint operations This project implements the Joint Staff EAM Board of Directors (BoD) direction to ensure an acquisition strategy exists for a viable long-term EAM dissemination solution (EAM 2010) and that near term enhancements enable the interim hybrid solution to have an infrastructure to allow life sustainment until a replacement system comes on-line circa 2010. 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 planned for the E-6B Airborne Command Post (ABNCP).

R-1 SHOPPING LIST - Item No. 168

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N /BA-7	0204163N Fleet Communications	1083 Shore to Ship Communications Systems

(U) B. Accomplishments/Planned Program

	FY 03	FY 04	FY 05	
High Voltage Improvement Program	0.388	0.350	0.431	
RDT&E Articles Quantity				

FY03 ACCOMPLISHMENTS: Completed development of system to detect onset of corona breakdown which will provide a heightened protection to present day carrier cutoff systems at FVLF sites. Initiated 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. Begin investigation methods for providing additional high voltage performance margin for helix house exit bushings and guy/top hat insulators.
FY05: Complete development of remote corona monitoring/sensing system capability for FVLF sites. Complete investigation on helix house bushings and guy insulators. Begin the investigation into new materials for sustained long term operation in high electromagneticfields.

	FY 03	FY 04	FY 05	
Common Submarine Radio Room (CSRR)	0.925	0.950	0.950	
RDT&E Articles Quantity				

FY03 ACCOMPLISHMENTS: Continued engineering, integration and test for CSRR architecture and component upgrades and completed development and testing of MCS capabilities 1, 2, and 3.
FY04: Complete engineering and integration of SSBN variant of CSRR.
FY05: Complete land-based testing and certification of SSBN variant of CSRR. Conduct operational assessment. □

	FY 03	FY 04	FY05	
SCAP/CEP	3.882	4.170	4.817	
RDT&E Articles Quantity				

FY03 ACCOMPLISHMENTS: Continued SCAP, conducted CEP and strategic connectivity threats, and performed analysis.
FY04: Continue SCAP, conduct CEP and strategic connectivity threats, and perform analysis.
FY05: Continue SCAP, conduct CEP and strategic connectivity threats, and perform analysis. Extend analysis to cover VLF shore conectivity paths and MILSTAR monitoring.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N /BA-7	0204163N Fleet Communications	1083 Shore to Ship Communications Systems

(U) B. Accomplishments/Planned Program

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

FY03 ACCOMPLISHMENTS: Completed research and development necessary for development of shore based submarine unique capabilities at the NOC and BCA.

	FY 03	FY 04	FY 05	
Concept Development/Systems Planning	0.375	0.916	1.262	
RDT&E Articles Quantity				

FY03 ACCOMPLISHMENTS: Continued design concept and initial feasible studies for integrated FVLF dynamic control system.
FY04: Complete design concept and initial feasible studies for integrated FVLF dynamic control system. Begin development of methods to provide the operational flexibility of dynamic allocation of the Fixed Submarine Broadcast System (FSBS) bandwidth.
FY05: Continue development of dynamic allocation capability of the FSBS bandwidth. Begin development of coding and compression necessary to significantly increase the equivalent data throughput. Demonstrate concept on the air.

	FY 03	FY 04	FY 05	
SUBOPAUTH	0.000	1.659	2.768	
RDT&E Articles Quantity				

FY04: Develop architecture to ensure automated SUBOPAUTH 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.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N /BA-7	0204163N Fleet Communications	1083 Shore to Ship Communications Systems

(U) B. Accomplishments/Planned Program

	FY 03	FY 04	FY 05	
EAM 2010	0.000	4.173	4.660	
RDT&E Articles Quantity				

FY04: Conduct an end-to-end assessment necessary to support the baseline of the current system and support the Analysis of Alternatives and Initial Capabiltiies Description (ICD) for future capabilities.
FY05: Implement life extension actions identified in the end-to-end assessment. Develop computer modeling and simulations. Initiate the acquisition program process and continue the EAM 2010 Analysis of Alternatives. Initiate the development of the prototype.

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

FY05: Shore site development and integration of a VLF transmit terminal with elements common with terminals planned for the E-6B Airborne Command Post (ABNCP).

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

FY05: Develop architecture to support implementation of a unified mode in the VLF transmit terminal common to Navy and Air Force applications.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0204163N Fleet Communications	1083 Shore to Ship Communications Systems

(U) C. PROGRAM CHANGE SUMMARY:

(U) Funding:	FY 2003	FY 2004	FY 2005
FY04 President's Budget:	6.539	12.386	17.334
FY05 President's Budget	6.270	12.218	17.704
Total Adjustments	-0.269	-0.168	0.370
Summary of Adjustments			
Issue 68849 FY 2003 Update	-0.156		
Issue 66556 FY03 SBIR	-0.113		
Issue 68041 Section 8094: Management Improvements		-0.033	
Issue 68066 Sec. 8126: Efficiencies/Revised Econ. Assumptions		-0.105	
Issue 66961 SPAWAR Service Cost Center Adjustments		-0.030	-0.050
Issue 69025 WCF - R&D SPAWAR - PBD 430			-0.019
Issue 69045 PBD 426 Rates - SSC			0.047
Issue 69389 NET ZERO Negative Fixes for RDTEN			-0.001
Issue 69492 PBD604 Inflation			-0.047
Issue 69512 PBD604 non purchase inflation			-0.01
Issue 69650 P07 Technical Adjustments			-0.008
Issue 19000 N61 HQ Support			-0.027
Issue 19014 Technical Issue: Fund VLF & MILSTAR CEP			0.525
Issue 67767 NWCF Rates - SPAWAR SSC Rates			-0.039
Issue 67760 NWCF Rates - NUWC Rates			-0.004
Miscellaneous Navy Adjustments			0.003
Subtotal	-0.269	-0.168	0.370

(U) Schedule:

CSRR program Milestone C has slipped from 2nd QTR FY04 to 4th QTR FY04. Navy and DoD TEMP approval signatures have delayed proceeding to CSRR Milestone C.

(U) Technical:

Not Applicable

R-1 SHOPPING LIST - Item No. 168

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0204163N Shore to Ship Communications Systems	1083 Shore to Ship Communications Systems

(U) D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
3107 Submarine Broadcast Support	3.687	16.449	17.802	13.211	13.314	18.513	18.729	Continuing	Continuing

(U) E. ACQUISITION STRATEGY:

CSRR will integrate CNO N6 communication programs into the submarine radio rooms. The program has been designated as 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, SSGN, SSN) will require design integration and operational testing. The CSRR program is proceeding to a Milestone C decision in 4th Quarter FY04. 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 develop an approach to use COTS and NDI components to extend operational life of the existing system and to establish a long term solution compatible with future Global Information Grid structures. The program plans MS-A in 2nd QTR FY06. Procurement contract award will be based on full and open competition. SUBOPAUTH is a phased Abbreviated Acquisition Program (AAP) using COTS and NDI.

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)										DATE: **February 2004**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**		PROGRAM ELEMENT 0204163N Fleet Communications				PROJECT NUMBER AND NAME 1083 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	0.481	12/02	1.862	12/03	3.778	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	0.285	N/A	3.027	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	0.247	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	1.487		3.795		8.936		Continuing	Continuing	
Remarks:												
Development Support											0.000	
Software Development	WR	SSC San Diego, CA	3.000	1.767	11/02	1.603	11/03	2.734	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		2.734		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 168

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**			PROGRAM ELEMENT 0204163N Fleet Communications			PROJECT NUMBER AND NAME 1083 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 Evaluatio	CPFF	APL/JHU, Baltimore, MD	4.100	2.100	12/02	2.400	12/03	3.950	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		5.067		Continuing	Continuing	
Remarks:												
Contractor Engineering Support	WR	US Army, Monmouth, NJ				0.492	11/03	0.452	11/04	Continuing	Continuing	
Government Engineering Support	WR	Various				0.135	11/03	0.325	11/04	Continuing	Continuing	
Program Management Support	Various	Various	3.829	0.234	11/02	0.129	11/03	0.190	11/04	Continuing	Continuing	
Travel											0.000	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			3.829	0.234		0.756		0.967		Continuing	Continuing	
Remarks:												
Total Cost			99.899	6.270		12.218		17.704		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 168

CLASSIFICATION:

EXHIBIT R4, Schedule Profile — DATE: **February 2004**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-7**

PROGRAM ELEMENT NUMBER AND NAME: 0204163N Fleet Communications

PROJECT NUMBER AND NAME: 1083 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 △										IOC ☆										FOC ☆
Test & Evaluation Milestones																																
Development Test - SSBN												D/T SSBN																				
Operational Assessment																OA																
OPEVAL SSBN																				OPEVAL SSBN												

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

R-1 SHOPPING LIST - Item No. 168

CLASSIFICATION:

Exhibit R-4a, Schedule Detail					DATE: **February 2004**			
APPROPRIATION/BUDGET ACTIVITY **RDT&BA-7**	PROGRAM ELEMENT 0204163N Fleet Communications				PROJECT NUMBER AND NAME 1083 Shore to Ship Communications Systems			
Schedule Profile - CSRR	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Milestone C			4Q					
Operational Assessment				4Q				
Development Test (D/T)			4Q	1Q - 3Q				
OPEVAL SSBN					4Q			
IOC					4Q			

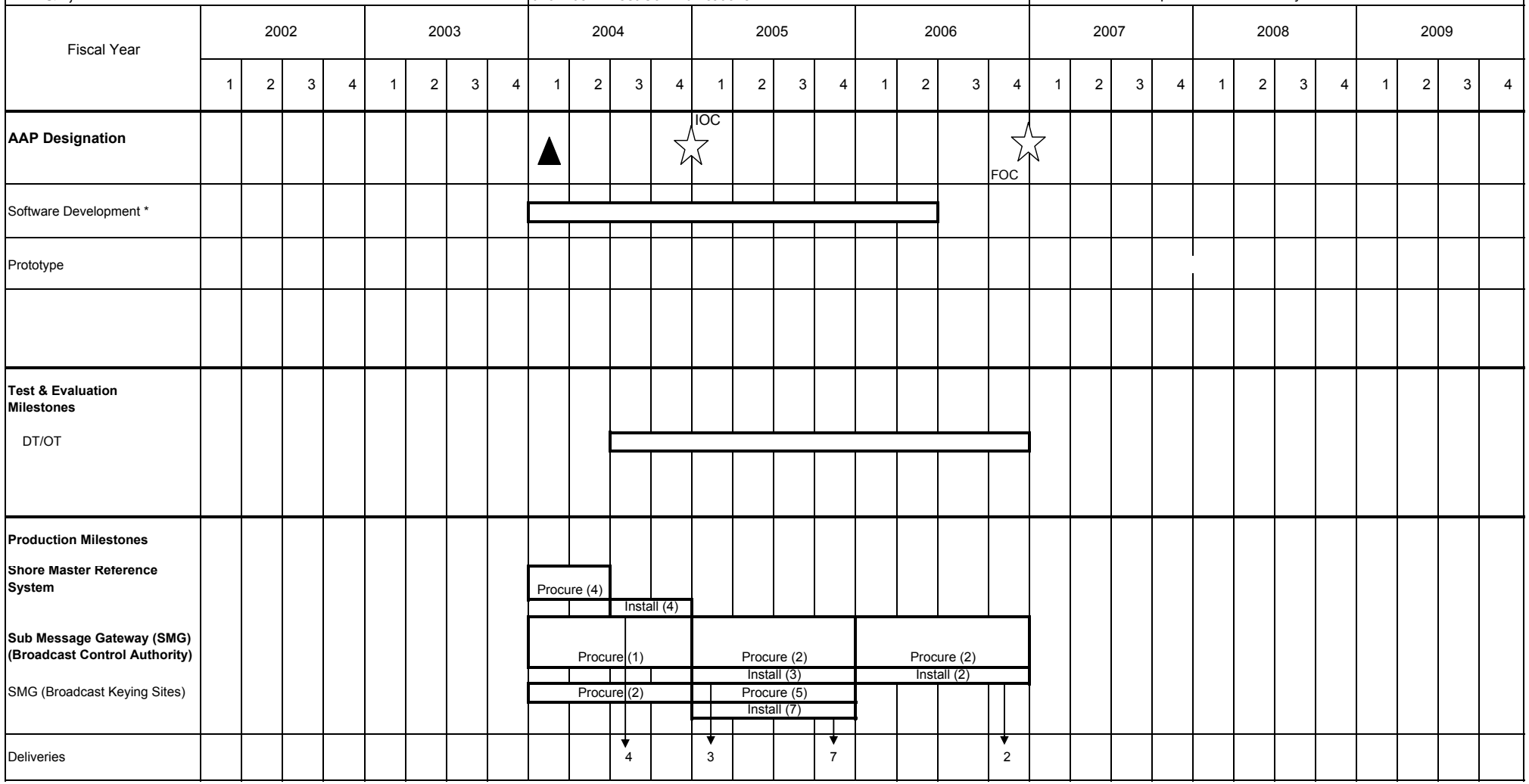
CLASSIFICATION:

EXHIBIT R4, Schedule Profile | DATE: **February 2004**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-7**

PROGRAM ELEMENT NUMBER AND NAME: 0204163N Fleet Communications

PROJECT NUMBER AND NAME: 1083 Shore to Ship Communications Systems **SUBOPAUTH**



R-1 SHOPPING LIST - Item No. 168

* Development of tool sets for efficiency. Hardware procured in 310700

CLASSIFICATION:

Exhibit R-4a, Schedule Detail					DATE: **February 2004**			
APPROPRIATION/BUDGET ACTIVITY **RDT& BA-7**	PROGRAM ELEMENT 0204163N Fleet Communications				PROJECT NUMBER AND NAME 1083 Shore to Ship Communications Systems			
Schedule Profile - **SUBOPAUTH**	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
AAP Designation			1Q					
Software Development			1Q-4Q	1Q-4Q	1Q-2Q			
IOC			4Q					
SMRS Procure			1Q-2Q					
SMRS Install			3Q-4Q					
SMG Procure			1Q-4Q	1Q-4Q	1Q-4Q			
SMG Install				1Q-4Q	1Q-4Q			
Development Test/Operational Test			3Q-4Q	1Q-4Q	1Q-4Q			
FOC					4Q			

CLASSIFICATION:

EXHIBIT R4, Schedule Profile | DATE: **February 2004**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-7**

PROGRAM ELEMENT NUMBER AND NAME: 0204163N Fleet Communications

PROJECT NUMBER AND NAME: 1083 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																															FRP (1) △	
Deliveries																																

R-1 SHOPPING LIST - Item No. 168

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

CLASSIFICATION:

Exhibit R-4a, Schedule Detail					DATE: **February 2004**			
APPROPRIATION/BUDGET ACTIVITY **RDT& BA-7**	PROGRAM ELEMENT 0204163N Fleet Communications				PROJECT NUMBER AND NAME 1083 Shore to Ship Communications Systems			
Schedule Profile - EAM 2010	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Milestone A					2Q			
Prototype Phase					1Q - 4Q	1Q - 3Q		
Milestone B						3Q		
Development Test (DT&E)						4Q	1Q - 3Q	
Operational Test							4Q	1Q - 2Q
Milestone C								2Q
FRP								3Q - 4Q

CLASSIFICATION:

EXHIBIT R4, Schedule Profile | DATE: **February 2004**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-7**

PROGRAM ELEMENT NUMBER AND NAME: 0204163N Fleet Communications

PROJECT NUMBER AND NAME: 1083 Shore to Ship Communications Systems - VLF Transmit Terminal

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
AAP Designation															△													IOC ☆				
Collaborative Design Definition													▭	▭	▭	▭	▭	▭	▭	▭												
Integration/Modification																	▭	▭	▭	▭	▭	▭	▭	▭								
Test & Evaluation Milestones																																
Development Test																				DT&E												
Operational Test																									▭	▭						
Production Milestones																																
Procure																					Procure (6)				Procure (6)				Procure (12)			
Install																									Install (6)				Install (6)			
Deliveries																									6				6			

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

CLASSIFICATION:

Exhibit R-4a, Schedule Detail					DATE: **February 2004**			
APPROPRIATION/BUDGET ACTIVITY **RDT& BA-7**	PROGRAM ELEMENT 0204163N Fleet Communications				PROJECT NUMBER AND NAME 1083 Shore to Ship Communications Systems			
Schedule Profile - **VLF Transmit Terminal**	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Collaborative Design Definition				1Q-4Q	1Q			
AAP Designation				3Q				
Integration/Modification					1Q-4Q			
Development Test					3Q-4Q			
Procure						1Q-4Q	1Q-4Q	1Q-4Q
Operational Test							1Q-2Q	1Q-4Q
IOC							2Q	
Install							1Q-4Q	1Q-4Q

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: **October 2003**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT NUMBER AND NAME 0204163N FLEET COMMUNICATION					PROJECT NUMBER AND NAME 0795 Support of MEECN				
COST ($ in Millions)	Prior Years Cost	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009		Cost to Complete	Total Program
Project Cost	**6.0**	**1.0**	**0.8**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**			**7.760**
RDT&E Articles Qty											**0**

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

MEECN is a non-acquisition program which develops methods of strategic communications from the Commander in Chief to the Strategic Forces in compliance with the Joint Staff Nuclear Technical Performance Criteria (NTPC). The MEECN requirements cover delivery of Emergency Action Messages (EAMs) from the Commander-in-Chief to Nuclear weapons execution platforms (SSBN, B-52 bombers and fixed site Launch Control Centers) over survivable communication paths. The MEECN accomplishes this by designing, developing, testing new MEECN communication mode designs. The modes are designed to provide assured delivery in hostile RF environments within the required delivery time to execute nuclear orders. The MEECN develops the communications modes based on current state of the art in communications and coding theory and adaptive signal processing. The products delivered by the MEECN consist of a Mode Standard. This Standard includes the following: System Requirements, Software Requirements, Software Design, executable software code, Test Description and Test procedures. This Mode Standard package is provided to individual STRATCOM system implementers (both Navy and Air Force) for implementation in various Strategic Communications transmitters and receivers. After delivery of the Mode Standard to implementers, the MEECN provides engineering expertise to facilitate implementation and testing on operational equipments.

There is a current STRATCOM requirement to develop a follow-on mode to the current operational mode set known as HIDAR-plus. The HIDAR-plus will replace a set of modes with a single mode that increases robustness to better meet delivery requirements and to greatly reduce the overall delivery time of the mode sequence currently in operation. Another key factor is to provide a mode with a single baud rate that meets requirements as defined in the Joint Staff Nuclear Technical Performance Criteria. One of the transmit platforms is an E-6B aircraft. The aircraft must conduct a tight orbit with several miles of antenna hanging down while transmitting multiple baud rates. This creates strain on the power amplifier system and extreme wear and tear on the aircraft. The HIDAR-plus mode will be designed to greatly reduce the overall time that is required for the aircraft to fly in tight orbit formation to transmit messages. The introduction of HIDAR-plus will lead to greatly reduced wear and tear and will extend the life of the power amplifier system and the E-6B airframe.

The MEECN budget beginning in FY05-FY09 has been zeroed. The FY04 funding will be utilized to preserve all previous mode development research into a single design document to capture all the Strategic Communications research conducted under the MEECN. This document will provide the Joint Staff with a preliminary design detailing the obtainable performance characteristics of HIDAR-plus necessary for planning future long term EAM distribution requirements.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N /BA-7	0204163N FLEET COMMUNICATION	0795 Support of MEECN

(U) B. Accomplishments/Planned Program

	FY 03	FY 04	FY 05	
Accomplishments/Effort/Subtotal Cost	0.999	0.787	0.000	
RDT&E Articles Quantity				

FY03 Accomplishments: Updated MEECN Mode design for ease in moderate processor implementations. Continued non-AUTODIN based Emergency Action Messages (EAMs) delivery system (NOVA Hybrid Solution) and completed NOVA Hybrid Solution certification testing to support the FY03 AUTODIN closure. Evaluated transverse electric/magnetic antenna pattern combining methods for improved MEECN mode.
FY04: Consolidate all previous mode development research into a single design document to capture all the Strategic Communications research conducted under the MEECN and to provide the Joint Staff with a preliminary design detailing the obtainable performance characteristics of HIDAR-plus.

Accomplishments/Effort/Subtotal Cost				
RDT&E Articles Quantity				

Accomplishments/Effort/Subtotal Cost				
RDT&E Articles Quantity				

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N /BA-7	0204163N FLEET COMMUNICATION	0795 Support of MEECN

(U) C. PROGRAM CHANGE SUMMARY:

(U) Funding:	FY 2003	FY 2004	FY 2005
FY04 President's Budget:	1.031	0.827	0.727
FY05 President's Budget	0.999	0.787	0.000
Total Adjustments	-0.032	-0.040	-0.727
Summary of Adjustments			
Issue 68849 FY 2003 Update	-0.016		
Issue 66556 FY03 SBIR 5 May 03	-0.016		
Issue 68060 FFRDC Reduction		-0.031	
Issue 68041 Section 8094: Mgmt. Improvements		-0.002	
Issue 68066 Sec 8126: Efficiencies/Revised Econ. Assump		-0.007	
Issue 19000 N61 HQ Support			-0.042
Issue 66777 Sea Enterprise (LOE II)			-0.685
Subtotal	-0.032	-0.040	-0.727

(U) Schedule:

Not Applicable

(U) Technical:

Not Applicable

R-1 SHOPPING LIST - Item No. 168

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /BA-7**	PROGRAM ELEMENT NUMBER AND NAME 0204163N FLEET COMMUNICATION	PROJECT NUMBER AND NAME 0795 Support of MEECN	

(U) D. 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 Complete	Total Cost
Not Applicable										

(U) E. ACQUISITION STRATEGY:

Not Applicable

R-1 SHOPPING LIST - Item No. 168

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**		PROGRAM ELEMENT 0204163N FLEET COMMUNICATION			PROJECT NUMBER AND NAME 0795 Support of MEECN							
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	WR	SSC San Diego, CA	2.178	0.345	11/02	0.563	11/03				3.086	
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			2.178	0.345		0.563		0.000		0.000	3.086	
Remarks:												

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**			PROGRAM ELEMENT 0204163N FLEET COMMUNICATION			PROJECT NUMBER AND NAME 0795 Support of MEECN						
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	0.270								0.270	
Operational Test & Evaluation	Various		0.221								0.221	
Live Fire Test & Evaluation											0.000	
Test Assets											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal T&E			0.491	0.000		0.000		0.000		0.000	0.491	
Remarks:												
Contractor Engineering Support	WR	US Army, Monmouth, NJ	2.490	0.584	11/02	0.084	11/03				3.158	
Government Engineering Support		SSC San Diego, CA	0.498	0.058	11/02	0.125	11/03				0.681	
Program Management Support		SSC San Diego, CA	0.317	0.012	11/02	0.015	11/03				0.344	
Travel											0.000	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			3.305	0.654		0.224		0.000		0.000	4.183	
Remarks:												
Total Cost			5.974	0.999		0.787		0.000		0.000	7.760	
Remarks:												

R-1 SHOPPING LIST - Item No. 168

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																																DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**									PROGRAM ELEMENT NUMBER AND NAME 0204163N Fleet Communications												PROJECT NUMBER AND NAME 0795 Support of MEECN											
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
MEECN - NON-Acquisition Program																																
HIDAR-Plus Requirements and Design Description Documents																																
Deliveries																																

R-1 SHOPPING LIST - Item No. 168

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

CLASSIFICATION:

Exhibit R-4a, Schedule Detail					DATE: **February 2004**			
APPROPRIATION/BUDGET ACTIVITY **RDT& BA-7**	PROGRAM ELEMENT 0204163N FLEET COMMUNICATION				PROJECT NUMBER AND NAME 0795 Support of MEECN			
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
HIDAR-Plus Requirements and Design Description Documents			1Q-4Q					

R-1 SHOPPING LIST - Item No. 168

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: **February 2004**			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT NUMBER AND NAME 0204163N FLEET COMMUNICATION					PROJECT NUMBER AND NAME 9421 Joint Integrated Systems Technology for Advanced Network Systems (JIST-NET)					
COST ($ in Millions)	Prior Years Cost	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009		Cost to Complete	Total Program
Project Cost			**6.9**								**6.9**
RDT&E Articles Qty											**0**

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

The Joint Integrated System Technology for Advanced Networking Systems (JIST-NET) project is an ongoing effort to integrate, develop, and support Military SATCOM multi-spectrum communications planning, management, and control capabilities that interface with many mono-spectral planning and management tools and with advanced planning tools. This project has extremely high visibility within the DoD and United States Congress. The project was moved to PEO C4I & Space, PMW 176 from the United States Air Force starting in FY04 to better meet the requirements, deadlines, and funding priorities established for the project.

Congressional add to define requirements and interface/integrate existing and newly developed SATCOM mission management capabilities into the JIST-NET project.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N /BA-7	0204163N Shore to Ship Communications Systems	9421 Joint Integrated Systems Technology for Advanced Network Systems (JIST-NET)

(U) B. Accomplishments/Planned Program

	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		6.923	
RDT&E Articles Quantity			

FY04: Congressional add to define requirements and interface/integrate existing and newly developed SATCOM mission management capabilities into the JIST-NET project. The contractor will update the JIST-NET Software Design for the next JIST-NET prototype using the results of the Software Requirements Analyses.

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

R-1 SHOPPING LIST - Item No. 168

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0204163N Shore to Ship Communications Systems	9421 Joint Integrated Systems Technology for Advanced Network Systems (JIST-NET)

(U) C. PROGRAM CHANGE SUMMARY:

(U) Funding:	FY 2003	FY 2004	FY 2005
FY04 President's Budget:		0.000	
FY05 President's Budget:		6.923	
Total Adjustments	0.000	6.923	0.000

Summary of Adjustments

Issue 68559 Joint Integrated Systems Technology		7.000	
Issue 68041 Sec. 8094: Management Improvements		-0.018	
Issue 68066 Sec. 8126: Efficiencies/Revised Econ. Assumptions		-0.059	
Subtotal	0.000	6.923	0.000

(U) Schedule:

Not Applicable

(U) Technical:

Not Applicable

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /BA-7**	PROGRAM ELEMENT NUMBER AND NAME 0204163N FLEET COMMUNICATION	PROJECT NUMBER AND NAME 9421 Joint Integrated Systems Technology for Advanced Network Systems (JIST-NET)

(U) D. 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 Complete	Total Cost
Not Applicable										

(U) E. ACQUISITION STRATEGY:

Not Applicable

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: **February 2004**	
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7**					R-1 ITEM NOMENCLATURE 0204229N Tomahawk Weapons System (TWS)			
COST ($ in Millions)		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost		**97.284**	**76.524**	**28.776**	**18.262**	**13.409**	**13.067**	**13.328**
A0545 Tomahawk		**97.284**	**76.524**	**28.776**	**18.262**	**13.409**	**13.067**	**13.328**

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

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

The Tactical Tomahawk (TACTOM) All-Up-Round 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 and associated antenna systems. The Tomahawk program (A0545) also includes development of Torpedo Tube Launch (TTL) capability for submarines and Roadmap studies for warhead improvement.

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

The Tomahawk Weapons Control System provides launch capability for surface and submarine platforms. Development of the Tactical Tomahawk Weapons Control System (TTWCS) provides a common architecture to launch the Tactical Tomahawk 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) in DEC 03, and Phase B IOC (TACTOM) planned to coincide with the AUR IOC in FY 2004.

R-1 SHOPPING LIST - Item No. 169

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2004**	
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 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost		**97.284**	**76.524**	**28.776**	**18.262**	**13.409**	**13.067**	**13.328**
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

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

The Tactical Tomahawk (TACTOM) All-Up-Round 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 and associated antenna systems. The Tomahawk program (A0545) also includes development of Torpedo Tube Launch (TTL) capability for submarines and Roadmap studies for warhead improvement.

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The Tomahawk Weapons Control System provides launch capability for surface and submarine platforms. Development of the Tactical Tomahawk Weapons Control System (TTWCS) provides a common architecture to launch the Tactical Tomahawk 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) in DEC 03, and Phase B IOC (TACTOM) planned to coincide with the AUR IOC in FY 2004.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0204229N Tomahawk Weapons System (TWS)	A0545 TOMAHAWK

(U) B. Accomplishments/Planned Program

		FY 03	FY 04	FY 05
Tactical Tomahawk All Up Round/Subtotal Cost		55.626	40.364	16.487
RDT&E Articles Quantity				

Sucessfully completed second Tactical Tomahawk contractor flight test (DT-1). All performance parameters met or exceeded. Initiated government flight testing and successfully conducted four government TECHEVAL flights. Completed TECHEVAL. Initiated hardware/software design and integration of Tactical Tomahawk Torpedo-Tube Launch (TT-TTL) capability. 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. Conduct flight tests of TT-TTL. Initiate TACTOM Preplanned Product Improvement.

		FY 03	FY 04	FY 05
TACTOM Command and Control/Subtotal Cost		24.057	10.578	5.362
RDT&E Articles Quantity				

Continue the incorporation of new capabilities in Tomahawk Command and Control systems necessary for the employment of Tactical Tomahawk, supported Tactical Tomahawk Weapon System TECHEVAL, and continued development of related training and installation materials.
Continue 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.
Continue imagery upgrades to Tomahawk Command and Control Systems.

R-1 SHOPPING LIST - Item No. 169

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0204229N Tomahawk Weapons System (TWS)	A0545 TOMAHAWK

(U) B. Accomplishments/Planned Program

		FY 03	FY 04	FY 05
TACTOM Weapons Control System/Subtotal Cost		12.263	12.243	6.927
RDT&E Articles Quantity				

Completed OPEVAL for Phase 1A of Weapons Control System. Continue Phase 1B Land Based and Sea Based System Testing.
Initiate TECHEVAL/OPEVAL for Phase 1B. 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 and TTNCT version 5 systems engineering efforts.
Continue development of Tactical Tomahawk Weapons System Integrated Training Architecture, continue with version 5 software development.

		FY 03	FY 04	FY 05
Precision Terrain Aided Navigation/Subtotal Cost		5.338	5.640	0.000
RDT&E Articles Quantity				

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

		FY 03	FY 04	FY 05
Tactical Tomahawk Penetrator Capability/Subtotal Co		0.000	7.699	0.000
RDT&E Articles Quantity				

Initiate Roadmap studies for warhead improvement program, including penetration capability, lethality analysis and program development.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0204229N Tomahawk Weapons System (TWS)	A0545 TOMAHAWK

(U) C. PROGRAM CHANGE SUMMARY:

(U) Funding:	FY 2003	FY 2004	FY 2005
Previous President's Budget:	97.448	71.385	36.143
Current President's Budget	97.284	76.524	28.776
Total Adjustments	-0.164	5.139	-7.367
Summary of Adjustments			
SBIR/STTR Transfer	-2.043		
Reprogrammings	1.879		
Congressional Undistributed Adjustments		-0.861	
Congressional Increases		6.000	
Economic Assumptions			-0.146
Reprioritization			-7.221
Subtotal	-0.164	5.139	-7.367

(U) Schedule:

Successful completion of the first of two contractor TACTOM flight tests occurred in August 2002 which initiated the LRIP 1 contract award October 3, 2002. Favorable Operational Assessment from OPTEVFOR initiated the LRIP 2 contract award January 2003. Final Systems qualification and integration completed in 3QFY03. The TACTOM development flight program experienced four successful flights (2 from a surface combatant and 2 from a submarine) including 2 Live Fire Test and Evaluation detonations, one from each platform. All Key Performance Parameters and technical objectives were met, and in many cases exceeded. Formal TECHEVAL report submitted. OPEVAL started December 1, 2003. TACTOM IOC scheduled for May 2004, coinciding with delivery of the first LRIP missile. Milestone III and Full Rate Production Award scheduled for June 2004.

(U) Technical:

Not Applicable

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0204229N Tomahawk Weapons System (TWS)	A0545 TOMAHAWK

(U) D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
WPN BLI 210100 Tomahawk	437.054	352.645	256.196	346.527	377.130	439.918	427.010	0.000	2636.480
OPN BLI 525000 Surface Tomahawk Support Equipment	49.299	60.953	68.600	67.193	40.771	33.688	31.869	450.369	802.742
OPN BLI 525005 Surface Tomahawk Support Equipment Installation	3.007	1.998	1.132	0.780	3.173	0.756	2.876		13.722
OPN BLI 525500 Submarine Tomahawk Support Equipment	5.134	5.743	5.469	7.097	8.192	8.695	9.229	60.000	109.559
OPN Spares BLI 902010 Initial Spares	0.624	0.620	0.862	0.617	0.622	0.000	0.000		3.345
OPN Spares BLI 902090 Vendor Direct Spares	0.629	0.633	0.987	0.641	0.647	0.639	0.638		4.814

Related RDT&E,N: Not Applicable

(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 a multi-year procurement contract for the full rate production years FY04 through FY08.

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**			PROGRAM ELEMENT 0204229N Tomahawk Weapons System (TWS)			PROJECT NUMBER AND NAME 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	2.000	11/03				214.228	214.228
	C/FP	Honeywell, Minneapolis, MN		0.000		3.000	01/04	0.000			3.000	3.000
TTPV	SS/CPAF	Raytheon, Tucson, AZ		0.000		2.000	11/03				2.000	2.000
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	11.503	12/02	3.933	12/03	2.025	12/04		34.302	34.302
	SS/CPFF	Boeing, St. Louis, MO	0.650	2.175	12/02	2.103	12/03	0.000	12/04		4.928	4.928
	SS/CPFF	BAE Systems, San Diego, CA	0.929	0.640	12/02	0.480	12/03	0.327	12/04	0.273	2.649	2.649
Weapons Control System	C/CPAF	Lockheed, Valley Forge, PA	89.043	5.790	12/02	7.746	12/03	4.737	12/04	4.419	111.735	111.735
Ship Integration												
Launcher Integration	SS/CPAF	NAVSEA, Washington, DC	20.043	0.545	12/02	4.140	12/03	0.529	12/04	2.300	27.557	27.557
Systems Engineering												
All Up Round	C/FP	Raytheon, Tucson, AZ	9.000	3.491	11/02	2.569	11/03	0.470	11/04		15.530	15.530
	SS/CPFF	UARC APL, Laurel, MD	18.887	4.615	01/03	4.450	01/04	2.434	01/05		30.386	30.386
	C/FP	Boeing, St. Louis, MO	3.000								3.000	3.000
Weapons Control System	SS/CPFF	URAC APL, Laurel, MD	0.804	0.377	12/02	1.735	01/04	0.597	01/05	0.716	4.229	4.229
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	42.261		44.807		12.901		23.164	2,658.785	

Remarks:

R-1 SHOPPING LIST - Item No. 169

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**			PROGRAM ELEMENT 0204229N Tomahawk Weapons System (TWS)			PROJECT NUMBER AND NAME 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	0.816	11/02	0.820	11/03	1.086	11/04	Continuing	Continuing	
	WR	NAWC-WD, China Lake, CA	9.291	2.461	11/02	1.200	11/03	0.309	11/04	Continuing	Continuing	
	WR	NSWC, Pt Hueneme, CA	3.476	0.411	11/02	0.283	11/03	0.085	11/04	Continuing	Continuing	
	WR	NAWC-AD, Pax River, MD	4.177	0.802	11/02	0.632	11/03	0.312	11/04	Continuing	Continuing	
	WR	NWAD, Corona	1.278	0.000		0.000		0.077	11/04	Continuing	Continuing	
	WR	NUWC, Newport, RI	4.481	0.631	11/02	2.931	11/03	1.294	11/04	Continuing	Continuing	
	SS/CPFF	SAIC, Arlington, VA	6.557	0.682	12/02	2.048	12/03	1.049	12/04		10.336	10.336
	WR	NSWC, Indian Head, MD	5.765	0.673	11/02	0.442	11/03	0.482	11/04	Continuing	Continuing	
	WR	NSWC, Carderock, MD	1.263	0.460	11/02	0.100	11/03	0.000		Continuing	Continuing	
	C/CPFF	Honeywell, Minneapolis, MN	1.538	2.386	01/03	0.000		0.000			3.924	3.924
	Various	Various	16.161	0.403	04/03	0.487	12/03	0.074	12/04	Continuing	Continuing	
Weapons Control Systems	WR	NUWC, Newport, RI	12.498	2.566	12/02	0.629	11/03	0.346		Continuing	Continuing	
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	2.180	12/03	1.548	12/04	1.530	9.202	9.202
	SS/CPFF	SAIC, Arlington, VA	8.492	4.675	12/02	1.280	12/03	0.000	12/04	0.679	15.126	15.126
	SS/CPFF	URAC APL, Laurel, MD	8.546	4.246	12/02	2.429	01/04	1.514	01/05	2.965	19.700	19.700
Weapons Control Systems	WR	NSWC, Dahlgren VA	19.627	4.585	12/02	2.977	12/03	1.461	12/04	Continuing	Continuing	
Subtotal Support			121.030	27.726		18.438		9.637		Continuing	Continuing	

Remarks:

R-1 SHOPPING LIST - Item No. 169

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**			PROGRAM ELEMENT 0204229N Tomahawk Weapons System (TWS)			PROJECT NUMBER AND NAME 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	17.296	11/02	6.356	11/03	1.946	11/04	3.834	52.889	52.889
	WR	COMOPTEVFOR, VA	2.233	0.579	12/02	0.434	12/03	0.125	12/04	Continuing	Continuing	
	WR	NAWC, Pt Mugu Test Ctr, CA	12.360	7.270	11/02	4.000	11/03	2.841	11/04	Continuing	Continuing	
	WR	NOSC, San Diego CA	1.275	0.575	11/02						1.850	
	WR	NUWC, Newport RI	0.440	0.507	11/02	1.105	11/03	1.150	11/04	Continuing	Continuing	
	SS/CPFF	URAC APL, Laurel MD	0.692	0.590	12/02	0.320	12/03	0.126	12/04		1.728	1.728
	WR	NSWC, Dahlgren, VA	0.807	0.454	11/02	0.672	11/03		11/04	Continuing	Continuing	
	WR	NSWC, Port Hueneme				0.352	11/03				0.352	
		Various	3.541	0.026	11/02	0.040	11/03	0.050	11/04	Continuing	Continuing	
Subtotal T&E			44.805	27.297		13.279		6.238		Continuing	Continuing	
Remarks:												
Management												
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Total Cost			2,701.487	97.284		76.524		28.776		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 169

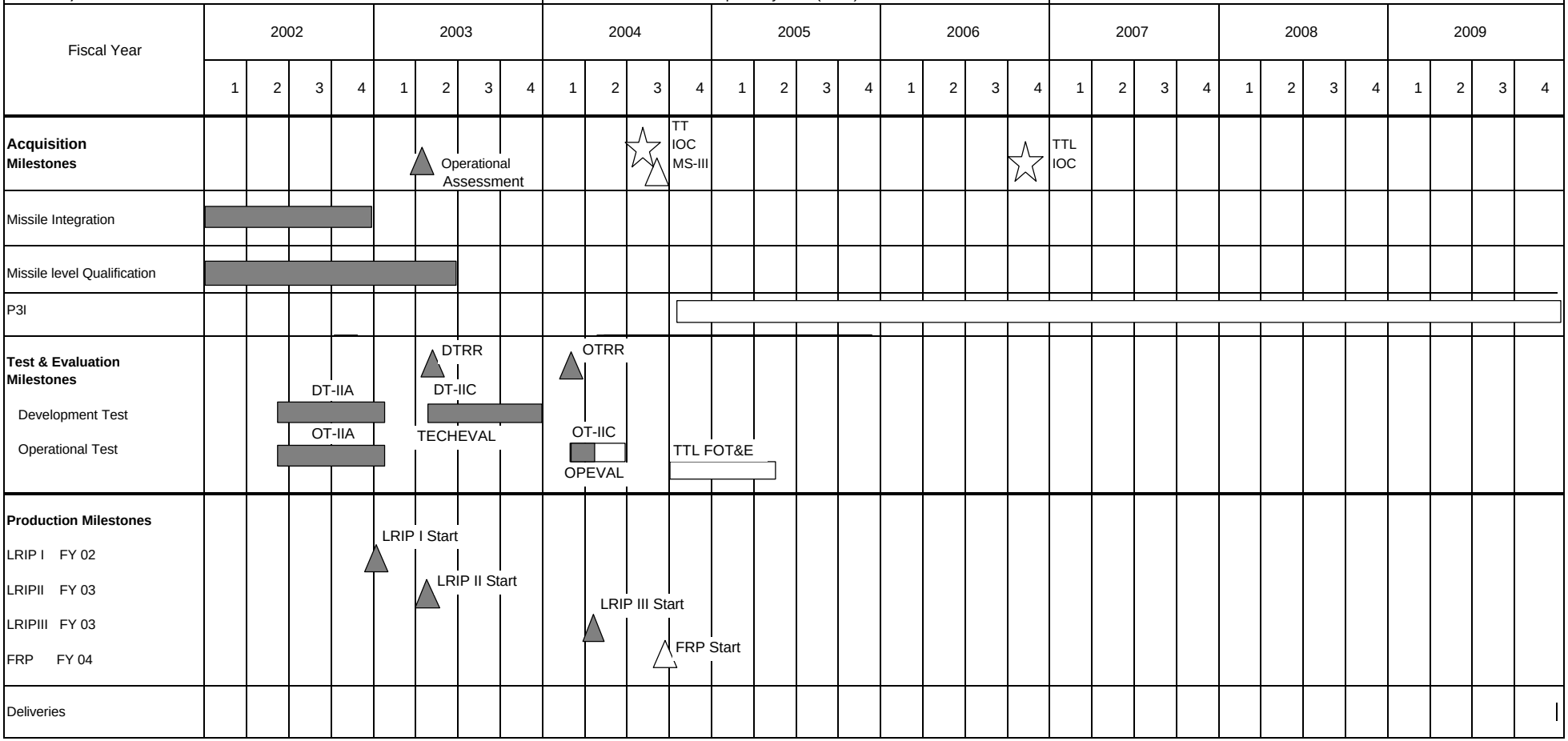
UNCLASSIFIED

EXHIBIT R4, Schedule Profile | DATE: February 2004

APPROPRIATION/BUDGET ACTIVITY: RDT&E, N / BA-7

PROGRAM ELEMENT NUMBER AND NAME: 0204229N Tomahawk Weapons System (TWS)

PROJECT NUMBER AND NAME: A0545 TOMAHAWK



R-1 SHOPPING LIST - Item No. 169

Exhibit R-4a, Schedule Detail					DATE: February 2004			
APPROPRIATION/BUDGET ACTIVITY **RDT&,N BA-7**	PROGRAM ELEMENT 0204229N Tomahawk Weapons System (TWS)				PROJECT NUMBER AND NAME A0545 TOMAHAWK			
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
All Up Round								
TT LRIP-One Contract Award		1Q						
System Qualification Complete		2Q						
Operational Assessment Complete		2Q						
Developmental Testing (DT-IIA)	2Q-4Q	1Q						
Devlopmental Testing (DT-IIC)		2Q-4Q						
TT LRIP-Two Contract Award		2Q						
Operational Testing (OT-IIC)			1Q-2Q					
TT LRIP-III Contract Award			2Q					
TT Initial Operational Capability			3Q					
TT Milestone III			3Q					
TT Full Rate Production Contract Award			3Q					
TT LRIP-One Delivery			3Q-4Q	1Q				
TT LRIP-Two Delivery				1Q-4Q				
TT TTL Initial Operational Capability					2Q			
TT Preplanned Product Improvement (P3I)			4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
TT = Tactical Tomahawk								
TTL = Torpedo Tube Launch								

R-1 SHOPPING LIST - Item No. 169

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification									DATE: February 2004		
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7**						R-1 ITEM NOMENCLATURE 0204311N-Integrated Surveillance Systems					
COST ($ in Millions)		Prior Years Cost	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Total PE Cost		**304.048**	**25.186**	**14.117**	**16.965**	**18.007**	**19.924**	**13.528**	**13.760**	**Continuing**	**Continuing**
Q0766-Integrated Surveillance Systems		**224.154**	**16.833**	**9.903**	**13.138**	**14.060**	**16.309**	**9.842**	**10.002**	**Continuing**	**Continuing**
Z0766 Fixed Surveillance Systems- Note 1		**73.208**	**2.897**	**4.214**	**3.827**	**3.947**	**3.615**	**3.686**	**3.758**	**Continuing**	**Continuing**
9102 IUSS Mission Planning		**6.686**	**2.927**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**9.613**
9270 Fiberoptic Wavelength Division Multiplier		**0.000**	**2.529**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**2.529**
Quantity of RDT&E Articles											**0.000**

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

This Program Element (P.E.) comprises four projects - Q0766, Z0766, 9102 and 9270. Project Q0766 provides for Integrated Undersea Surveillance Systems (IUSS) Research and Development Projects. 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. Project Z0766 (FSS) is a classified project, with details available as a separate enclosure. Project 9102 is a Congressional Plus-Up that supports development efforts for IUSS. Project 9270 is a Congressional Plus-Up that supports the development wideband optical networks for multiple platforms.

(U) JUSTIFICATION FOR BUDGET ACTIVITY:

The IUSS Research and Development project (Q0766) funds SURTASS Passive and SURTASS Low Frequency Active (LFA) developments. SURTASS provides the mobile, tactical arm of the Integrated Undersea Surveillance System, providing long range detection and cueing for tactical weapons platforms against both diesel and nuclear powered submarines. SURTASS LFA provides an active adjunct capability for IUSS passive and tactical sensors to assist in countering the quieter diesel and nuclear threats of the 1990s and beyond. The LFA tasks are directed at detection of slow quiet threats in harsh littoral waters.

(U) In order to continue with reductions in life cycle costs and continue with system-wide consolidation, a 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. Future efforts will upgrade the LFA capability to ARCI processing and smaller, lighter weight acoustic sources for augmentation of small SWATH platforms, and for replacement of aging LFA sources.

Note 1- Details available at a higher classification.

R-1 SHOPPING LIST - Item No. 170

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: **February 2004**			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT NUMBER AND NAME 0204311N-Integrated Surveillance Systems					PROJECT NUMBER AND NAME **Q0766: IUSS Detection and Classification System**					
COST ($ in Millions)	Prior Years Cost		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	**224.154**		**16.833**	**9.903**	**13.138**	**14.060**	**16.309**	**9.842**	**10.002**	**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 are based upon the Advanced Processor Build (APB) process begun by the NAVSEA Submarine USW program. APB-99 was used to support an ARCI Engineering Development Model (EDM) demonstration system, providing A-180R long-line processing only. APB-01 was used for the production ARCI systems for all long-line arrays. APB-02 provides 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, and upgrade of LFA processing capability into the ARCI architecture.

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, contact 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.

R-1 SHOPPING LIST - Item No. 170

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA 7	0204311N-Integrated Surveillance Systems	**Q0766: IUSS Detection and Classification System**

(U) B. Accomplishments/Planned Program

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

Beginning in FY03 FSS transferred from SPAWAR to NSMA under a new project code.

	FY 03	FY 04	FY 05
T-23 DT/OT	1.825	0.750	0.000
RDT&E Articles Quantity			

FY03: T-23 DT/OT ($1,825K) – Continued T-23 certification test planning and initial at-sea testing. Corrected software issues uncovered during testing.
FY04: T-23 DT/OT($750K) – Complete certification testing. Correct software issues uncovered during testing.

	FY 03	FY 04	FY 05
Common Acoustic Processor	3.275	2.000	0.000
RDT&E Articles Quantity			

FY03: Common Acoustic Processor ($3,275K) – Continued software development for Twin-Line processing in the ARCI architecture. Added APB improvements to single line ARCI capability. **FY04:** Common Acoustic Processor ($2,000K) – Complete software development for Twin-Line processing in the ARCI architecture. Begin software development for Active processing in the ARCI architecture. Add APB improvements to single line ARCI capability.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA 7	0204311N-Integrated Surveillance Systems	**Q0766: IUSS Detection and Classification System**

(U) B. Accomplishments/Planned Program

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

No Activity

	FY 03	FY 04	FY 05
Active Acoustics	2.531	0.659	0.000
RDT&E Articles Quantity			

FY03: Active Acoustics ($2,531K) – Continued implementation of a multi-year sea test program focused on CONOPS and the physics of shallow water. Continued development of improvements for LFA operations in shallow water. Continued sea test program to support system improvements and demonstrate/validate operational performance.
FY04: Active Acoustics ($659K) - 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 concepts. Transition Active Acoutics efforts to SURTASS Active Improvement Program.

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

FY03: LFA Environmental ($600K) – Continued environmental research on the impact of low frequency active sonar on the marine environment. This effort transferred to ONR in FY04.

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2004
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA 7	0204311N-Integrated Surveillance Systems	**Q0766: IUSS Detection and Classification System**

(U) B. Accomplishments/Planned Program

	FY 03	FY 04	FY 05
N74 ASW Study	1.074	1.023	1.175
RDT&E Articles Quantity			

FY03: N74 ASW Study ($1,074K) – 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 models.
FY04: N74 ASW Study ($1,023K) – 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 03	FY 04	FY 05
ASW C4I	0.200	0.125	0.000
RDT&E Articles Quantity			

FY03:ASWC4I ($200K) – Continued 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 ($125K) – 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.

	FY 03	FY 04	FY 05
System Engineering	0.255	0.125	0.000
RDT&E Articles Quantity			

FY03: IUSS System Engineering ($255K) – Continued to provide system level engineering across IUSS programs. Translate Fleet requests into system level design solutions.
FY04: IUSS System Engineering ($125K) – Continue to provide system level engineering across IUSS programs. Translate Fleet requests into system level design solutions for IUSS Common Processor.

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2004
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA 7	0204311N-Integrated Surveillance Systems	**Q0766: IUSS Detection and Classification System**

(U) B. Accomplishments/Planned Program

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

No Activity

	FY 03	FY 04	FY 05
SURTASS System Eng & Shore Support	1.595	1.000	0.000
RDT&E Articles Quantity			

FY03: ($1,595K) Continued development of SURTASS ARCI interfaces with IUSS legacy systems. Continue incorporation of future ARCI, Comms, and TDA improvements. Develop shore processing/display software in the ARCI architecture. Investigate data compression algorithms; link management implementations, and improved reach back capabilities. Continue implementation of Common OMI.
FY04: ($1,000K) Complete development of SURTASS ARCI interfaces with IUSS legacy systems. Complete implementation of Common OMI.

	FY 03	FY 04	FY 05
Passive Processing & Automation	3.078	1.095	0.000
RDT&E Articles Quantity			

FY03: ($3.078K) Continued 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: ($1,095K) – 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. Focus future efforts on SURTASS Active Improvement Program.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA 7	0204311N-Integrated Surveillance Systems	**Q0766: IUSS Detection and Classification System**

(U) B. Accomplishments/Planned Program

	FY 03	FY 04	FY 05
TB-29A/Twin-Line	2.400	1.740	1.500
RDT&E Articles Quantity			

FY03: ($2,400K) Continued 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: ($1,740K) 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.
FY05: ($1,500K) Complete processing improvements to support TB-29A operations and expand array interoperability. Continue development of across platform telemetry architecture.

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

No Activity

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

No Activity

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA 7	0204311N-Integrated Surveillance Systems	**Q0766: IUSS Detection and Classification System**

(U) B. Accomplishments/Planned Program

	FY 03	FY 04	FY 05
SURTASS Active Improvement Program	0.000	1.386	10.463
RDT&E Articles Quantity			

FY04: ($1,386K) Initiate design of Compact Low Frequency Active (CLFA) array suspension and handling system. Investigate compatible CLFA acoustic source variants.
FY05: ($10,463) Continue development of CLFA capability. Begin transmit subsystem development and Small Waterplane Area Twin Hull-Passive (SWATH-P) SOC modifications. Continue active ARCI developments and incorporate improvements into IUSS Common Processor.

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

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

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0204311N-Integrated Surveillance Systems	**Q0766: IUSS Detection and Classification System**

(U) C. PROGRAM CHANGE SUMMARY:

(U) Funding:	FY 2003	FY 2004	FY 2005
Previous President's Budget (FY04 Pres Controls)	17.012	10.017	13.189
Current BES/President's Budget (FY05 Pres Controls)	16.833	9.903	13.138
Total Adjustments	-0.179	-0.114	-0.051
Summary of Adjustments			
Congressional Undistributed Adjustments		-0.114	
Inflation Adustments			-0.043
Miscellaneous Navy Adjustments	-0.179		-0.008
Subtotal	-0.179	-0.114	-0.051

(U) Schedule:

The following projects were delayed due to FY03 funding reductions: 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

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0204311N-Integrated Surveillance Systems	**Q0766: IUSS Detection and Classification System**

(U) D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
OPN 2237 OMN Omitted per instructions	19.942	15.114	7.166	3.825	0.445	1.166	1.38	Continuing	Continuing

(U) E. ACQUISITION STRATEGY: *

	FY2003	FY2004	FY2005
Program Milestones			
Engineering Milestones	ARCI VARIANT 7/03	ARCI TB29/TL VARIANT 7/04	ARCI ACTIVE VARIANT 7/05
T&E Milestones		T-23 SEA TESTS TB29/TL SEA TESTS	T-23 SEA TESTS TB29/TL SEA TESTS
Contract Milestones		TB29/TL VARIANT 6/04	

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

R-1 SHOPPING LIST - Item No. 170

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**		PROGRAM ELEMENT 0204311N-Integrated Surveillance Systems			PROJECT NUMBER AND NAME **Q0766: 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
WeCAN	CPFF	ORINCON / VARIOUS	10.780	0.000		0.000		0.000		0.000	10.780	
FDS/ AODS	CPFF	TBD	8.000	0.000		0.000		0.000		0.000	8.000	
IUSS Common Architecture	CPFF	GDAIS/LM/ARL	34.712	4.286	11/02	2.689	11/03	0.000		0.000	41.687	
Environmental Research	WR	ONR / VARIOUS	7.900	0.600	11/02	0.000		0.000		0.000	8.500	
Active Improvements/T-23 DT-OT	CPFF	BAE /GDAIS/ VARIOUS	84.479	2.206	11/02	1.612	11/03	8.563	11/04	Continuing	Continuing	
C4I Integration	CPFF	VARIOUS	31.543	0.150	11/02	0.075	11/03	0.000		0.000	31.768	
N74 ASW Study	WX/PD	NUWC / APL	1.767	1.074	11/02	1.023	11/03	1.175	11/04	Continuing	Continuing	
Various	WX	VARIOUS	28.389	0.000		0.000		0.000		0.000	28.389	
Passive Signal Processing/ Sonar	CPFF	APL/GDAIS	0.000	1.707	11/02	0.495	11/03	0.000		0.000	2.202	
Array Improvements	CPFF/WR	APL/SSC/VAR	0.000	1.650	11/02	0.880	11/03	0.730	11/04	Continuing	Continuing	
											0.000	
											0.000	
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											0.000	
Subtotal Product Development			207.570	11.673		6.774		10.468		0.000	236.485	

Remarks:

R-1 SHOPPING LIST - Item No. 170

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**		PROGRAM ELEMENT 0204311N-Integrated Surveillance Systems			PROJECT NUMBER AND NAME **Q0766: 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	0.000		0.000	1.300	
LFA Improvements /Active Acoustic	CPFF	NGC/Various	4.005	0.500	11/02	0.400	11/03	0.750	11/04	Continuing	Continuing	
C4ISR Integration	CPPF	NGC/Various	1.719	0.050	11/02	0.050	11/03	0.000		0.000	1.819	
FDS/AODS	WX	Various	1.216	0.000	11/02	0.000	11/03	0.000		0.000	1.216	
Passive Signal Processing/ Sonar	Var/WX	Various	0.000	0.500	11/02	0.100	11/03	0.000		0.000	0.600	
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	
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											0.000	
Subtotal Support			7.930	1.510		1.020		1.070		0.000	11.530	

Remarks:

R-1 SHOPPING LIST - Item No. 170

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**		PROGRAM ELEMENT 0204311N-Integrated Surveillance Systems			PROJECT NUMBER AND NAME **Q0766: 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	0.286	11/03	0.000		0.000	1.837	
LFA Improvements	Var/ WX	VARIOUS	5.866	1.500	11/02	0.653	11/03	1.000	11/04	Continuing	Continuing	
Passive Signal Processing/ Sonar	Var/ WX	VARIOUS		0.950	11/02	0.350	11/03	0.000		0.000	1.300	
Array Improvements	Var/ WX	VARIOUS		0.250		0.340	11/03	0.250	11/04	Continuing	Continuing	
											0.000	
											0.000	
											0.000	
Subtotal T&E			6.917	3.200		1.629		1.250		0.000	12.996	
Remarks:												
LFA Improvements /C4ISR	Var/ WX	VARIOUS	1.737	0.150	11/02	0.130	11/03	0.150	11/04	Continuing	Continuing	
Passive Signal Processing/ Sonar	Var/ WX	VARIOUS		0.100	11/02	0.150	11/03	0.000		0.000	0.250	
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		0.480		0.350		0.000	3.017	
Remarks:												
Total Cost			224.154	16.833		9.903		13.138		0.000	264.028	
Remarks:												

R-1 SHOPPING LIST - Item No. 170

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																																DATE: **February 2004**
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					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 Inactive ACAT II Status Eff 15 Jul 2002																																
Test & Evaluation Milestones T-23 DT																																
TB-29A/Twinline																																
LFA / ARCI FOT& E																																
Production Milestones Complete																																

R-1 SHOPPING LIST - Item No. 172

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

FOT & E: Follow-on Test and Evaluation

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **February 2004**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT 0204311N-Integrated Surveillance Systems				PROJECT NUMBER AND NAME **X0766: IUSS Detection and Classification System**			
Schedule Profile		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
T-23 Developmental Testing Shakedown			2Q					
T-23 Developmental Evaluation			3Q					
T-23 System Training			3Q					
T-23 System Ops			4Q					
TB29A TL Developmental Test Shakedown			4Q					
TB29A TL Developmental Evaluation				1Q				
TB29A TL System Ops				1Q				
FOT & E (TB29A / ARCI/ Active)						2Q		

R-1 SHOPPING LIST - Item No. 172

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification									DATE: **February 2004**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 7**	PROGRAM ELEMENT NUMBER AND NAME 0204311N-Integrated Surveillance Systems					PROJECT NUMBER AND NAME **9102: IUSS Mission Planning**					
COST ($ in Millions)	Prior Years Cost		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	**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. PEO LMW 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. 170

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA 7	0204311N-Integrated Surveillance Systems	**9102: IUSS Mission Planning**

(U) B. Accomplishments/Planned Program

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

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

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

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

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0204311N-Integrated Surveillance Systems	**9102: IUSS Mission Planning**

(U) C. PROGRAM CHANGE SUMMARY:

(U) Funding:	FY 2003	FY 2004	FY 2005
Previous President's Budget (FY04 Pres Controls)	2.927	0.000	0.000
Current BES/President's Budget (FY05 Pres Controls)	2.927	0.000	0.000
Total Adjustments	0.000	0.000	0.000
Summary of Adjustments			
Congressional Undistributed Adjustments			
Inflation Adustments			
Miscellaneous Navy Adjustments			
Subtotal	0.000	0.000	0.000

(U) Schedule:

Not applicable

(U) Technical:

Not applicable

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0204311N-Integrated Surveillance Systems	**9102: IUSS Mission Planning**

(U) D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
NONE										
Related RDTEN:										
(U) PE 0204311N/0766	Integrated Surveillance System	16.833	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
(U) PE 0604784N	Advanced Deployable System	37.591	32.907	7.776	65.131	67.637	40.748	9.874	Continuing	Continuing

(U) E. ACQUISITION STRATEGY: *

Program Milestones
Engineering
Milestones
T&E
Milestones
Contract
Milestones

(U) F. MAJOR PERFORMERS: **

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

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification									DATE: February 2004		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 7**	PROGRAM ELEMENT NUMBER AND NAME 0204311N-Integrated Surveillance Systems					PROJECT NUMBER AND NAME **9270: Fiberoptic Wavelength Division Multiplier**					
COST ($ in Millions)	Prior Years Cost		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	**0.000**		**2.529**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**2.529**
RDT&E Articles Qty											**0**

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

A. (U) Copper wiring and interconnects pose reliability issues. Copper interconnects are limited in bandwidth and are susceptible to EMI and EMP and compromise digital systems. These funds are directed to support the technical development of implementing broadband (WDM) networks, optical computer interconnects and optically based control systems for new and legacy surveillance platforms.

R-1 SHOPPING LIST - Item No. 170

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA 7	0204311N-Integrated Surveillance Systems	**9270: Fiberoptic Wavelength Division Multiplier**

(U) B. Accomplishments/Planned Program

	FY 03	FY 04	FY 05
WDM Network Technology Development	2.529	0.000	0.000
RDT&E Articles Quantity			

FY03 ($2.529) WDM Network Technology Program developed and optimized the latest bandwith photonics technology in new and retrofit military platforms to maintain warfighting position which is highly dependent on information superiority. Funds provided for development and testing of fiber optics technology specific to Advanced Deployable System (ADS) sensor subsystem.

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

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

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0204311N-Integrated Surveillance Systems	**9270: Fiberoptic Wavelength Division Multiplier**

(U) C. PROGRAM CHANGE SUMMARY:

(U) Funding:	FY 2003	FY 2004	FY 2005
Previous President's Budget (FY04 Pres Controls)	0.000	0.000	0.000
Current BES/President's Budget (FY05 Pres Controls)	2.529	0.000	0.000
Total Adjustments	2.529	0.000	0.000
Summary of Adjustments			
Congressional Add	2.600		
Congressional Undistributed Adjustments	-0.038		
Inflation Adustments	-0.033		
Miscellaneous Navy Adjustments			
Subtotal	2.529	0.000	0.000

(U) Schedule:

Not applicable

(U) Technical:

Not applicable

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT NUMBER AND NAME 0204311N-Integrated Surveillance Systems	PROJECT NUMBER AND NAME **9270: Fiberoptic Wavelength Division Multiplier**

(U) D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
NONE										
Related RDTEN:										
(U) PE 0604784N	Advanced Deployable System	37.591	32.907	7.776	65.131	67.637	40.748	9.874	Continuing	Continuing

(U) E. ACQUISITION STRATEGY: *

Program Milestones
Engineering
Milestones
T&E
Milestones
Contract
Milestones

(U) F. MAJOR PERFORMERS: **

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

R-1 SHOPPING LIST - Item No. 170

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: **FEBRUARY 2004**	
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7**					R-1 ITEM NOMENCLATURE PE 0204413N/Amphibious Tactical Support Units			
COST ($ in Millions)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	
Total PE Cost	**6.106**	**5.589**	**2.604**	**4.673**	**4.218**	**2.269**	**2.773**	
1980 AMPHIB OTHER C2	**4.225**	**4.416**	**0.161**	**2.718**	**2.263**	**0.312**	**0.323**	
2231 MCAC WEAPONS DEVELOPMENT	**1.881**	**1.173**	**0.000**	**1.955**	**1.955**	**1.957**	**2.450**	
2909 AMPHIBIOUS LIGHTERAGE DEVELOPMENT	**0.000**	**0.000**	**2.443**	**0.000**	**0.000**	**0.000**	**0.000**	

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

B. PROJECT UNIT EFFORTS are as follows:

AMPHIB OTHER C2 (1980) - 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 **FY06-FY09** 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.

MCAC WEAPONS DEVELOPMENT (2231) - FY02-FY04 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. **FY06-FY09 MCAC WEAPONS DEVELOPMENT**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.

CLASSIFICATION:

UNCLASSFIED

EXHIBIT R-2a, RDT&E Project Justification					DATE: **FEBRUARY 2004**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E,N/BA-7**	PROGRAM ELEMENT NUMBER AND NAME **0204413N/Amphibious Tactical Support Units**				PROJECT NUMBER AND NAME **1980 AMPHIB OTHER C2**		
COST ($ in Millions)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	**4.225**	**4.416**	**0.161**	**2.718**	**2.263**	**0.312**	**0.323**
RDT&E Articles Qty							

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

AMPHIB OTHER C2 includes (1) FY03-FY09 **Supporting Arms Coordination Center (SACC)** program which 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. (2) FY06-FY09 **Amphibious Assault Direction System (AADS, AN/KSQ-1)** program researches Network Centric Warfare requirements for Amphibious Assault Command and Control, identifies the projected technological advances and requirements of Fleet systems, and identifies the Next Generation AADS operational requirements and capabilities. Technology integration with Expeditionary Strike Force ships is also included.

EXHIBIT R-2a, RDT&E Project Justification		DATE: **FEBRUARY 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E,N/BA-7	**PE 0204413N/Amphibious Tactical Support Units**	**1980 AMPHIB OTHER C2**

B. ACCOMPLISHMENTS/PLANNED PROGRAM

	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	4.225	4.416	0.161
RDT&E Articles Quantity	N/A	N/A	N/A

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, ILSP); 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 Logistic s 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.

AADS:

Efforts start in FY 06.

C. Program Change Summary:

(U) Funding	FY 2003	FY 2004	FY 2005
(U) FY 2004 President's Controls	4.271	4.466	0.161
(U) FY 2005 President's Controls	4.225	4.416	0.161
(U) Total Adjustments	-0.046	-0.05	0
- (U) Summary of Adjustments:			
FY03 SBIR	-0.035		
Misc Minor Adjustments	-0.011	-0.05	0
	-0.046	-0.05	0

(U) Schedule: Not Applicable

(U) Technical: Not Applicable

EXHIBIT R-2a, RDT&E Project Justification		DATE: FEBRUARY 2004
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	**0204413N/Amphibious Tactical Support Units**	**1980 AMPHIB OTHER C2**

D. Other Progrm Funding Summary:

	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
SACC									
OPN Line 098100 Items Under $5M	606	857	860	860	844	862	875	Con't	Con't
OM&N Line PE 0708012N, 1B5B, PEO, EXW	311	1724	1745	1370	1365	1392	1429	Con't	Con't
AADS:									
OPN Line 067000/067005 Other Nav Equip	0	0	0	6960	8555	5846	4134	Con't	Con't
OM&N Line, PE 0204411N 1B5B, PEO, EXW	1575	1492	1488	1605	1730	3638	3738	Con't	Con't

The procurement items are 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.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: FEBRUARY 2004
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E,N/ BA-7	**0204413N/Amphibious Tactical Support Units**	**1980 AMPHIB OTHER C2**

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.

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **FEBRUARY 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**		PROGRAM ELEMENT PE 0204413N/Amphibious Tactical Support Units			PROJECT NUMBER AND NAME 1980 AMPHIB OTHER C2							
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	WX	NSWC DD				0.500	12/03				0.500	
Aircraft Integration											0.000	
Ship Integration											0.000	
Ship Suitability											0.000	
Systems Engineering	WX	NSWC DD , NSWC CSS	2.768	1.201	12/02	0.950	12/03				4.919	
Training Development	WX	NSWC DD				0.897	12/03				0.897	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			4.321	2.601		2.347		0.000		0.000	9.269	
Remarks:												
Development Support											0.000	
Software Development	CPAF	TBD				0.897	12/03				0.897	
Integrated Logistics Support	WX	NSWC DD		0.200	12/02	0.389	12/03				0.589	
Configuration Management											0.000	
Technical Data	WX	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:												

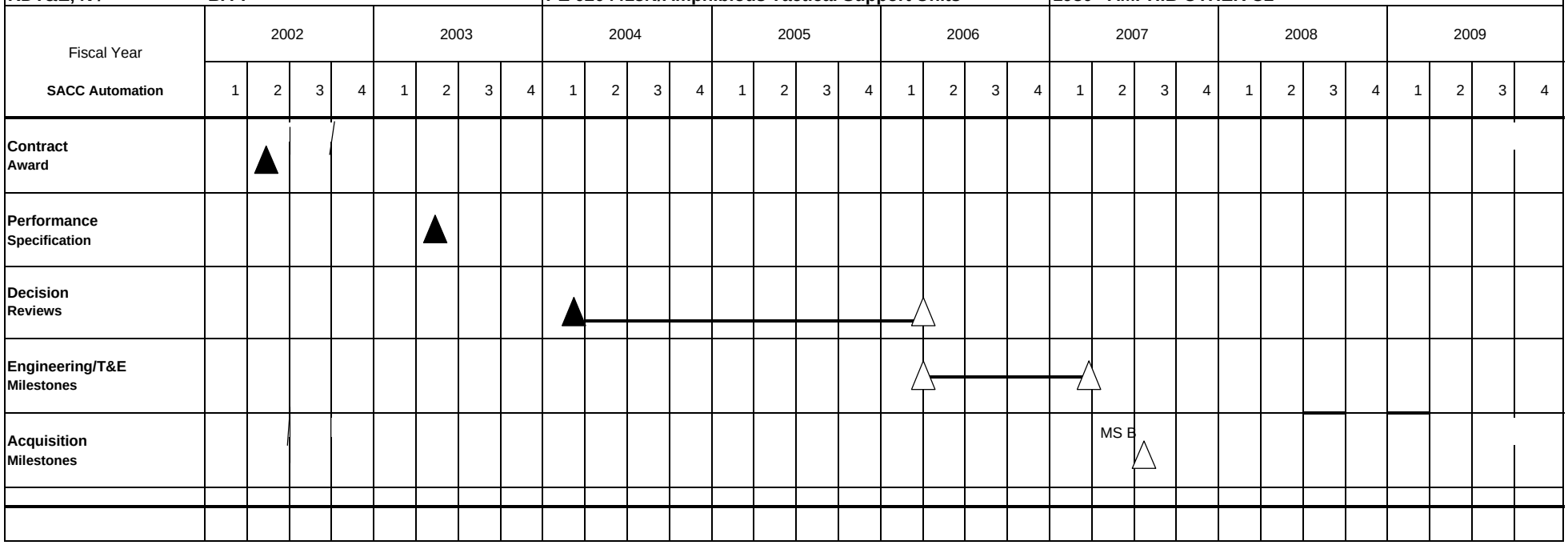
CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **FEBRUARY 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**		PROGRAM ELEMENT PE 0204413N/Amphibious Tactical Support Units				PROJECT NUMBER AND NAME 1980 AMPHIB OTHER C2						
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 (DD & CSS)	0.000	1.149	12/02	0.708	12/03	0.161	12/04		#VALUE!	
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	1.149		0.708		0.161		0.000	2.018	
Remarks:												
Contractor Engineering Support											0.000	
Government Engineering Support											0.000	
Program Management Support											0.000	
Travel	WX	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: Cost to Complete - 1.128 reflects remaining budget for **Supporting Arms Coordination Center (SACC)** RDT&E efforts FY06 thru FY09. **Amphibious Assault Direction System (AADS, AN/KSQ-1)** commences FY06.												
Total Cost			4.321	4.225		4.416		0.161		0.000	13.123	
Remarks:												

CLASSIFICATION:

EXHIBIT R4, Schedule Profile | DATE: **FEBRUARY 2004**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	**PE 0204413N/Amphibious Tactical Support Units**	**1980 AMPHIB OTHER C2**



CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: FEBRUARY 2004		
APPROPRIATION/BUDGET ACTIVITY **RDT&E,N/BA-7**	PROGRAM ELEMENT **PE 0204413N/Amphibious Tactical Support Units**				PROJECT NUMBER AND NAME **1980 AMPHIB OTHER C2**			
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
SACC Milestone B						3Q		

CLASSIFICATION: **UNCLASSFIED**

EXHIBIT R-2a, RDT&E Project Justification					DATE: **FEBRUARY 2004**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E,N/BA-7**	PROGRAM ELEMENT NUMBER AND NAME **0204413N/Amphibious Tactical Support Units**				PROJECT NUMBER AND NAME **2231 MCAC WEAPONS DEVELOPMENT**		
COST ($ in Millions)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	**1.881**	**1.173**	**0.000**	**1.955**	**1.955**	**1.957**	**2.450**
RDT&E Articles Qty							

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: MCAC WEAPONS DEVELOPMENT (2231) -

FY03-FY04 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.

FY06-FY09 MCAC WEAPONS DEVELOPMENT 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.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: FEBRUARY 2004
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N/BA-7	**PE 0204413N/Amphibious Tactical Support Units**	**2231/MCAC WEAPONS DEVELOPMENT**

B. ACCOMPLISHMENTS/PLANNED PROGRAM

	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	1.881	1.173	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 2003	FY 2004	FY 2005
(U) FY 2004 President's Controls	1.914	1.186	0
(U) FY 2005 President's Controls	1.881	1.173	0
(U) Total Adjustments	-0.033	-0.013	0
- (U) Summary of Adjustments:			
FY03 SBIR	-0.028		
Misc Minor Adjustments	-0.005	0	0
	-0.033	0	0

(U) Schedule: Not Applicable

(U) Technical: Not Applicable

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: **FEBRUARY 2004**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT NUMBER AND NAME **0204413N/Amphibious Tactical Support Units**	PROJECT NUMBER AND NAME **2231/MCAC WEAPONS DEVELOPMENT**	

D. 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 Complete	Total Cost
SCN Line 510000 LCU(R)	0	0	0	25.048	21.965	46.519	47.408	64.493	115.451	320.884

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.

Contractors & Locations - Work Performed:
CNA, Arlington, VA - AoA

Universities & Locations - Work Performed
Not applicable.

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **FEBRUARY 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**			PROGRAM ELEMENT PE 0204413N/Amphibious Tactical Support Units			PROJECT NUMBER AND NAME 2231/MCAC WEAPONS 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
Primary Hardware Development											0.000	
Ancillary Hardware Development											0.000	
Aircraft Integration											0.000	
Ship Integration											0.000	
Ship Suitability											0.000	
Systems Engineering	FFP	VARIOUS	1.799	1.042							2.841	
Training Development											0.000	
Licenses											0.000	
Tooling											0.000	
GFE	WX	NAVICP				0.110	06/04				0.110	
Award Fees											0.000	
Subtotal Product Development			1.799	1.042		0.110		0.000		0.000	2.951	

Remarks:
LCU Replacement - No Cost to Complete - RDT&E efforts complete FY05 as program transitions to construction in FY05 under SCN.
MCAC WEAPONS DEVELOPMENT commences FY06.

Development Support	WX	NSWC Bethesda, MD	2.036	0.031		0.400	03/04				2.467	
Software Development											0.000	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
Studies & Analyses	WX	ONR	0.254								0.254	
GFE											0.000	
Award Fees											0.000	
Subtotal Support			2.290	0.031		0.400		0.000		0.000	2.721	

Remarks:
LCU Replacement - No Cost to Complete - RDT&E efforts complete FY05 as program transitions to construction in FY05 under SCN.
MCAC WEAPONS DEVELOPMENT commences FY06.

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **FEBRUARY 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**			PROGRAM ELEMENT PE 0204413N/Amphibious Tactical Support Units			PROJECT NUMBER AND NAME **2231/MCAC WEAPONS 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	COMOPTEVFOR		0.250	04/03	0.040	03/04				0.290	
Operational Test & Evaluation	WX	SPAWAR	0.029					0.000		0.000	0.029	
Live Fire Test & Evaluation											0.000	
Test Assets											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal T&E			0.029	0.250		0.040		0.000		0.000	0.319	
Remarks: LCU Replacement - No Cost to Complete - RDT&E efforts complete FY05 as program transitions to construction in FY05 under SCN. MCAC WEAPONS DEVELOPMENT commences FY06.												
Contractor Engineering Support	FFP	VARIOUS	0.661	0.334		0.200	12/03				1.195	
Government Engineering Support	WX	VARIOUS	0.514	0.085	11/02	0.233	04/04				0.832	
Program management Support	CPFF	Various	0.182	0.100	09/03	0.175	12/03				0.457	
Travel	PD	NAVSEA TRAVEL	0.013	0.039	10/02	0.015	04/04				0.067	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			1.370	0.558		0.623		0.000		0.000	2.551	
Remarks: LCU Replacement - No Cost to Complete - RDT&E efforts complete FY05 as program transitions to construction in FY05 under SCN. MCAC WEAPONS DEVELOPMENT commences FY06.												
Total Cost			5.488	1.881		1.173		0		0	8.542	
Remarks:												

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																																DATE: **FEBRUARY 2004**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**									PROGRAM ELEMENT NUMBER AND NAME **PE 0204413N/Amphibious Tactical Support Units**												PROJECT NUMBER AND NAME **2231/MCAC WEAPONS DEVELOPMENT**															
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. 171/15

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

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **FEBRUARY 2004**		
APPROPRIATION/BUDGET ACTIVITY **RDT&BA-7**	PROGRAM ELEMENT **PE 0204413N/Amphibious Tactical Support Units**				PROJECT NUMBER AND NAME **2231/MCAC WEAPONS DEVELOPMENT**			
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
AoA Completion	3Q							
Milestone B			2Q					
Contract Award				1Q				

CLASSIFICATION: **UNCLASSIFIED**

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2004**			
APPROPRIATION/BUDGET ACTIVITY **RDT&E,N/BA7**	PROGRAM ELEMENT NAME AND NUMBER **Amphibious Tactical Spt Unit/0204413N**				PROJECT NAME AND NUMBER Amphibious Lighterage Development/2909					
COST ($ in Millions)		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Cost
Project Cost		**0.000**	**0.000**	**2.443**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**2.443**
RDT&E Articles Qty		**N/A**	**N/A**	**N/A**						

A. Mission Description and Budget Item Justification:
Improved Navy Lighterage System (INLS): INLS replaces the existing Navy Lighterage (NL) system and supports the US Navy Lighterage recapitalization plan. Current NL will reach the end of its service life and will impact crew safety and operation readiness. INLS will be capable of operations in higher sea states, have a greater service life, and have a reduced maintenance costs. INLS will be deployed during Logistic Over The Shore (LOTS) operations, Assault Follow On Echelon (AFOE) operations and Maritime Prepositioning Force (MPF) operations. INLS consists of: Warping Tugs, Causeway Ferries, RO/RO Discharge Facilities and Floating Causeway. All the design and development for INLS was completed in FY03. Contract for Low Rate Initial Production (LRIP) was awarded in August 2003.

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FY2003: Plan: Not Applicable
FY2004: Plan: Not Applicable
FY2005: Plan: $2.443M for INLS OPEVAL

B. ACCOMPLISHMENTS/PLANNED PROGRAM:

	FY2003	FY2004	FY2005
INLS OPEVAL	0.000	0.000	2.443
RDT&E Articles Qty	N/A	N/A	N/A

INLS Design and development was accomplished in FY2003. Operation and evaluation will begin in FY2005.

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NAME AND NUMBER	PROJECT NAME AND NUMBER
RDT&E,N/BA7	**Amphibious Tactical Spt Unit/0204413N**	Amphibious Lighterage Development/2909

C. Program Change Summary:

	FY2003	FY2004	FY2005
FY2004 President's Budget	0.000	0.000	0.000
FY2005 President's Budget	0.000	0.000	2.443
Total Adjustments	0.000	0.000	2.443

Summary of Adjustments:
Programmatic Adjustment: OPEVAL Realignment 2.443

D. Other Program Funding Summary (INLS Development)

	FY2003	FY2004	FY2005	FY2006	FY2007	FY2008	FY2009	To Complete
CESE Line 6033 Amphib Equip (OPN)(Reqmt)	46.1	3.1	3.6	202.1	77.2	97.3	5.9	0.00
(U) Related RDT&E: n/a								

E. Acquisition Strategy (JMLS/INLS): LRIP contract was awarded in August 2003 with OPN funds. OPEVAL of LRIP items in FY05.

F. Major Performer:

Activities & Location -- Work Performed
OPTEVFOR, Norfolk Va -- OPEVAL of LRIP Quantities

Exhibit R-3 Cost Analysis (page 1)												DATE: **February 2004**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E,N/BA7**		PROGRAM ELEMENT **Amphibious Tactical Spt Unit/0204413N**				PROJECT NAME AND NUMBER Amphibious Lighterage Development/2909								
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost			FY 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	0.000	
Ancillary Hardware Development												0.000	0.000	
Systems Engineering												0.000	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	0.000	
Remarks:														
Development Support Equipment													0.000	
Software Development													0.000	
Training Development													0.000	
Integrated Logistics Support												0.000	0.000	
Configuration Management													0.000	
Technical Data													0.000	
GFE													0.000	
Subtotal Support			0.000	0.000		0.000		0.000		0.000		0.000	0.000	
Remarks:														

Exhibit R-3 Cost Analysis (page 2)									DATE: **February 2004**					
APPROPRIATION/BUDGET ACTIVITY **RDT&E,N**		PROGRAM ELEMENT **Amphibious Tactical Spt Unit/0204413N**			PROJECT NAME AND NUMBER Amphibious Lighterage Development/2909									
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost			FY 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	0.000	
Operational Test & Evaluation	WR	OPTEVFOR								2.443	03/05	0.000	2.443	
Tooling													0.000	
GFE													0.000	
Subtotal T&E			0.000	0.000		0.000		0.000		2.443		0.000	2.443	
Remarks:														
Contractor Engineering Support													0.000	
Government Engineering Support													0.000	
Program Management Support													0.000	
Travel													0.000	
Labor (Research Personnel)													0.000	
Overhead													0.000	
Subtotal Management			0.000	0.000		0.000		0.000		0.000		0.000	0.000	
Remarks:														
Total Cost			0.000	0.000		0.000		0.000		2.443		0.000	2.443	
Remarks:														

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: February 2004	
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7**					R-1 ITEM NOMENCLATURE 0204571N Consolidated Training Systems Development			
COST ($ in Millions)		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost		**25.974**	**22.460**	**21.644**	**25.920**	**18.605**	**21.643**	**14.108**
1427 Surface Tactical Team Trainer (STTT)		**8.223**	**14.507**	**8.266**	**5.825**	**5.606**	**5.799**	**6.039**
2449 Distributed Shipboard Trainer			**0.988**					
3087 NSS Training System			**0.290**	**0.391**	**0.293**			
W0604/ Training Range and Instrumentation Development Systems (TRIDS)		**3.126**	**2.216**	**2.050**	**2.128**	**2.616**	**2.665**	**2.716**
W3093 Tactical Combat Training System (TCTS)			**2.819**	**9.461**	**16.165**	**8.563**	**11.324**	**3.461**
W2124 Air Warfare Training Development (AWTD)		**1.987**	**1.640**	**1.476**	**1.509**	**1.820**	**1.855**	**1.892**
X1823 Training & Modeling Systems (TMS)		**10.355**						
E9271 Integrated Training for TACAIR Fleet*		**2.283**						

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

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) . The migration of selected modules of the BFTT software to Windows NT from UNIX OS is underway. The Congressional adds initiate the development of the Distributed Shipboard Classroom which provides a capability for shipboard instructors to utilize current online multimedia training technology to improve the quality, quantity and effectiveness of mission critical, military, safety and administrative training mandated by OPNAV, TYCOM and Fleet directives. The Navigation Seamanship and Shiphandling (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.

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification	DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7**	R-1 ITEM NOMENCLATURE 0204571N Consolidated Training Systems Development

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

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.

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 development (incremental) towards a system capable of supporting a broad spectrum of naval platforms through weapons simulations, participant weapons system stimulation, open architecture and a high capacity/long range secure datalink.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2004**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT NUMBER AND NAME 0204571N Consolidated Training Systems Development			PROJECT NUMBER AND NAME 1427 Surface Tactical Team Trainer (STTT) (1427/2449/3087)				
COST ($ in Millions)		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost		**8.223**	**15.785***	**8.657**	**6.118**	**5.606**	**5.799**	**6.039**
RDT&E Articles Qty		**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**

***Includes Congressional Plus up funding for: 2449 DSC;**
****Includes Re-Engineering Funds Alignment 3087.**

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The Battle Force Tactical Training (BFTT) Program provides realistic joint warfare training across the spectrum of armed conflict; realistic unit level team training in all warfare areas; a means to link ships together which are in different homeports for coordinated training; external stimulation of shipboard training systems; and simulation of non-shipboard forces. BFTT uses a distributed architecture, integrating existing training systems, and uses Distributed Interactive Simulation (DIS) protocols. BFTT provides ships' Commanding Officers and Battle Group/Battle Force Commanders with the ability to conduct coordinated realistic, high stress, combat system level team training as an integral part of the Afloat Training 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. BFTT software modules are being migrated from UNIX/TAC to a Windows-NT/PC Operating System (OS). The Distributed Shipboard Classroom provides a capability for shipboard instructors to utilize current online multimedia training technology to improve the quality, quantity and effectiveness of mission critical, military, safety and administrative training mandated by OPNAV, TYCOM and Fleet directives. rt initiates development of the active electronic countermeasures training capability to BEWT and to the BFTT software. 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.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0204571N Consolidated Training Systems Development	1427 Surface Tactical Team Trainer (STTT) (1427/2449/3087)

B. Accomplishments/Planned Program

	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	8.171	9.196	5.714
RDT&E Articles Quantity	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; NTMF 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 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.052	1.680	1.562
RDT&E Articles Quantity	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 cupport 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. 172

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0204571N Consolidated Training Systems Development	1427 Surface Tactical Team Trainer (STTT) (1427/2449/3087)

B. Accomplishments/Planned Program (Cont.)

	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.988	0.000
RDT&E Articles Quantity	N/A	N/A	N/A

Congress appropriated and authorized funding for development of the Distributed Shipboard Classroom in conjunction with the Battle Force Tactical Training Improvement Program. The Distributed Shipboard Classroom provides a capability for shipboard instructors to utilize current online multimedia training technology to improve the quality, quantity and effectiveness of mission critical, military, safety and administrative training mandated by OPNAV, TYCOM and Fleet directives. The pilot project will provide on opportunity to assess the acceptance of Sailors and shipboard instructors to utilizing multimedia communications technology to accomplish individual and group training in the 24X7 work day at sea.

	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.991	0.990
RDT&E Articles Quantity	N/A	N/A	NA

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

R-1 SHOPPING LIST - Item No. 172

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0204571N Consolidated Training Systems Development	1427 Surface Tactical Team Trainer (STTT) (1427/2449/3087)

B. Accomplishments/Planned Program (Cont.)

	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	2.640	0.000
RDT&E Articles Quantity	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 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.290	0.391
RDT&E Articles Quantity	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.

R-1 SHOPPING LIST - Item No. 172

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0204571N Consolidated Training Systems Development	1427 Surface Tactical Team Trainer (STTT) (1427/2449/3087)

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2003	FY 2004	FY 2005
Previous President's Budget: (FY 04 Pres Controls)	8.414	14.969	8.766
Current BES/President's Budget:	8.223	15.785	8.657
Total Adjustments	-0.191	0.816	-0.109
Summary of Adjustments			
FY03 SBIR	-0.170		
BSO Adjustments	-0.021		
Management Improvements		-0.043	
FFRDC Reduction		-0.005	
NWCF Rates - NSWC Rates			-0.117
NWCF Rates - NUWC Rates			-0.004
WCF - NSWC			0.017
Rates - NSWC			0.027
Inflation			-0.028
Technical Adjustments			-0.004
Distributed Shipboard Classroom		1.000	
Sec 8126: Efficiencies/Revis		-0.136	
Subtotal	-0.191	0.816	-0.109

Schedule:

Not Applicable.

Technical:

Not Applicable.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0204571N Consolidated Training Systems Development	1427 Surface Tactical Team Trainer (STTT) (1427/2449/3087)

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
OPN 276200 (Surface BFTT portion only)	15.77	39.244	35.789	13.13	2.244	0	0	0	106.177

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:

NSWC Crane, Crane, IN - BFTT System Engineering, Integration, and Testing -Award Dates 01/03
CDSA Dam Neck, Dam Neck, VA - BFTT Software Development Activity Award Dates 01/04
Department of Interior, Minerals Management, Govworks - Contracting Office Award Dates 01/05

R-1 SHOPPING LIST - Item No. 172

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**			PROGRAM ELEMENT 0204571N Consolidated Training Systems Development			PROJECT NUMBER AND NAME 1427 Surface Tactical Team Trainer (STTT) (22449/29106/29107/S3087)						
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	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	CDSA/NSWC 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	*	NAWC TSD/CDSA/Govworks	37.011	4.687	01/03	8.142	01/04	5.488	01/05	Continuing	Continuing	N/A
Training Development											0.000	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data	*	NAWC TSD/NSWC 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			45.818	5.537		9.557		6.434		0.000	67.347	

Remarks:

*WR/RCP/MIPR/IPR

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**		PROGRAM ELEMENT 0204571N Consolidated Training Systems Development				PROJECT NUMBER AND NAME 1427 Surface Tactical Team Trainer (STTT) (22449/29106/29107/S3087)						
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	*	NSWC Crane/NAWC TSD/ 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	*	CDSA/NSWC 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			89.269	8.223		15.785		8.657		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 172

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2004**	
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 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost		**3.126**	**2.216**	**2.050**	**2.128**	**2.616**	**2.665**	**2.716**
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, 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.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
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) B. Accomplishments/Planned Program

Large Area Tracking Range (LATR)		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		1.442	1.059	0.598
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 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		1.684	1.157	1.452
RDT&E Articles Quantity				

Developed additional training capabilities for the Control and Computational Subsystem (CCS), Personal Computer Based Joint Display Subsystem (JDS), and developed a formalized interface between the CCS and Large Area Tracking Range (LATR). Complete Semi-annual CCS Block upgrades. Complete Test Set Upgrade and system rehost. Complete formalization of CCS/LATR integration.

R-1 SHOPPING LIST - Item No. 172

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
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 2003	FY 2004	FY 2005
Previous President's Budget:	3.065	2.241	2.057
Current President's Budget	3.126	2.216	2.050
Total Adjustments	0.061	-0.025	-0.007
Summary of Adjustments			
SBIR/STTR	-0.038	-0.025	
Reprogrammings	0.099		
Economic Assumptions			
Reprioritization			-0.007
Subtotal	0.061	-0.025	-0.007

(U) Schedule: The following milestones have changed and deleted to better reflect program status:

CHANGED:	From:	To:
	PCADDS (JDS) IOC 4Q/02	PCBJDS IOC 2Q/04
	Block Upgrade 6.0 IOC 1Q/04	Semi-Annual Block Upgrades IOC 3Q/06
	LATR/TACTS Interface 1Q/04	LATR/TACTS Interface 3Q/04

DELETED:

Common Advanced Display
Market Survey 3Q/04
Spec Development 2Q/05
Contract 3Q/05
IOC 1Q/07

(U) Technical:
N/A

R-1 SHOPPING LIST - Item No. 172

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
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:

Line Item No. & Name	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
Related OPN:	0.047	0	0	0	0	0	0	Cont.	
Related RDT&E: Not Applicable									

(U) E. ACQUISITION STRATEGY:

The Training Range and Instrumentation Development (TRID) program is a non-ACAT program. The integrated program teams that develop new TRID capabilities include contractors whose products and services are obtained by means of competitive awards, Indefinite Deliveries/Indefinite Quantity (IDIQ), and cost-type contracts. Individual delivery orders are awarded for specific development efforts.

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)

DATE: **February 2004**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-7**

PROGRAM ELEMENT: 0204571N Consolidated Trai

PROJECT NUMBER AND NAME: 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	Various	Various	81.066							0.000	81.066	
Development (Misc. < $1M)												
Primary Hdw Dev. Electronics	Various	Various	0.450	0.598	1Q/03	0.256	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	0.177	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			81.804	0.783		0.412		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	0.637	1Q/03	0.429	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	1.489		0.925		1.164		Continuing	Continuing	

Remarks:

R-1 SHOPPING LIST - Item No. 172

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)						DATE: **February 2004**						
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**			PROGRAM ELEMENT 0204571N Consolidated Trai			PROJECT NUMBER AND NAME 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	Various	Various	3.918	0.187	1Q/03	0.192	1Q/04	0.160	1Q/05	Continuing	Continuing	
(Misc. <$1M)												
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	0.172	1Q/03	0.124	1Q/04	0.093	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				0.038								
Subtotal Management			2.183	0.423		0.317		0.269		Continuing	Continuing	
Remarks:												
Total Cost			96.102	3.126		2.216		2.050		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 172

CLASSIFICATION:

EXHIBIT R4, Schedule Profile			DATE:
	Large Area Tracking Range (LATR)		**February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
RDT&E, N / BA-7	0204571N Consolidated Training Systems Development	W0604 (TRID) Large Area Tracking Range	

Fiscal Year	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
Acquisition Milestones																												
Block 4.0 LATR Upgrade																												
Block 4.0 LATR Upgrade DT-III																												
LATR Power Conditioner OT&E																												
LATR Multi-GIS OT&E																												
LATR GPS REC OT&E																												
LATR ADIU OT&E																												
LATR Recertification																												
Block 5.0 LATR Upgrade																												
Deliveries																												

R-1 SHOPPING LIST - Item No. 172

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

CLASSIFICATION:

Exhibit R-4a, Schedule Detail **Large Area Tracking Range (LATR)**					DATE: **February 2004**			
APPROPRIATION/BUDGET ACTIVITY **RDT&BA-7**	PROGRAM ELEMENT 0204571N Consolidated Training Systems Development				PROJECT NUMBER AND NAME W0604 (TRID) Large Area Tracking Range			
Schedule Profile		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Block 4.0 LATR Upgrade IOC		1Q-3Q						
Block 4.0 LATR Upgrade DT-III		1Q						
LATR GPS REC OT&E				2Q-3Q				
LATR ADIU OT&E				2Q-3Q				
LATR Recertification			2Q-4Q					
Block 5.0 LATR Upgrade IOC		4Q	1Q-4Q	1Q				

R-1 SHOPPING LIST - Item No. 172

CLASSIFICATION:

EXHIBIT R4, Schedule Profile	**Combat Training System Development**	DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT NUMBER AND NAME 0204571N Consolidated Training Systems Development	PROJECT NUMBER AND NAME W0604 (TRID) Combat Training Systems Development

Fiscal Year	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
Acquisition Milestones																												
JDS IOC																												
Semi-Annual Blk Upgrade IOC																												
LATR/TACTS Interface																												
Test Set Rehost Dev																												
PDR																												
CDR																												
T&E																												
IOC																												
Deliveries																												

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

CLASSIFICATION:

Exhibit R-4a, Schedule Detail **Combat Training Systems Development**						DATE: **February 2004**		
APPROPRIATION/BUDGET ACTIVITY **RDT&BA-7**	PROGRAM ELEMENT 0204571N Consolidated Training Systems Development				PROJECT NUMBER AND NAME W0604 (TRID) Combat Training Systems Development			
Schedule Profile		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
PCBJDS IOC		1Q-4Q	1Q-2Q					
Semi-annual Block Upgrades IOC		1Q - 4Q	1Q-4Q	1Q-4Q				
LATR/TACTS Interface		1Q - 4Q	1Q-3Q					
Test Set Rehost			1Q-4Q					
PDR			1Q					
CDR			3Q					
T&E			4Q	1Q				
IOC				1Q				

R-1 SHOPPING LIST - Item No. 172

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2004**	
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 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost			**2.819**	**9.461**	**16.165**	**8.563**	**11.324**	**3.461**
RDT&E Articles Qty			**4**	**2**	**1**			

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Tactical Combat Training System will provide the Navy a replacement for major portions of the Tactical Aircrew Combat Training System (TACTS) and Large Area Tracking Range (LATR) system. TCTS will also provide fleet deployable training for at sea training and tactics development. By providing a rangeless capability, the system will greatly increase the area where live instrumented training can be conducted. Initial fielding of a Non-Developmental Item (NDI) Pod system is planned at NAS Key West. The program incorporates an evolutionary development (incremental) towards a system capable of supporting a broad spectrum of naval platforms through weapons simulations, participant weapons system stimulation, open architecture and a high capacity/long range secure data link.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0204571N Consolidated Training Systems Development	W3093 Tactical Combat Training System (TCTS)

B. Accomplishments/Planned Program

Tactical Combat Training System		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		0.000	2.819	9.461
RDT&E Articles Quantity			4	2

Qualify and complete the NDI Rangeless Pod system for use at small range. Develop and deliver Integrated Logistics products for fielding the NDI pod at NAS Key West. Develop F/A-18 (C/D/E/F) Internal Subsystem (IS). Initiate testing of TCTS system for deployed airwing training. Initiate development of instrumentation package for rotary win g and transport aircraft. Develop and implement track exchange interface between TCTS live monitor and TACTS Control and Computation Subsystem (CCS). Define Test and Training Enabling Architecture (TENA) compliant interface between TCTS and an Advance Display System. Develop and deliver Integrated Logistics products for the IS and for fielding the TCTS system aboard deployed carriers.

R-1 SHOPPING LIST - Item No. 172

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0204571N Consolidated Training Systems Development	W3093 Tactical Combat Training System (TCTS)

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2003	FY 2004	FY 2005
Previous President's Budget:	0.000	2.851	7.862
Current President's Budget:	0.000	2.819	9.461
Total Adjustments	0.000	-0.032	1.599
Summary of Adjustments			
Congressional Undistributed Reductions		-0.032	
Economic Adjustments			0.023
Reprioritization			1.576
Subtotal		-0.032	1.599

Schedule: The following milestones have changed to better reflect program status:

To:	From:
Phase 1 NDI Transportable (TGS, AS) FY04 1Q/4Q	Phase 1 NDI Transportable (TGS, AS) FY04 2Q/4Q
Phase 2 Shipboard (SGS, IS) FY04 1Q/4Q	Phase 2 Shipboard (SGS, IS) FY04 2Q/4Q

Technical:

Not Applicable

R-1 SHOPPING LIST - Item No. 172

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2004
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0204571N Consolidated Training Systems Development	W3093 Tactical Combat Training System (TCTS)

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
Related OPN:	0	1.188	2.291	3.780	8.402	6.450	7.525	Cont.	
Related APN:	0	7.217	8.505	15.002	19.311	22.609	28.072	Cont.	

E. ACQUISITION STRATEGY:

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

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)

DATE: **February 2004**

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	CPIF	Cubic, San Diego				1.783	1Q/04	2.415	1Q/05	6.841	11.039	11.039
Subtotal Product Development						1.783		2.415		6.841	11.039	

Remarks:

Software Dev. Electronics	CPIF	Cubic, San Diego						3.411	1Q/05	34.661	38.072	38.072
Integrated Logistics Support	Various	Various				0.230	1Q/04	0.579	1Q/05	Continuing	Continuing	
Subtotal Support						0.230		3.990		Continuing	Continuing	

Remarks:

R-1 SHOPPING LIST - Item No. 172

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)

DATE: **February 2004**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-7**

PROGRAM ELEMENT: 0204571N Consolidated Trai

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	WX	NAWC-AD PR				0.082	1Q/04	0.833	1Q/05	Continuing	Continuing	
(Misc. <$1M)												
Test Assets												
Subtotal T&E						0.082		0.833				

Remarks:

Contractor Engineering Support	CPIF	Cubic, San Diego				0.040	1Q/4Q	0.518	1Q/05	0.562	1.120	1.120
Government Engineering Support	WX	NAWC-AD PR				0.384	1Q/04	1.300	1Q/05	Continuing	Continuing	
Program Mangement Support	WX	NAWC-AD PR				0.240	1Q/04	0.310	1Q/05	Continuing	Continuing	
Travel	WR	NAWC-AD PR				0.060	1Q/04	0.095	1Q/05	Continuing	Continuing	
Subtotal Management						0.724		2.223		Continuing	Continuing	

Remarks:

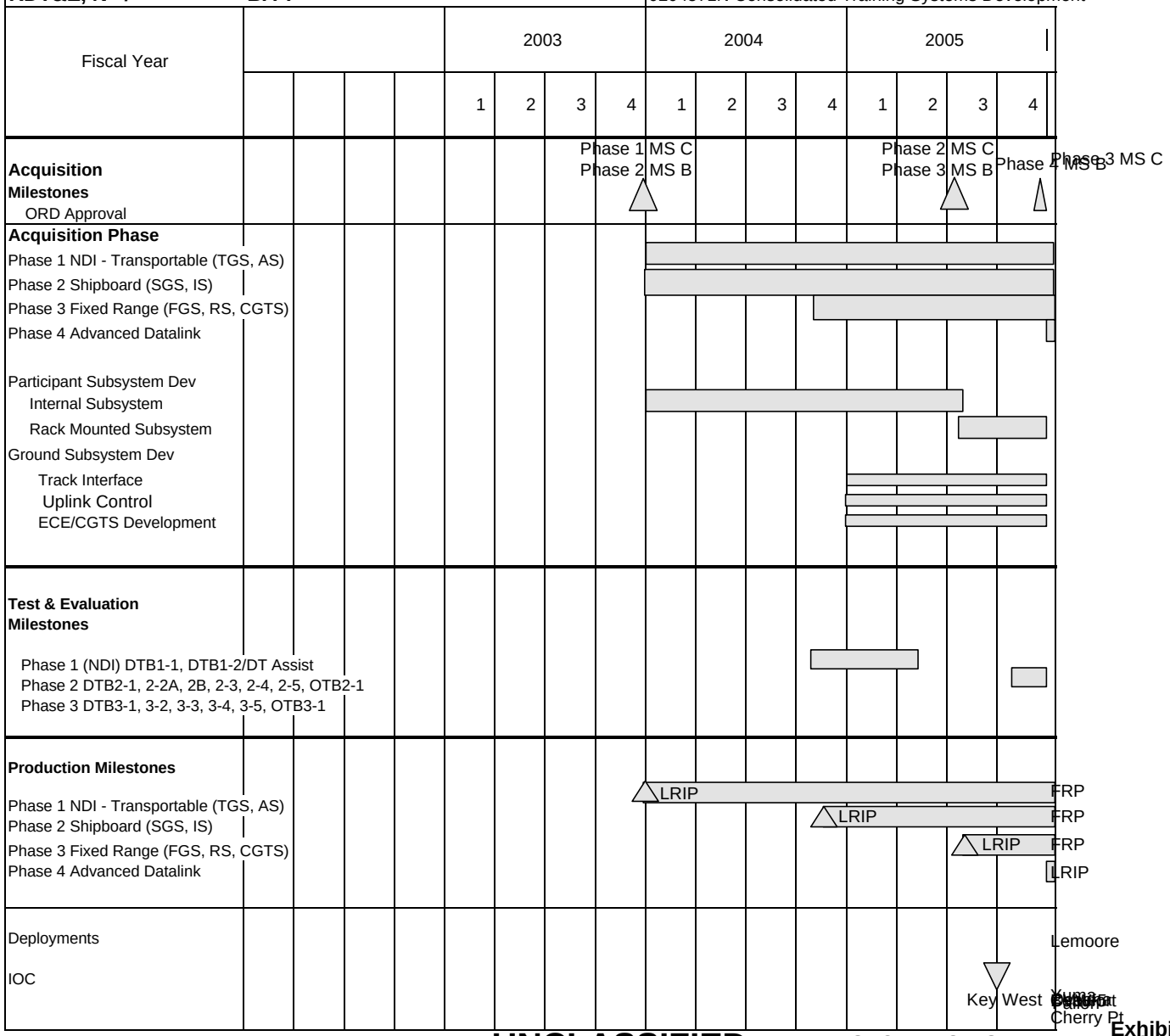
Total Cost			0.000	0.000		2.819		9.461		Continuing	Continuing	

Remarks:

R-1 SHOPPING LIST - Item No. 172

EXHIBIT R4, Schedule Profile

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME
RDT&E, N / BA-7	0204571N Consolidated Training Systems Development



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

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **February 2004**		
APPROPRIATION/BUDGET ACTIVITY **RDT&BA-7**	PROGRAM ELEMENT 0204571N Consolidated Training Systems Development				PROJECT NUMBER AND NAME W3093 Tactical Combat Training System (TCTS)			
Schedule Profile		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
ORD Approval		4Q						
Phase 1 NDI - Transportable (TGS, AS)			1Q-4Q	1Q-4Q				
Phase 2 Shipboard (SGS, IS)			1Q-4Q	1Q-4Q				
Phase 3 Fixed Range (FGS, RS, CGTS)			4Q	1Q-4Q				
Phase 4 Advanced Datalink								
Phase 1 MS C			1Q					
IOC Key West				4Q				
IOC Lemoore								
Phase 2 MS B			1Q					
Phase 2 MS C				3Q				
IOC CVW-5								
Phase 3 MS B				3Q				
Phase 3 MS C								
IOC Oceana								
IOC Fallon								
IOC Beaufort								
IOC Yuma								
IOC Cherry Pt								
Phase 4 MS B								
Phase 1 DT/OT			4Q	1Q-2Q				
Phase 2 DT/OT				4Q				
Phase 3 DT/OT								

R-1 SHOPPING LIST - Item No. 172

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2004**	
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 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost		**1.987**	**1.640**	**1.476**	**1.509**	**1.820**	**1.855**	**1.892**
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

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

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

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA7	0204571N/Consolidated Training Systems Development	W2124/Air Warfare Training Development

B. Accomplishments/Planned Program

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		0.860	0.623	0.372
RDT&E Articles Quantity				

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

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		0.519	0.476	0.527
RDT&E Articles Quantity				

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

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		0.408	0.344	0.275
RDT&E Articles Quantity				

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

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
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

B. Accomplishments/Planned Program (Cont.)

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		0.200	0.197	0.302
RDT&E Articles Quantity				

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

R-1 SHOPPING LIST - Item No. 172

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
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 2003	FY 2004	FY 2005
Previous President's Budget:	2.065	1.658	1.499
Current BES/President's Budget	1.987	1.640	1.476
Total Adjustments	-0.078	-0.018	-0.023
Summary of Adjustments			
Congressional program reductions			
Congressional undistributed reductions			
Congressional rescissions			
SBIR/STTR Transfer	-0.031		
Economic Assumtions			-0.004
Sponsor/FMB/NAVAIR Adj.			
Reprogrammings	-0.047		
Congressional increases			
Reprioritization		-0.018	-0.019
Subtotal	-0.078	-0.018	-0.023

Schedule:

Planned return on investment negatively impacted. MTS/Common Instructor Operator Station specifications will slip from FY04 to FY05. Visual display solutions for deployed simulation will slip from FY06 to FY07.

Technical: Not applicable.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
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

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
APN Line 33. BA-7 (47C2) Commond Ground Equi Equipment (USMC Federation Simulators)	21.109	3.027	0.000	19.841	24.386	15.183	22.359		105.905
APN Line 23. BA-7 (47C2) Commond Ground Equipment (Fleet Aircrew Simulator Training (FAST))	54.423	30.749	64.312	95.502	55.658	58.264	59.017		417.925

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

E. ACQUISITION STRATEGY:

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

F. MAJOR PERFORMERS:

R-1 SHOPPING LIST - Item No. 172

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2004**			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**		PROGRAM ELEMENT 0204571N/Consolidated Training Systems Development			PROJECT NUMBER AND NAME 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	0.407	11/02	0.460	11/03	0.457	11/04	Continuing	Continuing	
Systems Engineering	WX&PID	NAWCTSD, NAMRL	3.818	0.746	03/03	0.540	03/04	0.350	03/05	Continuing	Continuing	
Systems Engineering	MIPR	ONR	0.120	0.000		0.000		0.000		0.000	0.120	
Systems Engineering	WX	NAWCWD	0.753	0.000		0.000		0.000		0.000	0.753	
Systems Engineering	MIPR	USAF ACADEMY	0.040	0.000		0.000		0.000		0.000	0.040	
Systems Engineering	WR	NPGS	0.090							Continuing	Continuing	
Subtotal Product Development			6.726	1.153		1.000		0.807		Continuing	Continuing	

Remarks:

Trainer Development Support	RX/PID	NAWCAD	0.539	0.163	11/02	0.155	11/03	0.157	11/04	Continuing	Continuing	
Subtotal Support			0.539	0.163		0.155		0.157		Continuing	Continuing	

Remarks: N/A

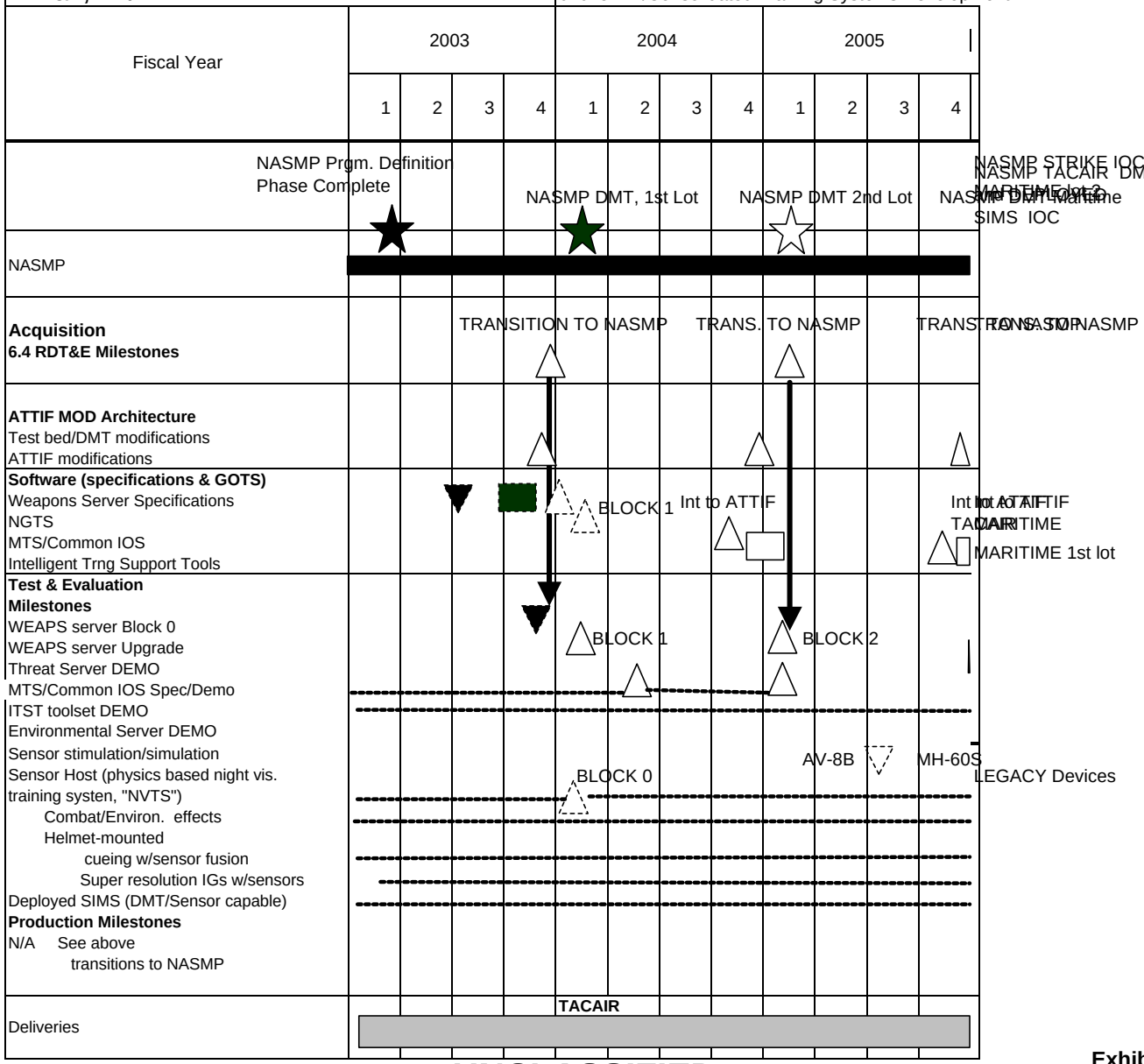
CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**		PROGRAM ELEMENT 0204571N/Consolidated Training Systems Development			PROJECT NUMBER AND NAME 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	0.639	11/02	0.465	11/03	0.492	11/04	Continuing	Continuing	
Developmental Test & Evaluation	WX	NCTAMSLANT	0.564								0.564	
Subtotal T&E			3.729	0.639		0.465		0.492		Continuing	Continuing	
Remarks:												
Travel	WX	NAWCAD	0.112	0.032	11/02	0.020	11/03	0.020	11/04	Continuing	Continuing	
Subtotal Management			0.112	0.032		0.020		0.020		Continuing	Continuing	
Remarks:												
Total Cost			11.106	1.987		1.640		1.476		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 172

EXHIBIT R4, Schedule Profile

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME
RDT&E, N /	0204571N/Consolidated Training Systems Development



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

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **February 2004**		
APPROPRIATION/BUDGET ACTIVITY **RDT&BA-7**	PROGRAM ELEMENT 0204571N/Consolidated Training Systems Development				PROJECT NUMBER AND NAME W2124/Air Warfare Training Development			
Schedule Profile	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	
Transition to NASMP	4Q		1Q					
ATTIF MOD Architecture								
Test bed/DMT modifications								
ATTIF modifications	4Q	4Q	4Q					
Software (specifications & GOTS)								
BLOCK 1		1Q						
Int to ATTIF		4Q						
Int to ATTIF TACAIR			4Q					
Int to ATTIF MARITIME								
MARITIME								
Test and Evaluation								
WEAPS server Upgrade BLOCK 1		1Q						
WEAPS server Upgrade BLOCK 2			1Q					
WEAPS server Upgrade MARITIME								
MTS/Common IOS Spec/Demo		2Q	1Q					
ITST toolset DEMO								
Sensor Host physics based NVTS		1Q						
Combat/Environ. Effects								
Helmet-mounted cueing w/sensor fusion								
Super resolution IGs w/sensors								
Deployed SIMS (DMT/Sensor capable)								

R-1 SHOPPING LIST - Item No. 172

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification										DATE: **February 2004**	
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**	**1.448**	**1.460**	**1.466**	**1.465**	**1.467**	**1.469**	**Continuing**	**Continuing**
3091 / Advanced Cryptologic Systems Engineering				**1.448**	**1.460**	**1.466**	**1.465**	**1.467**	**1.469**	**Continuing**	**Continuing**
											0.000
											0.000
											0.000
											0.000
											0.000
Quantity of RDT&E Articles											**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.

(**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.

R-1 SHOPPING LIST - Item No. 173

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification										DATE: February 2004	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT NUMBER AND NAME PE 0204574N Advanced Cryptologic Systems Engineering					PROJECT NUMBER AND NAME 3091 / 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				**1.448**	**1.460**	**1.466**	**1.465**	**1.467**	**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. 173

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	PE 0204574N Advanced Cryptologic Systems Engineering	3091 / Advanced Cryptologic Systems Engineering

(U) B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost			1.448	1.460
RDT&E Articles Quantity				

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.

R-1 SHOPPING LIST - Item No. 173

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	PE 0204574N Advanced Cryptologic Systems Engineering	3091 / Advanced Cryptologic Systems Engineering

(U) C. PROGRAM CHANGE SUMMARY:

(U) Funding:	FY 2003	FY 2004	FY 2005
Previous President's Budget:	0.000	1.466	1.468
Current BES/President's Budget	0.000	1.448	1.460
Total Adjustments	0.000	0.018	0.008
Summary of Adjustments			
Sec. 8094: Management Improvements	0.000	-0.004	0.000
Sec. 8125: Efficiencies/Revised Econ. Assumptions	0.000	-0.012	0.000
PBD 430 WCF - R&D - SPAWAR	0.000	0.000	-0.001
PBD 426 Rates - SSC	0.000	0.000	0.001
PBD 604 - Inflation/Non purchase inflation	0.000	0.000	-0.005
Misc. Navy Adjustments	0.000	-0.002	-0.003
Subtotal	0.000	-0.018	-0.008

(U) Schedule:

Not Applicable

(U) Technical:

Not Applicable

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	PE 0204574N Advanced Cryptologic Systems Engineerin	3091 / Advanced Cryptologic Systems Engineering

(U) D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
OPN Line 3501	20.073	18.511	19.64	19.079	20.601	20.414	19.855	Continuing	Continuing
OMN 4B7N PE 0702827N	2.477	2.602	2.948	2.909	3.064	3.086	3.212	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.

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**		PROGRAM ELEMENT PE 0204574N Advanced Cryptologic Systems Engineering			PROJECT NUMBER AND NAME 3091 / 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											0.000	
Ancillary Hardware Development											0.000	
Aircraft Integration											0.000	
Ship Integration											0.000	
Ship Suitability											0.000	
Systems Engineering	Various	Various				0.166	12/03	0.166	12/04	Continuing	Continuing	Continuing
Training Development											0.000	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			0.000	0.000		0.166		0.166		Continuing	Continuing	Continuing
Remarks:												
Development Support											0.000	
Software Development	Various	Various				0.982	12/03	1.000	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		0.982		1.000		Continuing	Continuing	Continuing
Remarks:												

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**		PROGRAM ELEMENT PE 0204574N Advanced Cryptologic Systems Engineering				PROJECT NUMBER AND NAME 3091 / 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						0.050	12/03	0.050	12/04	Continuing	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	0.000		0.050		0.050		0.000	0.100	
Remarks:												
Contractor Engineering Support											0.000	
Government Engineering Support											0.000	
Program Management Support						0.215	Various	0.207	Various		0.422	
Travel						0.035	Various	0.037	Various		0.072	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			0.000	0.000		0.250		0.244		0.000	0.494	
Remarks:												
Total Cost			0.000	0.000		1.448		1.460		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 173

CLASSIFICATION:

EXHIBIT R4, Schedule Profile | DATE: **February 2004**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-7**

PROGRAM ELEMENT NUMBER AND NAME: PE 0204574N Advanced Cryptologic Systems Engineering

PROJECT NUMBER AND NAME: 3091 / Advanced Cryptologic Systems Engineering

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										SDR				SDR				SDR				SDR				SDR				SDR		
HW/SW Delivery																																
Software																																
Test & Evaluation Milestones											OA				OA				OA				OA				OA				OA	
Operational Assessment																																
Production Milestones																																
Delivery																																

R-1 SHOPPING LIST - Item No. 173

CLASSIFICATION:

Exhibit R-4a, Schedule Detail					DATE: **February 2004**			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT PE 0204574N Advanced Cryptologic Systems Engineering				3091 / Advanced Cryptologic Systems Engineering			
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Prototype Phase			1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
System Design Review (SDR)			2Q	2Q	2Q	2Q	2Q	2Q
Operational Assessment (OA)			3Q	3Q	3Q	3Q	3Q	3Q
HW/SW Delivery			3Q/4Q	3Q/4Q	3Q/4Q	3Q/4Q	3Q/4Q	3Q/4Q

R-1 SHOPPING LIST - Item No. 173

Exhibit R-2, RDT&E Budget Item Justification								Date: February 2004		
APPROPRIATION/BUDGET ACTIVITY RDT&E,N /7					R-1 ITEM NOMENCLATURE 0204575N Electronic Warfare (EW) Readiness Support					
COST ($ in Millions)	FY 02	FY 03	FY 04	FY05	FY06	FY07	FY08	FY09	TO COMPLETE	TOTAL
Information Warfare/Z2263	4.404	14.635	7.691	5.874	9.786	8.699	8.876	9.053	CONT	CONT
Quantity of RDT&E Articles	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

A. Mission Description and Budget Item Justification

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.

FY03 reduction is for various minor reductions including Small Business and Innovative Research (SBIR). Delta in FY05 is due to realignment toZ2462 (Retract Barley). Details of Retract Barley are held at a higher classification

Exhibit R-2a, RDT&E Project Justification				Date: February 2004
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						
Project Cost	4.404	14.635	7.691	5.874						
RDT&E Articles Qty	N/A	N/A	N/A	N/A						

A. Accomplishments/Planned Program

FY2003 Accomplishments
- (3.0) – IMPACTS updates
- (9.8) – Electronic Attack
- (1.5) – Computer Network Operations
- (0.3) – Program Office Support

FY2004 Plans
- (2.4) – IMPACTS updates
- (2.4) – Electronic Attack
- (1.1) – Computer Network Operations
- (1.3) – Navy Vulnerability Assessment Counter-Measures (NVACM)
- (0.5) – Program Office Support

FY2005 Plans
- (1.5) – IMPACTS updates
- (1.5) – Electronic Attack
- (1.0) – Computer Network Operations
- (1.0) – Navy Vulnerability Assessment Counter-Measures (NVACM)
- (0.5) – Navy IO
- (0.4) – Program Office Support

B. Other Program Funding Summary

	FY02	FY03	FY04	FY05
OMN Line 4B7N	2.3	2.4	2.6	2.7
OPN 234000/6	2.9	5.0	4.2	4.0

C. Acquisition Strategy: N/A.

D. Schedule Profile: N/A

Exhibit R-2a, RDT&E Project Justification			Date: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E,N /7	PROGRAM ELEMENT 0204575N	PROJECT NAME AND NUMBER Information Warfare/Z2263	

E. Program Change Summary:

.....	FY03	FY04	FY05
Previous President's Budget	14.789	7.691	5.874
Current BES/President's Budget	14.635	11.678	12.201
Total Adjustments	-.154	-3.987	-6.327
Summary of Adjustments:			
Realign to Project Z2462	0.000	-3.900	-3.900
SBIR Reduction	- 0.154	-0.000	0.000
FMB realign to R. Barley	0.000	0.000	-2.275
Navy ATB (Manpower)	0.000	0.000	-0.131
Congressional Adj. Sect 8094: Mgmt	0.000	-0.021	0.000
Congressional Adj. Sect 8126: Efficiencies	0.000	-0.066	0.000
PBD -604 Inflation Adj.	0.000	0.000	-0.016
PBD-604 Non Purchase Inflation Adj	0.000	0.000	-0.003
P07 Technical Adj.	0.000	0.000	-0.002
Subtotal	-0.154	-3.987	-6.327

Exhibit R-3 Cost Analysis									Date: February 2004			
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	8.580	Var	1.962	Var	1.815	Var	Cont.	Cont.	
Subtotal Product Development			0.996	8.580	Var	1.962	Var	1.815	Var	Cont.	Cont.	
Development Support	Var	Var	1.079	1.905	Var	1.979	Var	1.034	Var	Cont.	Cont.	
Software Development	Var	Var	1.901	2.000	Var	2.000	Var	1.100	Var	Cont.	Cont.	
Subtotal Support			2.980	3.905	Var	3.979	Var	2.134	Var	Cont.	Cont.	
Remarks												

Exhibit R-3 Cost Analysis												Date: February 2004
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.	
Remarks												
Total Cost			4.404	14.635	Var	7.691	Var	5.874	Var	Cont.	Cont.	
Remarks												

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: **February 2004**	
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7**					R-1 ITEM NOMENCLATURE 0205601N HARM Improvement			
COST ($ in Millions)		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost		**58.793**	**51.601**	**163.371**	**207.973**	**160.118**	**66.684**	**28.792**
A1780 HARM Improvement		**3.763**	**1.991**	**1.755**	**3.688**	**3.696**	**3.823**	**3.839**
A2185 Adv. Anti-Radiation Guided Missile (AARGM)		**46.421**	**31.188**	**61.450**	**74.435**	**94.176**	**25.483**	
A2211 Joint Common Missile*		**7.659**	**13.749**	**82.820**	**117.343**	**62.246**	**37.378**	**24.953**
A3056 Direct Attack Guided Rocket (DAGR)/APKWS			**4.673**	**12.504**	**12.502**			
A3057 Common Defense System				**4.842**	**0.005**			
A9272 Low Cost High Temp Material		**0.950**						

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

Congressional Addds: $2.8 million in FY 2004 for AARGM accelerated Embedded National Tactical Receiver (ENTR) insertion in SD&D. $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; $2.8 million in FY 2004 for AARGM accelerated Embedded National Tactical Receiver (ENTR) insertion in SD&D.

(U) HIGH-SPEED ANTI-RADIATION (HARM) IMPROVEMENT: The International HARM Upgrade Program (IHUP) (Block IIIB/VI) was a tri-national Precision Navigation Unit (PNU) cooperative program consisting of the development of a USN-unique tactical software upgrade and a hardware upgrade to include an Inertial Measurement Unit (IMU) and a Global Positioning System (GPS) receiver. This upgrade was intended to 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). Tri-national participation in the HARM Precision Navigation Upgrade (PNU) modification program was terminated in 3Q03. 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.

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification	DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY BA-7**	R-1 ITEM NOMENCLATURE 0205601N HARM Improvement

(U) **JOINT COMMON MISSILE (JCM)**: 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 Wind 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.

(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.

(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.

(U) **LOW COST HIGH TEMP MATERIALS**: FY 03 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.

R-1 SHOPPING LIST - Item No. 175

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2004**	
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 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost		**3.763**	**1.991**	**1.755**	**3.688**	**3.696**	**3.823**	**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) was 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 consisted of significant hardware and software modifications to the missile's control and guidance sections. The USN frequently refered to the IHUP upgrade as Block IIIB/VI. The HARM Block IIIB/VI program started development in FY98 and was scheduled to commence production in FY03. International participation in the HARM Precision Navigation Upgrade (PNU) modification program was terminated in 3Q03. 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. □

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0205601N HARM Improvement	A1780 HARM Improvement

B. Accomplishments/Planned Program

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		3.763	0.000	0.000
RDT&E Articles Quantity				

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

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		0.000	1.991	1.755
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.

R-1 SHOPPING LIST - Item No. 175

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
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 2003	FY 2004	FY 2005
Previous President's Budget:	3.807	2.013	1.749
Current BES/President's Budget	3.763	1.991	1.755
Total Adjustments	-0.044	-0.022	0.006
Summary of Adjustments			
Congressional program reductions			
Congressional undistributed reductions		-0.022	
Congressional rescissions			
SBIR/STTR Transfer	-0.002		
Economic Assumptions			0.008
Reprogrammings	-0.042		
Congressional increases			
Reprioritizations			-0.002
Subtotal	-0.044	-0.022	0.006

Schedule:

Tri-national participation in the HARM Precision Navigation Upgrade (PNU) modification program was terminated in 3Q03. As a result, the schedule has changed significantly from the previous President's Budget. The only efforts remaining consist of continuing Foreign Military Exploitation.

Technical:

Not Applicable.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
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:

Line Item No. & Name	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
WPN BLI 203270, HARM MODS	3.880	0	0	0	0			0	3.880

Related RDT&E: Not applicable.

E. ACQUISITION STRATEGY: *

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

Available resources wil be applied to HARM Legacy configuration requirements.

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**		PROGRAM ELEMENT 0205601N HARM Improvement			PROJECT NUMBER AND NAME 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	0.824	10/02						19.073	19.073
Aircraft Integration	WX	NAWC WD, China Lake, CA	9.746	1.530	10/02						11.276	
Systems Engineering	WX	NAWC WD, China Lake, CA	2.984	0.625	10/02						3.609	
Subtotal Product Development			30.979	2.979		0.000		0.000		0.000	33.958	
Remarks:												
Integrated Logistics Support	WX	NAWC WD, Point Mugu, CA	1.209	0.435	10/02						1.644	
Studies & Analyses	MIPR	Boeing		0.030	01/03						0.030	
Subtotal Support			1.209	0.465		0.000		0.000		0.000	1.674	
Remarks:												

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**			PROGRAM ELEMENT 0205601N HARM Improvement			PROJECT NUMBER AND NAME 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	0.156	02/03						9.162	
Operational Test & Evaluation	WX	NAWC WD China Lake, CA	3.308								3.308	
Operational Test & Evaluation FME	WX	NAWC WD China Lake, CA	0.000	0.135	02/03	1.901	10/03	1.731	10/04	Continuing	Continuing	
Award Fees												
Subtotal T&E			12.314	0.291		1.901		1.731		Continuing	Continuing	
Remarks: □												
Contractor Engineering Support	RX	Rockwell Collins	2.149	0.000		0.065	12/03	0.015	12/04		2.229	
Program Management Support	WX	NAWCAD, Pax River, MD				0.011	01/04			Continuing	Continuing	
Travel/Transportation	WX	NAWCAD, Pax River, MD	0.337	0.028	10/02	0.014	10/03	0.009	10/04	Continuing	Continuing	
Subtotal Management			2.486	0.028		0.090		0.024		Continuing	Continuing	
Remarks:												
Total Cost			46.988	3.763		1.991		1.755		Continuing	Continuing	
Remarks: Tri-national participation in the HARM Precision Navigation Upgrade (PNU) modification program was terminated in 3Q03.												

R-1 SHOPPING LIST - Item No. 175

CLASSIFICATION:

EXHIBIT R4, Schedule Profile | DATE: **February 2004**

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 TRR					ITPWG/FTRR																											
Testing CT&E				CT&E																												
Combined DT/OT									Combined DT/OT																							
PRR							PRR																									
Foreign Military Exploitation (FME) - continuing																																

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

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **February 2004**		
APPROPRIATION/BUDGET ACTIVITY **RDT& BA-7**	PROGRAM ELEMENT 0205601 HARM Improvement				PROJECT NUMBER AND NAME A1780 HARM Improvement			
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Test Readiness Review (TRR)	4Q							
Combined Test and Evaluation	4Q							
Developmental Testing (Combined DT-OT) - partial completion	4Q	1Q-3Q						
Preproduction Readiness Review (PRR) - partial completion	4Q	1Q-2Q						
Foreign Military Exploitation (FME) Analysis and Testing			1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q

R-1 SHOPPING LIST - Item No. 175

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2004**	
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 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost		**46.421**	**31.188**	**61.450**	**74.435**	**94.176**	**25.483**	**0.000**
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

*Congressional Add: $2.8 million in FY 2004 for AARGM accelerated Embedded National Tactical Receiver (ENTR) insertion in SD&D.

The Advanced Anti-Radiation Guided Missile (AARGM) , AGM-88E, Project transitioned a Phase III Small Business Innovative Research (SBIR) program to develop and demonstrate a multi-mode guidance section on a HARM airframe to System Development and Demonstration (SD&D) in 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 AGM-88 missile. AARGM weapon system capabilities include: counter shutdown, active Millimeter Wave guidance, expanded threat coverage, enhanced anti-radiation homing receiver, netted targeting real-time feed via Integrated Broadcasting Systems (IBS) prior to missile launch, weapon impact assesssment transmitted prior to detonation, GPS/point-to-point weapon, and weapon operation in impact avoidance zone/missile impact zones.

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

The AARGM Advanced Technology Demonstration (ATD) 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 was performed by ATK Missile Systems Company (AMSC) (previously SAT) under NAVAIR contract N00019-94-C-0078. This contractual effort resulted in a cumulative contract value of $194.9M. The AARGM ATD completed in FY 2002; the AARGM Risk Reduction/Producibility Enhancement Effort completed in FY03. At Milestone B, in June 2003, AARGM successfully transitioned to a System Development and Demonstration (SD&D) Acquisition Category 1C (ACAT 1C) program. AMSC was awarded the AARGM SD&D NAVAIR Contract N00019-03-C-0353, valued at $222.6M. The AARGM program plans to produce 1,750 missiles (75 Low Rate Initial Production (LRIP) missiles and 1,675 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 was completed in FY03. Quick Bolt demonstration testing successfully used Impact Avoidance Zone (IAZ) logic to distinguish between the proscribed and original target, demonstrating the ability to greatly reduce friendly fire incidents and collateral damage.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0205601N HARM Improvement	A2185 Advanced Anti-Radiation Guided Missile (AARGM)

B. Accomplishments/Planned Program

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		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 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		11.114	31.188	61.450
RDT&E Articles Quantity				

Milestone B System Development and Demonstration (SD&D) activities, and post-Milestone B SD&D efforts. Contractor to update the Advanced Technology Demonstration (ATD)/Advanced Concept Technology Demonstration (ACTD) subsystem designs to the SD&D System Performance Specification and prepare for/conduct System Design Review, Preliminary Design Review, Critical Design Review, Contractor build-up and laboratory and field testing of the AGM-88E seeker. Field activities to support System Engineering, aircarft 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 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		13.407		
RDT&E Articles Quantity				

Quick Bolt Advanced Concept Technology Demonstration (ACTD) contractor and governmental activities demonstrated 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 supported Military Utility Assessment activities including hardware in-the-loop testing, field testing, and missile live firings. Contractor transferred residual ACTD assets to SD&D Contract.

Item No. 175

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0205601N HARM Improvement	A2185 Advanced Anti-Radiation Guided Missile (AARGM)

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2003	FY 2004	FY 2005
Previous President's Budget	47.531	28.739	53.553
Current BES/President's Budget	46.421	31.188	61.450
Total Adjustments	-1.110	2.449	7.897
Summary of Adjustments			
Congressional undistributed reductions		-0.351	
Congressional rescissions			
SBIR/STTR Transfer	-0.973		
Economic Assumtions			-0.072
Reprogrammings	-0.137		7.969
Reprogrammings			
Congressional increases		2.800	
Subtotal	-1.110	2.449	7.897

Schedule:

To support Milestone C in 2QFY08, the Operational Assessment (OA) has been added to 4QFY07. Operational Testing (OTC) has been shifted to 3QFY08 to allow for Developmental Test (DT) completion before commencement of OTC. Completion of Low Rate Initial Production (LRIP) I and Initial Operational Capibility (IOC) has been accelerated to 4QFY09 per the funding adjustments.

Technical:

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
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:

Line Item No. & Name	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
P-1 Proc. Line Item No. 232700, HARM MODS	0	0	0	0	0	40.545	42.546	889.809	972.900

E. ACQUISITION STRATEGY:

The AARGM program started as a Phase I Small Business Innovative Research (SBIR), Advanced Technology Program (ATD), evolved into a Phase III SBIR program, and transitioned into a System Development and Demonstration (SD&D) ACAT 1C program in June 2003. The AARGM SD&D will fulfill U.S. Navy operational requirements and incorporates AARGM 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) was completed in FY03 and transitioned into the AARGM SD&D.

R-1 SHOPPING LIST - Item No. 175

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1) — DATE: **February 2004**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-7** | PROGRAM ELEMENT: 0205601N HARM Improvement | PROJECT NUMBER AND NAME: 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, Woodland Hills, CA	0.000	3.346	06/03	25.949	12/03	44.884	12/04	148.436	222.615	222.615
Aircraft Integration	WX	NAWC WD, China Lake	0.122	2.613	10/02	0.488	10/03	2.000	10/04	2.200	7.423	
Systems Engineering	WX	NAWC WD, China Lake	15.611	4.200	10/02	2.831	10/03	8.437	10/04	21.164	52.243	
Systems Engineering	WX	JHU/APL, MD	0.615	0.000							0.615	
Primary Hardware Dev. - Risk Red.	CPFF	ATK, San Diego, CA	0.000	7.000	04/03						7.000	7.000
Subtotal Product Development			171.915	43.793		29.268		55.321		171.800	472.097	

Remarks:

Integrated Logistics Support	Var	Various		0.050	02/03	0.200	10/03	0.309	10/04	1.022	1.581	
Studies & Analyses	Var	Various		0.027	10/02	0.027	10/03	0.028	10/04	0.090	0.172	
Subtotal Support			0.000	0.077		0.227		0.337		1.112	1.753	

Remarks:

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**		PROGRAM ELEMENT 0205601N HARM Improvement			PROJECT NUMBER AND NAME 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	2.000	10/04	11.702	15.795	
Operational Test & Evaluation	WX	NAWC WD, CHINA LAKE								3.248	3.248	
Test Assets	WX	Assorted						2.750	10/04	2.250	5.000	
Subtotal T&E			0.000	1.200		0.893		4.750		17.200	24.043	
Remarks:												
Contractor Engineering Support	RX	DCS Corp, Alexandria, VA	3.236	1.311	10/02	0.720	11/03	0.942	11/04	3.476	9.685	
Travel	WX	NAWC AD, Patuxent MD	0.375	0.040	10/02	0.080	10/03	0.100	10/04	0.507	1.102	
Subtotal Management			3.611	1.351		0.800		1.042		3.983	10.787	
Remarks:												
Total Cost			175.526	46.421		31.188		61.450		194.094	508.679	
Remarks:												

R-1 SHOPPING LIST - Item No. 175

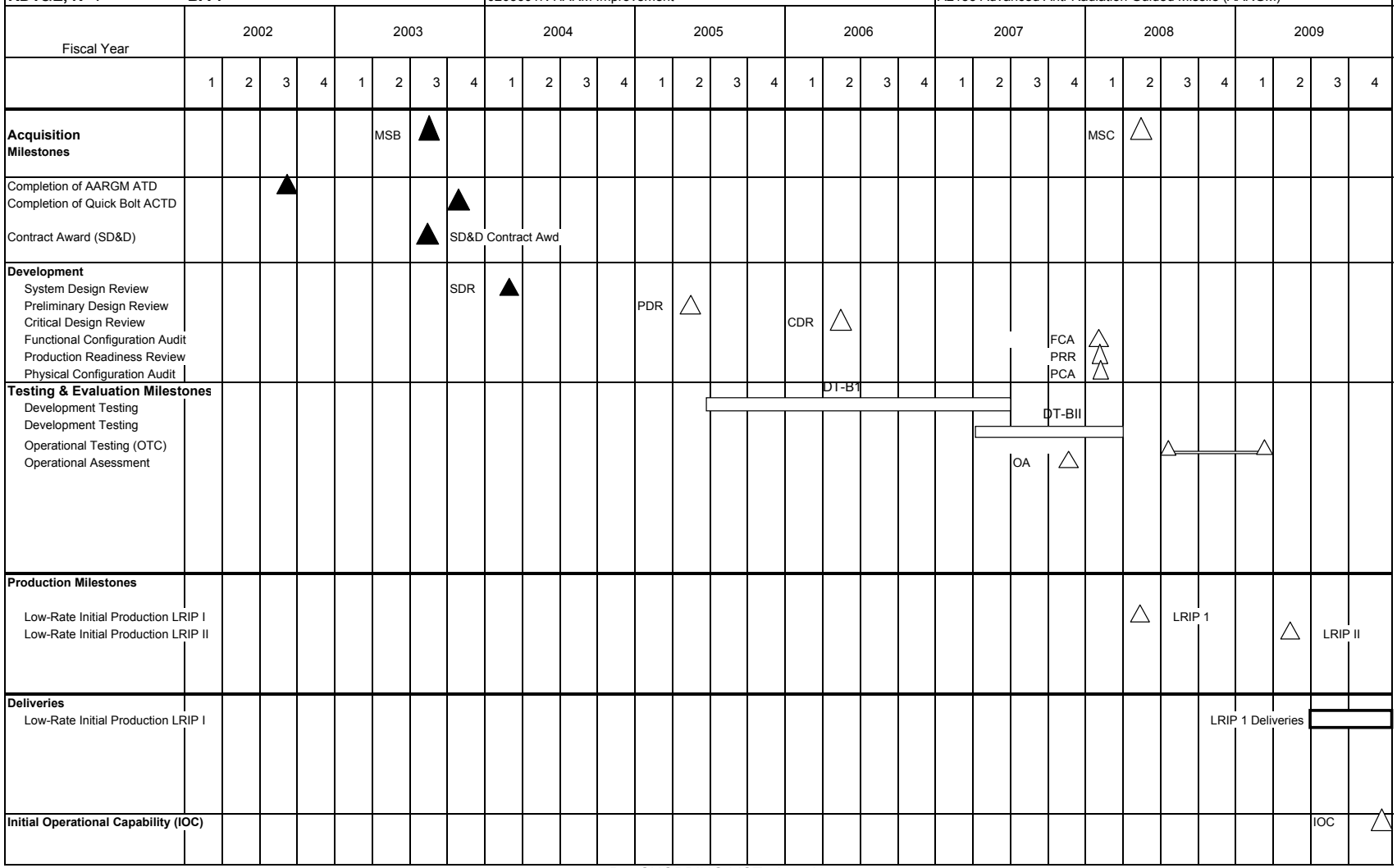
CLASSIFICATION:

EXHIBIT R4, Schedule Profile | DATE: **February 2004**

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)



CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **February 2004**		
APPROPRIATION/BUDGET ACTIVITY **RDT&BA-7**	PROGRAM ELEMENT 0205601N HARM Improvement				PROJECT NUMBER AND NAME A2185 Advanced Anti-Radiation Guided Missile (AARGM)			
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Milestone B		3Q						
Contract Award (SD&D)		3Q						
System Design Review (SDR)			1Q					
Preliminary Design Review (PDR)				2Q				
Developmental Testing (DT-B1)				3Q-4Q	1Q-4Q	1Q-2Q		
Critical Design Review (CDR)					2Q			
Developmental Testing (DT-B2)						2Q-4Q	1Q	
Operational Assessment (OA)						4Q		
Functional Configuration Audit (FCA)							1Q	
Preproduction Readiness Review (PRR)							1Q	
Physical Configuration Audit (PCA)							1Q	
Milestone C (MS C)							2Q	
Low-Rate Initial Production I - LRIP I							2Q	
Operational Testing (OTC)							3Q-4Q	1Q
Low Rate Initial Production - LRIP II								2Q
Low-Rate Initial Production I - LRIP I Delivery								3Q
Initial Operational Capability								4Q

R-1 SHOPPING LIST - Item No. 175

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2004**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT NUMBER AND NAME 0205601N HARM Improvement				PROJECT NUMBER AND NAME A2211 Joint Common Missile*			
COST ($ in Millions)		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost		**7.659**	**13.749**	**82.820**	**117.343**	**62.246**	**37.378**	**24.953**
RDT&E Articles Qty				**34**	**67**	**65**	**23**	

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:
*Previously referred to as JAWS/Modernized HELLFIRE

(U) Joint Common Missile (JCM): 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 Initial Capabilities Document (ICD) 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 Joint Common Missile. Joint 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 Wind and Rotary Wing Aircraft. Joint 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.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA - 7	0205601N HARM Improvement	A2211 Joint Common Missile

B. Accomplishments/Planned Program

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		7.659	6.480	
RDT&E Articles Quantity				

Continued participation with the Army in Joint Common Missile Risk Reduction/Producibility Enhancement efforts for transitioning into SD&D. 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). Risk reduction engineering on multi-mode seekers (Dual/Tri-Mode), advanced warheads, and variable thrust propulsion.

			FY 04	FY 05
Accomplishments/Effort/Subtotal Cost			7.269	82.820
RDT&E Articles Quantity				34

Continue participation with the Army in Joint Common Missile Milestone B System Development and Demonstration (SD&D) activities, and post-Milestone B SD&D efforts. 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, and Design Readiness Reviews. Contractor to conduct risk mitigation efforts and complete the design, development, fabrication, test, and qualification of a single configuration Joint Common Missile.
Field activities to support System Engineering, aircarft integration (including Software Configuration Set support), test asset, and test and evaluation requirements analysis, and developmental logistics support. Platform integration will be conducted on AH-1Z, F/A-18 E/F, and MH-60R.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	
RDT&E, N / BA-7	0205601N HARM Improvement	A2211 Joint Common Missile

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2003	FY 2004	FY 2005
Previous President's Budget:	7.950	13.904	59.614
Current BES/President's Budget	7.659	13.749	82.820
Total Adjustments	-0.291	-0.155	23.206
Summary of Adjustments			
Congressional program reductions			
Congressional undistributed reductions		-0.155	
Congressional rescissions			
SBIR/STTR Transfer	-0.207		
Economic Assumptions			-0.106
Reprogrammings	-0.084		
Congressional increases			
Sponsor/FMB/NAVAIR Adjustments			23.312
Subtotal	-0.291	-0.155	23.206

Schedule:

The Joint Common Missile program has a slightly revised plan and has shifted to the right 6 months due to JROC's direction to convert the Operational Requirements Document (ORD) to the new Capability Development Document (CDD).

Technical:

Not Applicable

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
RDT&E, N / BA-7	0205601N HARM Improvement	A2211 Joint Common Missile	

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
P-1 Proc, Line Item No. 225400 ($M) Joint Common Missile					0.8	23.4	46.9		71.100
RDT&E ARMY P.E. 0604329A Proj 013 JCM	28.602	94.7	153.8	148.3	84.7	67.7	57.7	148	783.502
WPN ARMY C70302/APE					6.2	71.6	102.4	TBD	180.200

E. ACQUISITION STRATEGY:

The JCM program was initiated under the provisions of streamlined acquisition principles, and therefore, the first major milestone review will be Milestone B. The J-8, Force Structure, Resources, and Assessment Directorate, HQDA, and the Chairman of the Overarching Integrated Product Team (OIPT) are working to support a schedule of March 2004 for Milestone B; the JCM program entering SDD at the system integration level, where the Army is responsible for risk mitigation and the design, development, fabrication, testing, and qualification of the JCM system. The SD&D and Low Rate Initial Production (LRIP) contractor will be selected through a limited competition with contract award scheduled closely following a successful Milestone B. Though JCM is Army lead, Department of the Navy (DON) pays: Navy unique costs; Navy test assets; and platform integration & testing for AH-1, H-60, and F/A-18.

R-1 SHOPPING LIST - Item No. 175

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**		PROGRAM ELEMENT 0205601N HARM Improvement			PROJECT NUMBER AND NAME A2211 Joint 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	0.859	11/03	9.397	11/04	Continuing	Continuing	
Ancillary Hardware Development	MIPR	AAMCOM Huntsville, AL				1.610	02/04	1.581	11/04	Continuing	Continuing	
Aircraft Integration	WX	Orlando, TSD		0.300	11/02	0.620	11/03	0.553	11/04	Continuing	Continuing	
Ship Integration	WX	NAWCAD/WD						8.390	11/04	Continuing	Continuing	
											0.000	
Systems Engineering	WX	NAWCAD/WD	1.232	2.938	10/02	3.701	11/03	3.750	11/04	Continuing	Continuing	
											0.000	
											0.000	
											0.000	
											0.000	
Award Fees	MIPR	AAMCOM Huntsville, AL				0.050	02/04	3.000	11/04	Continuing	Continuing	
Subtotal Product Development			1.232	5.108		6.840		26.671		Continuing	Continuing	
Remarks:												
Development Support	WX	NAWCAD/WD	1.374			0.575	11/03	0.319	11/04	Continuing	Continuing	
Software Development	WX	NAWCAD/WD				2.108	11/03	15.129	11/04	Continuing	Continuing	
Integrated Logistics Support	WX	NAWCAD/WD				0.343	11/03	0.390	11/04	Continuing	Continuing	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Support			1.374	0.000		3.026		15.838		Continuing	Continuing	
Remarks:												

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**			PROGRAM ELEMENT 0205601N HARM Improvement			PROJECT NUMBER AND NAME A2211 Joint 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/WX	0.185	1.000	11/02	2.476	05/04	7.055	11/04	Continuing	Continuing	
											0.000	
											0.000	
Test Assets	MIPR	AAMCOM Huntsville				0.198	02/04	31.490	11/04	Continuing	Continuing	
Tooling	MIPR/TBD	NAWCWD/Contractor		0.500	11/02						0.500	
											0.000	
											0.000	
Subtotal T&E			0.185	1.500		2.674		38.545		Continuing	Continuing	
Remarks:												
											0.000	
Government Engineering Support	WX	NAWCAD/WD	1.912	0.500	01/03	0.514	01/04	0.830	11/04	Continuing	Continuing	
Program Management Support	WX	NAWCAD/WD		0.501	11/02	0.620	01/04	0.841	11/04	Continuing	Continuing	
Travel	WX	NAVAIR/AAMCOM, Huntsville, A	0.125	0.050	10/02	0.075	01/04	0.095	10/04	Continuing	Continuing	
											0.000	
SBIR Assessment			0.039							Continuing	Continuing	
Subtotal Management			2.076	1.051		1.209		1.766		Continuing	Continuing	
Remarks:												
Total Cost			4.867	7.659		13.749		82.820		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 175

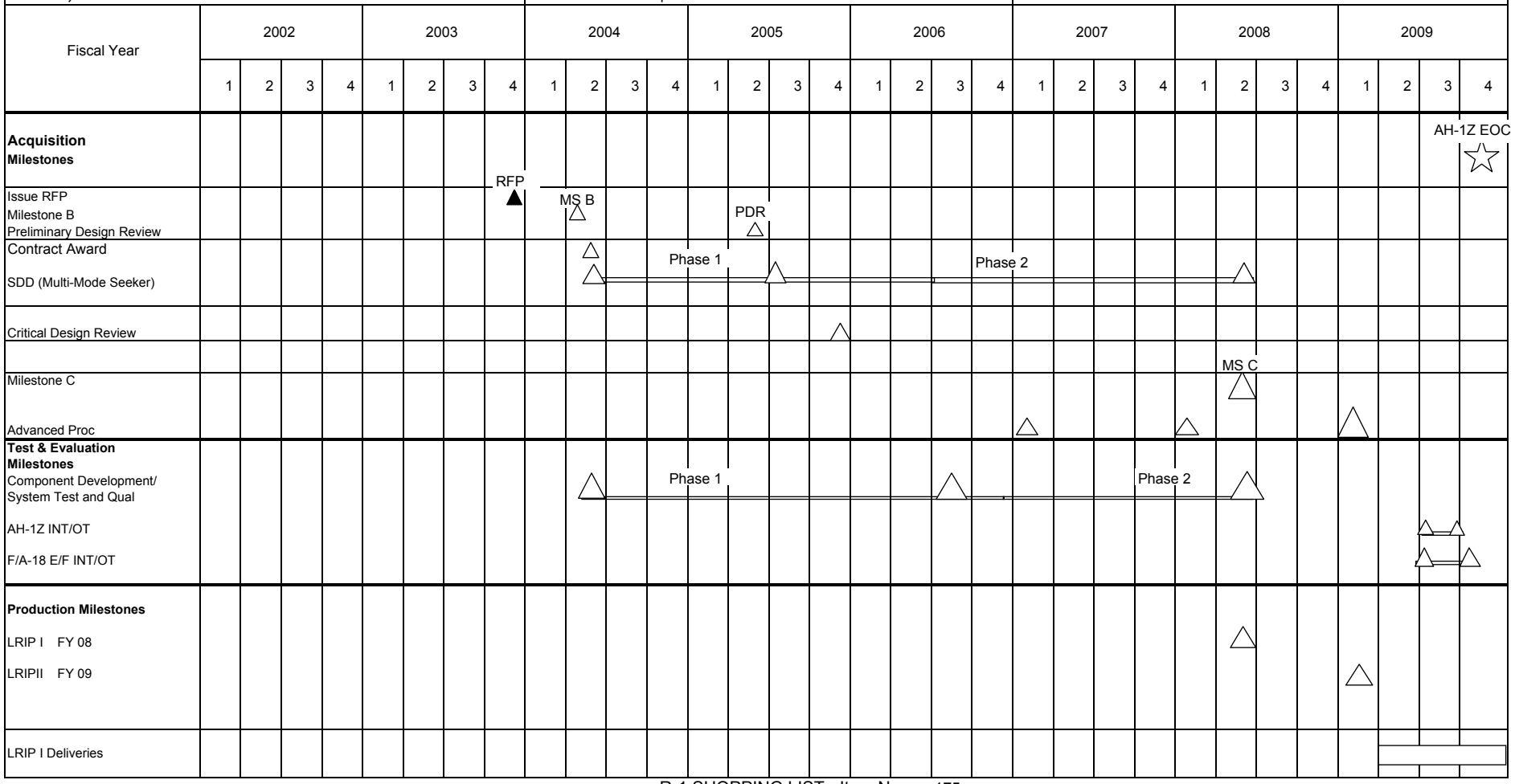
CLASSIFICATION:

EXHIBIT R4, Schedule Profile | DATE: **February 2004**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-7**

PROGRAM ELEMENT NUMBER AND NAME: 0205601N HARM Improvement

PROJECT NUMBER AND NAME: A2211 Joint Common Missile



R-1 SHOPPING LIST - Item No. 175

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

CLASSIFICATION:

Exhibit R-4a, Schedule Detail					DATE: **February 2004**			
APPROPRIATION/BUDGET ACTIVITY **RDT&BA-7**	PROGRAM ELEMENT 0205601N HARM Improvement				PROJECT NUMBER AND NAME A2211 Joint Common Missile			
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Issue RFP		4Q						
Milestone B (MSB)			2Q					
Contract Award			2Q					
Component Development/System Test and Qual Phase 1			2Q-4Q	1Q-4Q				
System Development Phase I (multi-mode seeker)			2Q-4Q	1Q-3Q				
Preliminary Design Review (PDR)				2Q				
System Development Phase II (multi-mode seeker)				2Q-4Q	1Q-4Q	1Q-4Q	1Q-2Q	
Critical Design Review (CDR)				4Q				
Component Development/System Test and Qual Phase 2					3Q-4Q	1Q-4Q	1Q-2Q	
Milestone C (MS C)							2Q	
Low-Rate Initial Production I (LRIP I)							2Q-4Q	1Q-4Q
Low-Rate Initial Production II (LRIP II)								1Q
Operational Testing (OT-IIA) FA/18 E/F								3Q
Operational Testing (OT-IIA) AH-1Z								3Q
EOC AH-1Z								4Q

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2004**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT NUMBER AND NAME 0205601N HARM Improvement				PROJECT NUMBER AND NAME A3056 Advanced Precision Kill Weapon System (APKWS)			
COST ($ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost			**4.673**	**12.504**	**12.502**			
RDT&E Articles Qty			**6**	**12**	**25**			

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The Advanced Precision Kill Weapon System (APKWS) is an Army led SDD program to develop a low cost Semi Active Laser (SAL) precision guidance section for existing 2.75 inch unguided rockets. DON participation began in FY04. APKWS 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. APKWS offers precision, maximum stored kills per aircraft sortie, minimum collateral damage potential, and increased effectiveness over legacy unguided rockets. The guidance package can be assembled with existing unguided rocket components. The Navy is developing a digital launcher to maximize the effectiveness of the APKWS .

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA - 7	0205601N HARM Improvement	A3056 Advanced Precision Kill Weapon System (APKWS)

B. Accomplishments/Planned Program

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost			4.673	12.504
RDT&E Articles Quantity				

FY04 - 05 Advanced Precision Kill Weapon System (APKWS) funding supports the Navy participation in SD&D with the Army. The Army is the program lead. The program will develop, test and qualify a laser guided 2.75-inch munitions for initial integration on Marine Corps rotary wing aviation. Funding will ensure Navy requirements are incorporated in the System Development and Demonstration contract. Participated with the Army to validate the Operational Requirements Document (ORD) and in Milestone B decision. FY04 component development, DT testing and technical analysis.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0205601N HARM Improvement	A3056 Advanced Precision Kill Weapon System (APKWS)

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2003	FY 2004	FY 2005
Previous President's Budget:		4.725	12.536
Current BES/President's Budget		4.673	12.504
Total Adjustments	0.000	-0.052	-0.032
Summary of Adjustments			
Congressional program reductions			
Congressional undistributed reductions		-0.052	
Congressional rescissions			
SBIR/STTR Transfer			
Economic Assumptions			-0.027
Reprogrammings			
Congressional increases			
Reprioritizations			-0.005
Subtotal		-0.052	-0.032

Schedule:

Not Applicable.

Technical:

Not Applicable

R-1 SHOPPING LIST - Item No. 175

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0205601N HARM Improvement	A3056 Advanced Precision Kill Weapon System (APKWS)

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
PANMC - (BLI 015100) Airborne Rockets, All Types *				3.5	7.0	10.5			
Related RDT&E: U. S. Army P.E. 0604802A PROJ D705 Advanced Precision Weapon System	19.88	42.112	9.008	5.597	4.605			TBD	
Related WPN: U. S. Army P.E. 0203802A PROJ D786			5.013	10.05	8.986	23.726	22.551	TBD	

* Planned procurement strategy for the APKWS 2.75-inch guidance sections within the current Airborne Rockets, All Types PANMC funding profile

E. ACQUISITION STRATEGY:

- Department of Army (DOA) ACAT II program. Entered SDD in 2nd qtr FY03. DON acquisition strategy is to contract unique requiremetns & Test Assets with the DOA. Platform integrtation is on AH-1W.

R-1 SHOPPING LIST - Item No. 175

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**		PROGRAM ELEMENT 0205601N HARM Improvement			PROJECT NUMBER AND NAME A3056 Advanced Precision Kill Weapon System (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	MP	AMCOM, Huntsville				0.505	02/04	3.800	10/04	0.650	4.955	
Ancillary Hardware Development	WX	NAWCAD						1.850	10/04	0.000	1.850	
Aircraft Integration	WX	NAWCWD				0.200	02/04	0.650	11/04	0.550	1.400	
											0.000	
											0.000	
Systems Engineering	WX	NSWC Indian Head						0.444	11/04	0.653	1.097	
											0.000	
Training Development	WX	NSWC Indian Head						0.145	11/04	0.345	0.490	
											0.000	
											0.000	
											0.000	
Subtotal Product Development			0.000	0.000		0.705		6.889		2.198	9.792	
Remarks:												
											0.000	
											0.000	
Integrated Logistics Support	WX	NSWC, Indian Head						0.300	11/04	0.400	0.700	
Configuration Management	WX	NSWC, Indian Head						0.096	11/04	0.135	0.231	
Technical Data	WX	NSWC, Indian Head						0.140	11/04	0.100	0.240	
											0.000	
											0.000	
											0.000	
Subtotal Support			0.000	0.000		0.000		0.536		0.635	1.171	
Remarks:												

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**			PROGRAM ELEMENT 0205601N HARM Improvement			PROJECT NUMBER AND NAME A3056 Advanced Precision Kill Weapon System (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	WX	NAWC AD/WD				0.923	02/04	1.455	11/04	1.200	3.578	
Operational Test & Evaluation	WX	NAWC AD/WD								4.493	4.493	
											0.000	
Test Assets	MP	AMCOM, Huntsville				1.895	02/04	1.450	10/04	1.260	4.605	
											0.000	
											0.000	
											0.000	
Subtotal T&E			0.000	0.000		2.818		2.905		6.953	12.676	
Remarks:												
								0.000		0.000	0.000	
Government Engineering Support	WX	NAWCAD/WD				0.755	10/03	1.650	10/04	2.020	4.425	
Program Management Support	WX	NSWC, Indian Head				0.329	10/03	0.400	10/04	0.528	1.257	
Travel	WX	NSWC/NAWCAD/WD				0.066	10/03	0.124	10/04	0.168	0.358	
											0.000	
											0.000	
Subtotal Management			0.000	0.000		1.150		2.174		2.716	6.040	
Remarks:												
Total Cost			0.000	0.000		4.673		12.504		12.502	29.679	
Remarks:												

R-1 SHOPPING LIST - Item No. 175

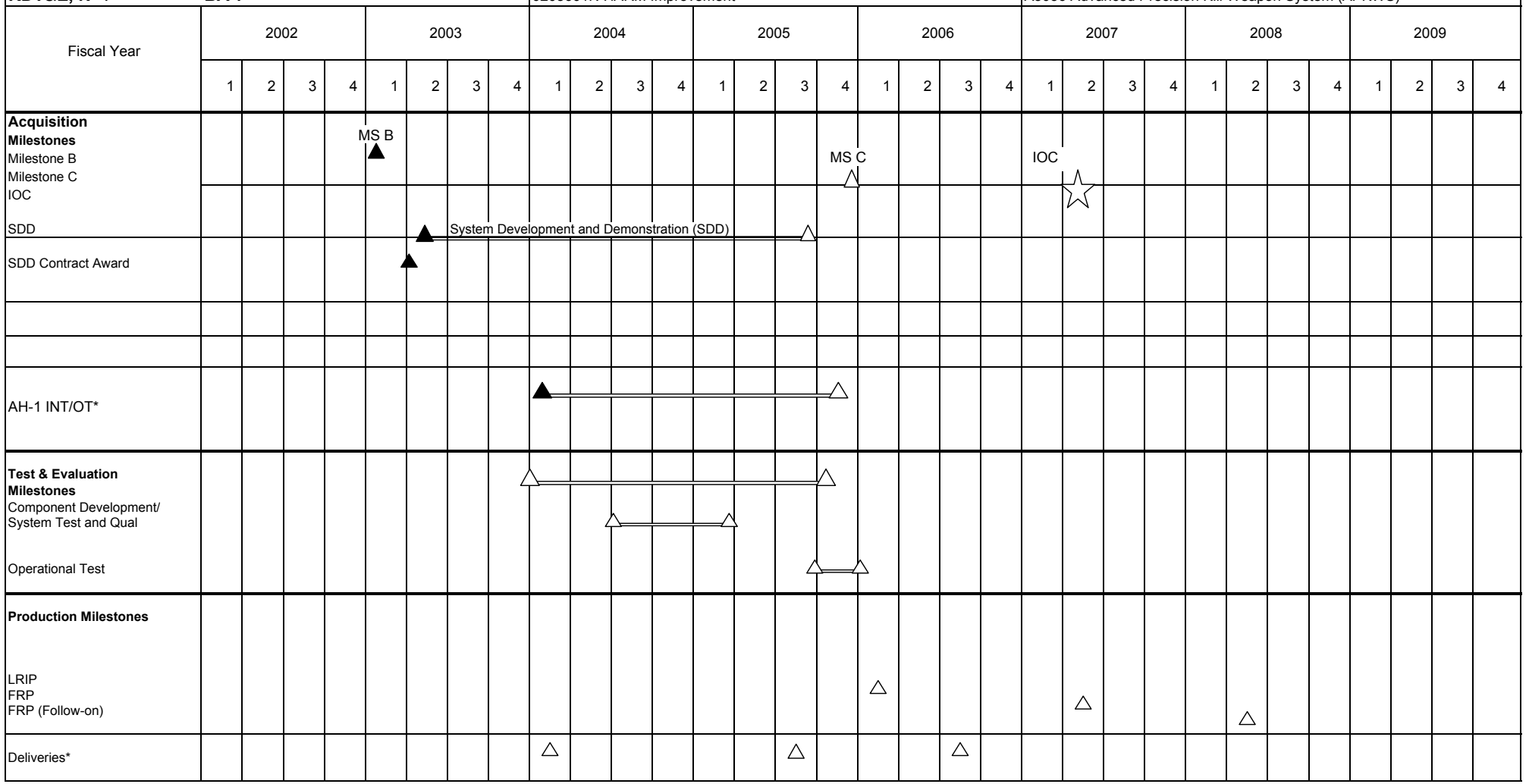
CLASSIFICATION:

EXHIBIT R4, Schedule Profile | DATE: **August 2002**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-7**

PROGRAM ELEMENT NUMBER AND NAME: 0205601N HARM Improvement

PROJECT NUMBER AND NAME: A3056 Advanced Precision Kill Weapon System (APKWS)



R-1 SHOPPING LIST - Item No. 175

* Navy only milestones. All remaining are Department of Army (DOA)

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **February 2004**		
APPROPRIATION/BUDGET ACTIVITY **RDT&BA-7**	PROGRAM ELEMENT 0205601N HARM Improvement				PROJECT NUMBER AND NAME A3056 Advanced Precision Kill Weapon System (APKWS)			
Schedule Profile	FY 2002	FY 2003*	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Milestone II (MSB)		1Q						
SDD Contract (Army)*		2Q						
System Development		2Q-4Q	1Q-4Q	1Q-3Q				
Milestone C (MS C)				4Q				
Operational Testing (OT-IIA)				4Q				
Start Low-Rate Initial Production I (LRIP I)					1Q			
IOC						2Q		
Full Rate Production						2Q		
Full Rate Production Follow On							2Q	
AH-1 INT/OT			1Q-4Q	1Q-4Q				
Component Development/System Test and Qual		4Q	1Q-4Q	1Q-4Q				
* US Army SD&D activities begin in FY 2003; Navy participation begins in FY 2004								

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2004**	
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				**4.842**				
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.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA - 7	0205601N HARM Improvement	A3057 Common Defense Weapons System

B. Accomplishments/Planned Program

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost				4.842
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/CH-53D/H-60/V-22 helicopters.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0205601N HARM Improvement	A3057 Common Defense Weapons System

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2003	FY 2004	FY 2005
Previous President's Budget:	0.000	0.000	4.838
Current BES/President's Budget	0.000	0.000	4.842
Total Adjustments	0.000	0.000	0.004
Summary of Adjustments			
Congressional program reductions			
Congressional undistributed reductions			
Congressional rescissions			
SBIR/STTR Transfer			
Economic Assumptions			0.004
Reprogrammings			
Congressional increases			
Reprioritizations			
Subtotal	0.000	0.000	0.004

Schedule:

Not Applicable.

Technical:

Not Applicable

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
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

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
APN-5, P-1 Proc. Line Item No. 052800, M3M .50 Cal ATAV	5.862	5.89	0	0	0	0	0		
APN -5, P-1 Proc. Line Item No. 058100	0	0	0	13.752	13.744	0	0		

E. ACQUISITION STRATEGY:

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

R-1 SHOPPING LIST - Item No. 175

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**			PROGRAM ELEMENT 0205601N HARM Improvement			PROJECT NUMBER AND NAME 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	PID	FN Herstal (Belgium)						2.000	10/04		2.000	
Training Development	WX	NAVAIR						0.075	10/04		0.075	
Aircraft Integration	WX	NAWCAD/WD						1.283	10/04		1.283	
Systems Engineering	WX	NAWCAD/NAWCWD						0.140	10/04		0.140	
Subtotal Product Development								3.498			3.498	
Remarks:												
Development Support	WX	NAWCAD/NAWCWD						0.140	10/04		0.140	
Integrated Logistics Support	WX	NAWCWD						0.074	10/04		0.074	
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	
Subtotal Support								0.339			0.339	
Remarks:												

R-1 SHOPPING LIST - Item No. 175

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)					DATE: **February 2004**						
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**		PROGRAM ELEMENT 0205601N HARM Improvement			PROJECT NUMBER AND NAME 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	
Test Assets	TBD	TBD						0.100	10/04		0.100	
Subtotal T&E								0.694			0.694	
Remarks:												
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	
Subtotal Management								0.311			0.311	
Remarks:												
Total Cost								4.842			4.842	
Remarks:												

CLASSIFICATION:

EXHIBIT R4, Schedule Profile | DATE: **February 2004**

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/CH-53D/H-60/V-22 Integration																																
Test & Evaluation Milestones System Qualification testing																																

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

CLASSIFICATION:

Exhibit R-4a, Schedule Detail					DATE: **February 2004**			
APPROPRIATION/BUDGET ACTIVITY **RDT& BA-7**	PROGRAM ELEMENT 0205601N HARM Improvement				PROJECT NUMBER AND NAME A3057 Common Defense Weapons System (CDWS)			
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Contract Award								
Advanced Technology Demonstration				1Q-4Q				
H-1/H-46/CH-53D/H-60/V-22 Integration				1Q-4Q				
System Qualification Testing				4Q				

R-1 SHOPPING LIST - Item No. 175

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification									DATE: **February 2004**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**						R-1 ITEM NOMENCLATURE **0205604N Tactical Data Links**					
COST ($ in Millions)	Prior Years Cost	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program	
Total PE Cost	**324.123**	**40.024**	**43.971**	**18.977**	**31.084**	**24.866**	**25.370**	**25.884**	**CONT**	**CONT**	
1743 Link-16 Improvements	**30.556**	**14.376**	**11.509**	**3.647**	**2.381**	**0.000**	**0.000**	**0.000**	**0.000**	**62.469**	
2126 ATDLS Integration	**293.567**	**25.648**	**32.462**	**15.330**	**28.703**	**24.866**	**25.370**	**25.884**	**CONT**	**CONT**	
Quantity of RDT&E Articles	**13**	**9**	**8**	**1**						**31**	

(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 new U.S. Navy tactical data link (TDL) systems, including Link-16 and Link-22. Link-16 Joint Range Extension (JRE) transfers Link-16 data via satellite communications and other non-RF paths. High Throughput Link-16 provides improved data transmission rates by altering the modulation characteristics of Link-16. Link-22 will pass TADIL-J data elements beyond the line-of-sight using a Time Division Multiple Access (TDMA) protocol and improved waveform with existing high-frequency (HF) and ultra-high-frequency (UHF) radios. This project allows more effective employment of fleet units by increasing timeliness, accuracy, and content of tactical data transfer and eliminate line-of-sight transmission limitations thereby improving operational flexibility. The Common Data Link Monitoring System (CDLMS) will be upgraded to Next Generation Command and Control Processor (NGC2P) to provide higher CPU speeds, update rate and memory capacity required for advanced multi-TADIL processing functions. NGC2P Increment 1 (now referred to as NGC2P) will update CDLMS with advanced processors required to support critical data link functions including Link-22 and Link-16 JRE.

(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.

R-1 SHOPPING LIST - Item No. 176

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification	DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	R-1 ITEM NOMENCLATURE **0205604N Tactical Data Links**

(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 (LCI referred to as Common Link Integration Processing (CLIP) in FY04 and out with funding realigned from Project X1743 Link-16 Improvements), Dynamic Network Management and the Joint Interface Control Officer Support System (JSS). The Common Link Integration Processing (CLIP) concept will introduce open system software required to reduce life cycle support costs and COTS technology refresh objectives and high throughput Link-16. The CLIP development concept addresses fundamental interoperability and affordability of tactical data link capabilities through cooperative development program under both USN and USAF sponsorship. The principal goal of CLIP is to develop a multi-TDL software capability that can be utilized by multiple platforms (aircraft, ships, and ground) for all services. Dynamic Network Management will provide automatic reconfiguration of Link-16 networks that respond instantly to emergent warfighter requirements in the field. Joint Interface Control Officer (JICO) Support System (JSS) will be the standard joint service toolset to monitor and control Multi-TADIL network architectures. The manual DNM capability developed under DNM will be integrated into the JSS host system.

(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.

(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.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: February 2004			
APPROPRIATION/BUDGET ACTIVITY **RDT&E,N/BA-7**	PROGRAM ELEMENT NUMBER AND NAME **0205604N Tactical Data Links**					PROJECT NUMBER AND NAME **1743 Link-16 Improvements**					
COST ($ in Millions)	Prior Years Cost	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program	
Project Cost	**30.556**	**14.376**	**11.509**	**3.647**	**2.381**					**62.469**	
RDT&E Articles Qty		**9**	**6**							**15**	

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

(U) Link-16 Improvements extends Link-16 technological improvements to existing and new U.S. Navy tactical data link (TDL) systems, including Link-16 and Link-22. Link-16 Joint Range Extension (JRE) transfers Link-16 data via satellite communications and other non-RF paths. High Throughput Link-16 provides improved data transmission rates by altering the modulation characteristics of Link-16. Link-22 will pass TADIL-J data elements beyond the line-of-sight using a Time Division Multiple Access (TDMA) protocol and improved waveform with existing high-frequency (HF) and ultra-high-frequency (UHF) radios. This project allows more effective employment of fleet units by increasing timeliness, accuracy, and content of tactical data transfer and eliminate line-of-sight transmission limitations thereby improving operational flexibility. The Common Data Link Monitoring System (CDLMS) will be upgraded to Next Generation Command and Control Processor (NGC2P) to provide higher CPU speeds, update rate and memory capacity required for advanced multi-TADIL processing functions. NGC2P Increment 1 (now referred to as NGC2P) will update CDLMS with advanced processors required to support critical data link functions including Link-22 and Link-16 JRE.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E,N/BA-7	**0205604N Tactical Data Links**	**1743 Link-16 Improvements**

(U) B. Accomplishments/Planned Program

CDLMS / LINK-22 PROGRAM ENHANCEMENTS	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	6.994	0.980	
RDT&E Articles Quantity	9		

FY 03 Accomplishments: Completed MTP Prototype development. Multi-TADIL Processor (MTP) Prototype includes 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. Laboratory testing completed for the MTP Prototypes.
FY 04 Plan: Incorporate enhanced capabilities into NGC2P design. Complete design assessment of MTP Prototype and incorporate results into CDR.

CDLMS / LINK-22 Design and Test	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	3.989		
RDT&E Articles Quantity			

FY 03 Accomplishments: Continued CDLMS/Link-22 design. Conducted System Requirements Review (SRR) and Preliminary Design Review (PDR). Incorporated results from the MTP Prototype onto NGC2P system design requirements.

NGC2P CAPABILITY	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	3.393	10.529	3.647
RDT&E Articles Quantity		6	

FY 03 Accomplishments: Commenced development of NGC2P capability. Commenced development of NGC2P software. Commenced development of CDLMS field change and technical manuals and training curricula updates.
FY 04 Plan: Continue development of NGC2P 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. Conduct development testing on the adjunct processor units to demonstrate JRE, Dual Net Multi-Frequency Link-11, GCCS-M Interface and Link-22 capabilities. Continue development of CDLMS field change and technical manual development. Continue development of training curricula update.
FY 05 Plan: Continue development of NGC2P capability and development of training curricula. Conduct combat systems integration testing, link certification testing, TECHEVAL/OPEVAL and battlegroup integration testing of NGC2P capability.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E,N/BA BA-7	**0205604N Tactical Data Links**	**1743 Link-16 Improvements**

(U) C. PROGRAM CHANGE SUMMARY:

(U) Funding:	FY 2003	FY 2004	FY 2005
FY 04 President's Budget	14.832	14.412	6.177
FY 05 President's Budget	14.376	11.509	3.647
Total Adjustments	-0.456	-2.903	-2.530
Summary of Adjustments			
Issue 66556 SBIR	-0.139		
Issue 68849 FY 2003 Update	-0.317		
Issue 67111 Realignment of CLIP funding to X2126		-2.753	-2.495
Issue 66961 SPAWAR Service Center Cost Center Adjustments		-0.020	-0.018
Issue 68041 Management Improvements (Section 8094)		-0.031	
Issue 68066 Efficiencies/Revised Economic Assumptions		-0.099	
Issue 67767 NWCF Rates - SPAWAR SSC Rates			-0.015
Issue 69025 WCF - R&D - SPAWAR - PBD 430			-0.007
Issue 69045 PBD 426 Rates - SSC			0.017
Issue 69492 PBD - 604 Inflation			-0.010
Issue 69512 PBD - 604 non-purchase inflation			-0.002
Total Adjustments	-0.456	-2.903	-2.530

Funding has been realigned within the Program Element from Project 1743 to 2126 in FYs 04 and beyond in order to manage and execute the Common Link Integration Processing (CLIP) Program under a single project.

(U) Schedule:

The CDR for NGC2P Increment 1 (now referred to as NGC2P) has accelerated from 2nd quarter FY05 to 2nd quarter FY04 and NGC2P IOC accelerated from 3rd quarter FY 07 to 1st quarter FY06. NGC2P Increment 2 (now referred to as CLIP) is shown in the PE 0205604N/2126 budget schedule.

(U) Technical:

NGC2P development has been re-baselined to reflect Navy priorities for tactical data link development. As a result, NGC2P development will focus on adding capability within the current software architecture through the addition of an adjunct processor into the CDLMS. As a result of this change in technical approach, NGC2P CDR has been advanced one year. NGC2P will upgrade existing CDLMS units to add JRE, Dual-Net Multi-Frequency Link-11, GCCS-M Interface, and Link 22. IOC for NGC2P has been advanced by 18 months to 1st quarter FY06.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY **RDT&E,N/BA-7**	PROGRAM ELEMENT NUMBER AND NAME **0205604N Tactical Data Links**	PROJECT NUMBER AND NAME **1743 Link-16 Improvements**	

(U) D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
OPN Line 2614 ATDLS	9.004	16.063	2.386	13.237	11.562	11.795	12.033	Continuing	Continuing

(U) E. ACQUISITION STRATEGY:

Next Generation Command and Control Processor and Multi -TADIL Processor Prototype are utilizing existing cost plus contracts.

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E,N/BA-7**			PROGRAM ELEMENT **0205604N Tactical Data Links**			PROJECT NUMBER AND NAME **1743 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
NILE Subphase 2	CPIF	Logicon, San Diego, CA	3.171								3.171	3.171
NILE LLC Dev	CPIF	VIASAT, San Diego, CA	0.500								0.500	0.500
Link-22 Engineering/Integration	WX	SPAWARSYSCEN, San Diego, CA	3.547								3.547	3.547
Link-22 Integration	CPFF	Logicon, San Diego, CA	0.116								0.116	0.116
Link-22 Network Design	WX	NCTSI, San Diego, CA	0.690								0.690	0.690
Command and Control Processor (C2P)	Various	Various	2.377								2.377	2.377
Multi-TADIL Capability MTC	Various	Various	1.696								1.696	1.696
Next Generation C2P Engineering/Integration	WX	SPAWARSYSCEN, San Diego, CA	2.000	2.550	11/02	2.550	11/03	1.000	Various	Continuing	Continuing	Continuing
Next Generation C2P Engineering/Integration	Various	Various		0.686	Various	1.231	Various	0.329	Various	Continuing	Continuing	Continuing
Next Generation C2P GFE	Various	Various	0.560	0.236	Various						0.796	0.796
Next Generation C2P Design/Dev	CPFF	APC, Austin, TX	6.313	1.700	Various						8.013	8.013
Next Generation C2P Design/Dev TDA	CPFF	APL/JHU, Laurel, MD	7.585	3.453	Various						11.038	11.038
Next Generation C2P Design/Dev	CPFF	Northrop Grumman IT, Reston, VA		2.024	07/03	4.500	Various	0.250	Various	Continuing	Continuing	Continuing
Subtotal Product Development			28.555	10.649		8.281		1.579				

Remarks:

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E,N/BA-7**			PROGRAM ELEMENT **0205604N Tactical Data Links**			PROJECT NUMBER AND NAME **1743 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
Development Support												
Software Development												
Integrated Logistics Support												
Configuration Management												
Technical Data												
Studies & Analyses												
GFE												
Award Fees												
Subtotal Support												

Remarks:

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 3)								DATE: **February 2004**			
APPROPRIATION/BUDGET ACTIVITY **RDT&E,N/BA-7**		PROGRAM ELEMENT **0205604N Tactical Data Links**				PROJECT NUMBER AND NAME **1743 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
NGC2P Test & Evaluation	WX	SPAWARSYSCEN, San Diego, CA	0.731	2.100	Various	1.908	Various	1.395	Various	Continuing	Continuing	Continuing
NGC2P Test & Evaluation	WX	NCTSI, San Diego, CA				0.270	Various	0.298	Various	Continuing	Continuing	Continuing
Subtotal T&E			0.731	2.100		2.178		1.693				
Remarks:												
Engineering Support and Travel	Various	Various	1.270	1.627	Various	1.050	Various	0.375	Various	Continuing	Continuing	Continuing
Subtotal Management			1.270	1.627		1.050		0.375				
Remarks:												
Total Cost			30.556	14.376		11.509		3.647				
Remarks:												

R-1 SHOPPING LIST - Item No. 176

CLASSIFICATION:

EXHIBIT R4, Schedule Profile | DATE: **February 2004**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E,N/BA-7**

PROGRAM ELEMENT NUMBER AND NAME: **0205604N Tactical Data Links**

PROJECT NUMBER AND NAME: **1743 Link-16 Improvements**

Fiscal Year	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
Program Milestones NGC2P													IOC △															
Engineering Milestones NGC2P		SRR △		PDR △		CDR △																						
Test & Evaluation Milestones MLTT																												
MTP Prototype	Lab Test △			Lab Test △																								
NGC2P							DT △			CSIT △	Link Cert △	TECHEVAL/OPEVAL △ BGIT △																
Contract Milestones LLC		LCC LRIP △																										
NGC2P								NGC2P △																				

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **February 2004**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E,N/BA-7**	PROGRAM ELEMENT **0205604N Tactical Data Links**				PROJECT NUMBER AND NAME **1743 Link-16 Improvements**		
Schedule Profile	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
MTP Prototype Lab Test Commenced	1Q						
NGC2P SRR	2Q						
LLC LRIP	2Q						
NGC2P PDR	4Q						
MTP Prototype Lab Test Completed	4Q						
NGC2P CDR		2Q					
NGC2P DT		3Q					
NGC2P Production Contract Award		4Q					
NGC2P CSIT			2Q				
NGC2P TECHEVAL/OPEVAL			3Q				
NGC2P Link Certification			3Q				
NGC2P BGIT			4Q				
NGC2P IOC				1Q			

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: February 2004			
APPROPRIATION/BUDGET ACTIVITY **RDT&E,N/BA-7**	PROGRAM ELEMENT NUMBER AND NAME **0205604N Tactical Data Links**					PROJECT NUMBER AND NAME **2126 ATDLS Integration**					
COST ($ in Millions)	Prior Years Cost	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program	
Project Cost	**293.567**	**25.648**	**32.462**	**15.330**	**28.703**	**24.866**	**25.370**	**25.884**	**CONT**	**CONT**	
RDT&E Articles Qty	**13**		**2**	**1**						**16**	

(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 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 (LCI referred to as Common Link Integration Processing (CLIP) in FY04 and out with funding realigned from Project X1743 Link-16 Improvements), Dynamic Network Management and the Joint Interface Control Officer Support System (JSS). The Common Link Integration Processing (CLIP) concept will introduce open system software required to reduce life cycle support costs and COTS technology refresh objectives and high throughput Link-16. The CLIP development concept addresses fundamental interoperability and affordability of tactical data link capabilities through cooperative development program under both USN and USAF sponsorship. The principal goal of CLIP is to develop a multi-TDL software capability that can be utilized by multiple platforms (aircraft, ships, and ground) for all services. Dynamic Network Management will provide automatic reconfiguration of Link-16 networks that respond instantly to emergent warfighter requirements in the field. Joint Interface Control Officer (JICO) Support System (JSS) will be the standard joint service toolset to monitor and control Multi-TADIL network architectures. The manual DNM capability developed under DNM will be integrated into the JSS host system.

(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.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E,N/BA-7	**0205604N Tactical Data Links**	**2126 ATDLS Integration**

(U) B. Accomplishments/Planned Program

F/A-18 MIDS	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	14.347	2.937	
RDT&E Articles Quantity			

FY 03 Accomplishments: Completed F/A-18 MIDS OPEVAL. Conducted F/A-18 system interoperability certification testing. Conducted F/A-18 MIDS OPEVAL Verification of Correction of Deficiencies (VCD).
FY 04 Plan: Conduct F/A-18 MIDS VCD of remaining deficiencies identified during OPEVAL.

MIDS on Ship (MOS)	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	2.491		
RDT&E Articles Quantity			

FY 03 Accomplishments: Completed MIDS on Ship developmental testing.

TADIL-J System Engineering	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	2.341		
RDT&E Articles Quantity			

FY 03 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, time critical strike, and support integration concepts for additional aircraft.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E,N/BA-7	**0205604N Tactical Data Links**	**2126 ATDLS Integration**

(U) B. Accomplishments/Planned Program

C2P Performance Upgrades	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	1.173		
RDT&E Articles Quantity			

FY 03 Accomplishments: Completed Performance Upgrades including C2P Model 5 improvements, Common Data Link Management System (CDLMS) development, and Satellite-TADIL-J development.

Common Link Integration Processing (CLIP) (LCI)	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	2.110	6.620	2.495
RDT&E Articles Quantity			

FY 03 Accomplishments: Developed program specifications, requirements and documentation including contract request for proposal, statement of work, CDRLs and systems requirements document.
FY 04 Plan: Commence development of CLIP to provide a common interpretation of data link message standards and to minimize interoperability issues while reducing platform integration costs through a common software solution. Conduct CLIP Link-16/JRE Preliminary Design Review.
FY 05 Plan: Continue development of CLIP Link-16/Joint Range Extension capability and commence development of CLIP Variable Message Forwarding (VMF) capability. Perform platform integration testing of CLIP Link-16/Joint Range Extension capability on air platforms. Conduct CLIP Link-16/JRE Critical Design Review. Conduct CLIP VMF Preliminary Design Review.

Dynamic Network Management	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	3.186	15.833	8.635
RDT&E Articles Quantity		1	

FY 03 Accomplishments: Commenced Dynamic Network Management (DNM) development to provide real-time reconfiguration of Link-16 networks and dynamic reallocation of network capacity to meet emergent warfighter requirements in the field as operations evolve. Supported 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 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, test and evaluation 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. Conduct Critical Design Review. Conduct development test on an interim JSS unit to test manual DNM technology.
FY 05 Plan: Continue 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. 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 DNM integrated logistics support products including system-operating procedures.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY **RDT&E,N/BA-7**	PROGRAM ELEMENT NUMBER AND NAME **0205604N Tactical Data Links**	PROJECT NUMBER AND NAME **2126 ATDLS Integration**

(U) B. Accomplishments/Planned Program

Joint Interface Cont. Off. Supt. Sys. (JSS)	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		7.072	4.200
RDT&E Articles Quantity		1	1

FY 04 Plan: Develop software to monitor and control multi-TADIL network architectures and acquire test article to support development. Provides Navy funding share of the JSS multi-service development effort. Conduct Preliminary Design Review (PDR) and Critical Design Review (CDR).
FY 05 Plan: Continue software development and perform laboratory integration testing on engineering development model.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E,N/BA-7	**0205604N Tactical Data Links**	**2126 ATDLS Integration**

(U) C. PROGRAM CHANGE SUMMARY:

(U) Funding:	FY 2003	FY 2004	FY 2005
FY 04 President's Budget	26.782	30.114	12.912
FY 05 President's Budget	25.648	32.462	15.330
Total Adjustments	-1.134	2.348	2.418
Summary of Adjustments			
Issue 65590 Federal Technology Transfer	-0.011		
Issue 66556 SBIR	-0.374		
Issue 68849 FY 2003 Update	-0.749		
Issue 67111 Realignment of CLIP funding to X2126		2.753	2.495
Issue 66961 SPAWAR Service Cost Center Adjustments		-0.033	-0.016
Issue 68041 Management Improvements (Section 8094)		-0.087	
Issue 68060 FFRDC Reduction (Section 8029)		-0.006	
Issue 68066 Efficiencies/Revised Econ Assumption (Section 8126)		-0.279	
Issue 67767 NWCF Rates - SPAWAR SSC Rates			-0.014
Issue 69025 WCF - R&D - SPAWAR - PBD 430			-0.007
Issue 69045 PBD 426 Rates - SSC			0.016
Issue 69492 PBD-604 Inflation			-0.041
Issue 69512 PBD 604 non-purchase inflation			-0.009
Issue 69650 P07 Technical Adjustments			-0.006
Total Adjustments	-1.134	2.348	2.418

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.

Funding was realigned within the Program Element from Project 1743 to 2126 in FYs 04 and beyond in order to manage and execute the Common Link Integration Processing (CLIP) Program under a single project.

(U) Schedule: MIDS MS III corrected to read 4th quarter vice 1st quarter FY 2003. MS III was achieved for Air Force MIDS LVT (1) in September 2003. MS III for Navy MIDS LVT (1) was delayed from September 2003 to April 2004 for the resolution of four critical operational issues. The LCI schedule has been rebaselined to reflect the CLIP program schedule. Two OPEVAL Verification of Correction of Deficiencies (VCD) were scheduled for MIDS F/A-18. MIDS on Ship TECHEVAL and OPEVAL no longer required due to the program being included under the MIDS Program for MS III decision with F/A-18 as lead platform. MIDS on Ship DT-III-B scheduled in 1st quarter FY 2004 to test Block Cycle 1 production software. DNM CDR slipped from 2nd quarter FY 2004 to 3rd quarter FY 2004 due to the incorporation of additional program requirements. DT event scheduled for DNM in 4th quarter of FY 2004 to test manual DNM capability on interim JSS unit.
(U) Technical: The Low Cost Integration Program was combined with a portion of the Next General Command and Control Processing (NGC2P) Program to develop a single common data link integration solution for both ship and air platforms and is referred to as the Common Link Integration Processing (CLIP) Program.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E,N/BA-7	**0205604N Tactical Data Links**	**2126 ATDLS Integration**

(U) D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
APN LINE LI 052500 F/A-18	37.937	46.580	48.949	41.254	46.327	47.997	48.915	Continuing	Continuing
RDT&E,DA	10.122	10.633	18.536	18.797	19.064	19.581	20.058	Continuing	Continuing
OPN LI 2614 ATDLS	9.004	16.063	2.386	13.237	11.562	11.795	12.033	Continuing	Continuing

SCN - Funding for ATDLS hardware is not separately identified in the SCN budget exhibits.
RELATED RDT&E:
PE 0604771D/P771 - Link-16: System development and demonstration for a Joint Tactical Data Link (TDL).
PE 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. For Common Link Integration Processing (CLIP), a competitive contract will be awarded to develop a single common data link integration solution that can be configured to satisfy a broad-range of platforms. The Air Force was designated as the acquisition executive for JICO Support System (JSS), and will award a competitive contract for software development and integration. The Dynamic Network Management Network Controller Technology will be incorporated into JSS Block 1 and willl utilize the competitive contract for JSS. Remaining Dynamic Network Management development efforts will utilize existing development contracts with NGIT, DLS and BAE.
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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1) | DATE: **February 2004**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E,N/BA-7** | PROGRAM ELEMENT: **0205604N Tactical Data Links** | PROJECT NUMBER AND NAME: **2126 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
MIDS F/A-18 Integration	WX	Various	142.970	7.260	Various	1.217	Various				151.447	151.447
TADIL-J System Engineering	WX	SPAWARSYSCEN, 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	2.000	12/02						15.944	15.944
MIDS on Ship	Various	Various	44.240	0.091	Various						44.331	44.331
Performance Upgrades	WX	SPAWARSYSCEN, San Diego, CA	13.143	1.070	Various						14.213	14.213
Performance Upgrades	Various	Various	5.236								5.236	5.236
Air Defense System Integrator	CPFF	APC, Austin, TX	2.059								2.059	2.059
Dual Net Link-11	WX	Various	1.866								1.866	1.866
Korean Air Defense Sys Impr	CPFF	JHU/APL, Laurel, MD	0.900								0.900	0.900
DNMFL Prototypes	Various	Various	2.127								2.127	2.127
Common Link Processing Program (CLIP) Dev	WX	SPAWARSYSCEN, San Diego, CA				0.568	11/03	0.924	11/04	Continuing	Continuing	Continuing
Common Link Processing Program (CLIP) Dev	Various	Various		1.946	Various	1.137	Various	0.250	Various	Continuing	Continuing	Continuing
Common Link Processing Program (CLIP) SW Dev	CPFF	TBD				4.220	6/04	1.000	11/04	Continuing	Continuing	Continuing
DNM System Engineering	WX	SPAWARSYSCEN, San Diego, CA		0.500	11/02	3.173	11/03	1.921	11/04	Continuing	Continuing	Continuing
DNM Development	CPFF	Northrop Grumman IT, Reston, VA		1.840	2/03	0.696	11/03				2.536	2.536
DNM NCT Development	CPFF	ESC Hanscom AFB, MA/TBD				5.759	6/04	0.150	11/04			
DNM Development	MIPR	Warner Robbins AFB, GA		0.600	Various	0.161	03/04	0.100	11/04	Continuing	Continuing	Continuing
DNM Development	CPIF	BAE Systems, Wayne, NJ (DLS)				0.117	1/04	0.400	11/04	Continuing	Continuing	Continuing
DNM Systems Engineering	Various	Various				1.194	Various	1.600	11/04	Continuing	Continuing	Continuing
JSS Software Dev and Integration	CPFF	ESC Hanscom AFB, MA/TBD				5.564	6/04	3.400	11/04	Continuing	Continuing	Continuing
JSS Test Articles	CPFF	ESC Hanscom AFB, MA/TBD				0.771	6/04	0.596	11/04		1.367	1.367
JSS Systems Engineering	CPFF	Galaxy Scientific, Arlington, VA				0.214	11/03	0.204	11/04	Continuing	Continuing	Continuing
JSS Systems Engineering	WX	SPAWARSYSCEN, San Diego, CA				0.193	11.03					
Subtotal Product Development			257.220	17.459		24.984		10.545				

Remarks: The Low Cost Integration (LCI) Program has been renamed to the Common Link Integration Processing (CLIP) Program.

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E,N/BA-7**			PROGRAM ELEMENT **0205604N Tactical Data Links**			PROJECT NUMBER AND NAME **2126 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
Development Support												
Software Development												
Integrated Logistics Support												
Configuration Management												
Technical Data												
Studies & Analyses												
GFE												
Award Fees												
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	

Remarks:

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 3)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E,N/BA-7**			PROGRAM ELEMENT **0205604N Tactical Data Links**			PROJECT NUMBER AND NAME **2126 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	3.190	Various	0.496	Various				12.774	12.774
MIDS F/A-18 T&E	Various	Various	7.863	2.477	Various	1.197	Various				11.537	11.537
MIDS on ShipT&E	PD	OPTEVFOR, Norfolk, VA	0.092								0.092	0.092
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
Common Link Integration Processing (CLIP) T&E	WX	SPAWARSYSCEN, San Diego, CA						0.321	11/04	Continuing	Continuing	Continuing
Dynamic Network Management T&E	WX	SPAWARSYSCEN, San Diego, CA				3.685	12/03	1.534	Various	Continuing	Continuing	Continuing
Dynamic Network Management T&E	WX	OPTEVFOR, Norfolk, VA				0.214	06/04	1.500	Various	Continuing	Continuing	Continuing
Dynamic Network Management T&E	WX	Various				0.428	Various					
Subtotal T&E			28.602	6.067		5.592		3.355				
Remarks:												
Engineering Support and Travel	Various	Various	7.745	2.122	Various	1.886	Various	1.430	Various	Continuing	Continuing	Continuing
Subtotal Management			7.745	2.122		1.886		1.430				
Remarks:												
Total Cost			293.567	25.648		32.462		15.330				

Remarks: The Low Cost Integration Processing (LCI) Program has been renamed to the Common Link Integration Processing (CLIP) Program.

EXHIBIT R4, Schedule Profile | DATE: **February 2004**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E,N/BA-7**

PROGRAM ELEMENT NUMBER AND NAME: **0205604N Tactical Data Links**

PROJECT NUMBER AND NAME: **2126 ATDLS Integration**

Fiscal Year	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
Program Milestones MIDS			IOC △	MS III △	US AF		MS △	US Navy																				
CLIP (LCI)																				Link-16/JRE IOC △				VMF/Data Forwarding IOC △				
DNM																	IOC △											
Engineering Milestones DNM							CDR △																					
CLIP (LCI)								Link-16/JRE PDR △ CDR △			VMF/Data Forwarding PDR △ CDR △					Link-4/11/22 PDR △ CDR △												
JSS								PDR △	CDR △																			
Test & Evaluation Milestones MIDS F/A-18	△ OPEVAL △	Interoperability Cert	OPEVAL △	VCD		VCD △																						
MIDS on Ship					DT-III-B △																							
CLI P (LCI) LINK-16/JRE										Platform Integ Test △			CT △			DT △			OT △								
CLIP (LCI) VMF/DATA FORWARDING														Platform Integ Test △			CT △			DT △			OT △				
CLIP (LCI) LINK-4/11/22																		Platform Integ Test △			CT △			DT △			OT △	
DNM								DT △		SFQT △	Link Cert △	Fleet Exercise △			TECH/OPEVAL △													
JSS												Lab Test △	Integ Test △															
Contract Milestones CLIP (LCI)						Link-16/JRE	△			VMF/Data Forwarding	△				Link-4/11/22	△												
JSS							JSS △																					

R-1 SHOPPING LIST - Item No. 176

The Low Cost Integration (LCI) Program has been renamed as the Common Link Integration Processing (CLIP) Program.
The CLIP Program is a multi-Service effort and is funded by various programs. The development of the CLIP software and integration is funded by LCI (PE 0205604N/2126), NGC2P (PE 0205604N/1743), Naval aircraft platform programs, the Air Force Tactical Data Link Common Software Program and the Air Force Objective Gateway Program. The CLIP Program schedule is shown above.
The Joint Interface Control Officer (JICO) Support System (JSS) is a multi-service effort and is currently funded by the Navy and the Air Force.

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **February 2004**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E,N/BA-7**	PROGRAM ELEMENT **0205604N Tactical Data Links**				PROJECT NUMBER AND NAME **2126 ATDLS Integration**		
Schedule Profile	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
MIDS F/A-18 Interoperability Cert	1Q						
MIDS F/A-18 OPEVAL	1Q						
MIDS IOC	3Q						
MIDS F/A-18 OPEVAL VCD	3Q						
MIDS DAB MS III USAF	4Q						
MIDS on Ship DT-III-B		1Q					
MIDS F/A-18 VCD		2Q					
MIDS DAB MS III US Navy		3Q					
DNM CDR		3Q					
CLIP (LCI) Link-16/JRE Contract Award		3Q					
JSS Contract Award		3Q					
CLIP (LCI) Link-16/JRE PDR		4Q					
JSS PDR		4Q					
DNM DT		4Q					
CLIP (LCI) Link-16/JRE CDR			1Q				
JSS CDR			1Q				
DNM SFQT			2Q				
CLIP (LCI) Link-16/JRE Platform Integration Test			3Q				
DNM Link Certification			3Q				
CLIP (LCI) VMF/Data Forwarding Contract Award			3Q				
CLIP (LCI) VMF/Data PDR			4Q				
DNM Fleet Exercise			4Q				
JSS Laboratory Test			4Q				
CLIP (LCI) VMF/Data Forwarding CDR				1Q			
CLIP (LCI) Link-16/JRE Contractor Test (CT)				1Q			
JSS Integration Test				2Q			
CLIP (LCI) VMF/Data Forwarding Platform Integration Test				3Q			
DNM TECHEVAL/OPEVAL				3Q			
CLIP (LCI) Link-4/11/22 Contract Award				3Q			
CLIP (LCI) Link-4/11/22 PDR				4Q			
CLIP (LCI) Link-16/JRE DT				4Q			
DNM IOC					1Q		
CLIP (LCI) Link-4/11/22 CDR					1Q		
CLIP (LCI) VMF/Data Forwarding CT					1Q		
CLIP (LCI) Link-16/JRE OT					3Q		
CLIP (LCI) Link-4/11/22 Platform Integration Test					3Q		
CLIP (LCI) VMF/Data Forwarding DT					4Q		
CLIP (LCI) Link-16/JRE IOC						1Q	
CLIP (LCI) Link-4/11/22 CT						1Q	
CLIP (LCI) VMF/Data Forwarding OT						3Q	
CLIP (LCI) Link-4/11/22 DT						4Q	
CLIP (LCI) VMF/Data Forwarding IOC							1Q
CLIP (LCI) Link-4/11/22 OT							3Q

R-1 SHOPPING LIST - Item No. 176

The Low Cost Integration (LCI) Program has been renamed to the Common Link Integration Processing (CLIP) Program.

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: **FEBRUARY 2004**	
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-07**					R-1 ITEM NOMENCLATURE 0205620N Surface ASW Combat System Integration			
COST ($ in Millions)		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost		**36.065**	**23.118**	**10.612**	**4.778**	**10.234**	**10.505**	**10.721**
0896 / ASW Combat Systems Integration		**0.000**	**0.000**	**0.000**	**1.259**	**5.321**	**5.427**	**5.537**
1916 / Surface ASW System Improvements		**36.065**	**23.118**	**10.612**	**3.519**	**4.913**	**5.078**	**5.184**

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The objective of this Program Element (PE) is to significantly improve existing Surface Ship Sonar System Capabilities as well as quickly and affordably develop and integrate emergent transformational technologies.

Project 0896, ASW Combat Systems Integration, will serve as the ASW "way ahead" in the Navy and will provide a clear transition path for emergent transformational ASW technologies to be quickly and affordably developed and incorporated, enabling the aggressive pursuit of improvements to system portability, extension of interoperability with multiple platforms, and opportunity to export these capabilities Navywide. Time phased insertion of ASW COTS improvements will address the entire combat system, including acoustics, fire control, contact management, performance prediction, and on-board training.

Project 1916, Surface ASW System Improvements, will improve AN/SQQ-89(V) Measures of Performance (MOP) by enhancing detection, tracking, classification, active and sonobuoy data processing and display capabilities, and increasing acoustic sensor frequency bandwidth. This Project will take advantage of the AN/SQQ-89(V) Open System Architecture and Acoustic Rapid COTS Insertion (ARCI) intiatives to develop and integrate a Multi-Function Towed Array (MFTA) with active sonar bistatics (Echo Tracker Classifier - ETC), an ARCI passive ASW processor, and torpedo defense capabilities (Forward and Aft sector coverage with Wake Homer protection). This COTS-based Surface USW combat system, the AN/SQQ-89A(V)15, is currently planned as a backfit program for both CG47 (as part of the Cruiser Modernization program) and DDG51 class ships (Flight IIA). Additionally, via a Peer Review Process (PRP) and Build-Test-Build program, this Project will continue to capitalize on the Open System Architecture of the AN/SQQ-89A(V)15 with the incorporation of emergent, transformational ASW technologies.

Defense Emergency Response Funds (DERF) Funds:

Not Applicable

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **FEBRUARY 2004**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-07**	PROGRAM ELEMENT NUMBER AND NAME 0205620N Surface ASW Combat System Integration				PROJECT NUMBER AND NAME 1916 Surface ASW System Improvements			
COST ($ in Millions)		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost		**36.065**	**23.118**	**10.612**	**3.519**	**4.913**	**5.078**	**5.184**
RDT&E Articles Qty		**1**						

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The Surface ASW System Improvements Project will support essential performance enhancements to AN/SQQ-89(V) and Surface Ship Sonar Systems. This Project, will improve AN/SQQ-89(V) Measures of Performance (MOP) by enhancing detection, tracking, classification, active and sonobuoy data processing and display capabilities, and increasing acoustic sensor frequency bandwidth. This Project will take advantage of the AN/SQQ-89(V) Open System Architecture and Acoustic Rapid COTS Insertion (ARCI) intiatives to develop and integrate a Multi-Function Towed Array (MFTA) with active sonar bistatics (Echo Tracker Classifier - ETC), an ARCI passive ASW processor, and torpedo defense capabilities (Forward and Aft sector coverage with Wake Homer protection). This COTS-based Surface USW combat system, the AN/SQQ-89A(V)15, is currently planned as a backfit program for both CG47 (as part of the Cruiser Modernization program) and DDG51 class ships (Flight IIA). This Project will fund the procurement of the AN/SQQ-89A(V)15 Pre-Production Prototype in FY 2003, with installation planned in FY 2004, and Developmental and Initial Operational Test & Evaluation events scheduled in FY 2004 and FY 2005 respectively. Additionally, via a Peer Review Process (PRP) and Build-Test-Build program, this Project will continue to capitalize on the Open System Architecture of the AN/SQQ-89A(V)15 with the incorporation of emergent, transformational ASW technologies such as data fusion, marine mammal detect and mitigation, Distant Thunder, new RAPTOR radar processor, and upgraded technologies such as algorithm improvements, increased passive narrow band (PNB) frequency, improved extended echo ranging (EER), and beamformer improvements. 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, integrating the LAMPS Mk III Blk II Common Airborne Undersea Sensor Software (CAUSS) and Ku Band on-board AN/SQQ-89(V) systems.

This PE reflects a Congressional Add in in FY 2003 to continue 'AN/SQQ-89(V) Surface Undersea Warfare Combat System sensor and signal processing improvements begun under SBIR N97-090'. Funds were 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.

This PE reflects ASN(RDA) BTRs 03-40, 03-41 and 03-50 for $1.725M in FY 2003 to support the CNO chartered "Task Force ASW" team in recommending transformational technologies for ASW.

This PE reflects a Congressional Add in FY 2004 under Project 1916 for 'Surface Ship ASW R&D Improvements'. Funds will be used to complete the development of promising technologies for at-sea tests in representative warfighting environments. Once satisfactorily tested, technologies will be transitioned to variants of the AN/SQQ-89(V) USW Combat System.

This PE reflects a Congressional Add in FY 2004 under Project 1916 for 'Common Surface and Air Undersea Warfare - Implementation of an Air and Surface Ship Peer Review Process integration approach for replacement of legacy equipment'. Once the Peer Review team determines which legacy equipment to replace/upgrade, funds will be used to develop the Common Surface and Air USW integration system baseline that will be integrated and installed on a DDG51 class ship for testing and evaluation.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **FEBRUARY 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-07	0205620N Surface ASW Combat System Integration	1916 Surface ASW System Improvements

B. Accomplishments/Planned Program

		FY 03	FY 04	FY 05
Enhance SQQ-89A(V)15 Open System Architecture		4.511	5.155	7.844
RDT&E Articles Quantity				

Development of a common superset software baseline for AN/SQQ-89A(V)15. and AN/SQQ-89(V)15 w/ EC 200. Continue enhancement of the AN/SQQ-89A(V)15 Open System Architecture via the incorporation of transformation technologies through the PRP Build-Test-Build program. Items include Explosive Source integration with AN/SQQ-89(V) processes, rapid integration of Common Undersea Picture initiatives, simplification of displays and active processing, and 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 03	FY 04	FY 05
AN/SQQ-89A(V)15 Delivery and Installation		17.123	1.777	
RDT&E Articles Quantity		1		

FY03: Contracted for delivery of AN/SQQ-89A(V)15 Pre-Production Prototype, provided associated integration and production support, and coordinated installation efforts.
FY04: Contract for installation of AN/SQQ-89A(V)15 Pre-Production Prototype, provide associated Installation Checkout (INCO) support.

		FY 03	FY 04	FY 05
AN/SQQ-89A(V)15 Pre-Production Prototype DT/OT			3.312	2.200
RDT&E Articles Quantity				

FY04: Coordinate and conduct Developmental Test DT-IIIAQ of the AN/SQQ-89A(V)15 Pre-Production Prototype and coordinate plan for FY 2005 Initial Operational Test & Evaluation OT-IIIK.
FY05: Coordinate and conduct Initial Operational Test & Evaluation OT-IIIK of the AN/SQQ-89A(V)15 Pre-Production Prototype system.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **FEBRUARY 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-07	0205620N Surface ASW Combat System Integration	1916 Surface ASW System Improvements

B. Accomplishments/Planned Program (Cont.)

		FY 03	FY 04	FY 05
LAMPS Mk III Blk II CAUSS & Ku Band Integration		0.540	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 03	FY 04	FY 05
AN/SQQ-89(V) Test & Evaluation Program		0.820	0.686	0.568
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 tests of Torpedo Alertment Upgrade (TAU) version 5.0 and AN/SQQ-89(V) PRP systems, provide performance data and environmental analysis, Independent Verification & Validation (IV&V), and modeling and simulation using MOP and measures of effectiveness (MOE) methods.

		FY 03	FY 04	FY 05
MFTA Sea Test		0.335		
RDT&E Articles Quantity				

Coordinated and conducted test of MFTA performance at sea. Provided report and analysis of findings.

R-1 SHOPPING LIST - Item No. 177

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **FEBRUARY 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-07	0205620N Surface ASW Combat System Integration	1916 Surface ASW System Improvements

B. Accomplishments/Planned Program (Cont.)

		FY 03	FY 04	FY 05
Task Force ASW		1.725		
RDT&E Articles Quantity				

The CNO established "Task Force ASW" to review and study options available for revamping the ASW mission by looking at the issue in a holistic approach. Funding supported the Task Force ASW team in recommending transformational technologies for ASW; taking advantage of emerging technologies, new processes, and various methods of monitoring submarine activity, including intelligence collection platforms.

		FY 03	FY 04	FY 05
AN/SQQ-89(V) Sensor/Signal Processing Improvements		11.011		
RDT&E Articles Quantity				

Congressionally added funds in FY03 continued AN/SQQ-89(V) Surface Undersea Warfare Combat System sensor and signal processing improvements begun under SBIR N97-090. These funds were 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 was 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.

		FY 03	FY 04	FY 05
Surface Ship ASW R&D Improvements			10.200	
RDT&E Articles Quantity				

FY 2004 reflects Congressional Add for 'Surface Ship ASW R&D Improvements' to complete the development of promising technologies for at-sea tests in representative warfighting environments. Once satisfactorily tested, technologies will be transitioned to variants of the AN/SQQ-89(V) USW Combat System.

R-1 SHOPPING LIST - Item No. 177

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **FEBRUARY 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-07	0205620N Surface ASW Combat System Integration	1916 Surface ASW System Improvements

B. Accomplishments/Planned Program (Cont.)

		FY 03	FY 04	FY 05
Common Surface and Air Undersea Warfare			0.988	
RDT&E Articles Quantity				

FY 2004 reflects Congressional Add for 'Common Surface and Air Undersea Warfare' to develop the Common Surface and Air USW integration system baseline that will be integrated and installed on a DDG51 class ship for testing and evaluation.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: FEBRUARY 2004
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-07	0205620N Surface ASW Combat System Integration	1916 Surface ASW System Improvements

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2003	FY 2004	FY 2005
Previous President's Budget: (FY04 President's Controls)	35.106	12.179	11.187
Current BES/President's Budget: (FY05 President's Controls)	36.065	23.118	10.612
Total Adjustments	0.959	10.939	-0.575
Summary of Adjustments			
Congressional program reductions			
Congressional undistributed reductions			
Congressional rescissions		-0.261	
SBIR/STTR Transfer	-0.760		
Economic Assumptions			-0.049
Reprogrammings *	1.725		-0.500
Other Navy/OSD Adjustments	-0.006		-0.026
Congressional increases		11.200	
Subtotal	0.959	10.939	-0.575

Schedule:

None

Technical:

None

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **FEBRUARY 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-07	0205620N Surface ASW Combat System Integration	1916 Surface ASW System Improvements

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
OPN BLI 2136/ AN/SQQ-89 Surface ASW Combat System	13.7	15.2	0.0	0.0	0.0	0.0	32.9	Continuing	Continuing
OPN BLI 9600/ Cruiser Modernization									
SCN BLI 2122/ DDG-51									

E. ACQUISITION STRATEGY:

- Complete AN/SQQ-89A(V)15 Pre-Production Prototype 1Q FY 2004, perform installation in 3Q FY 2004, conduct developmental test 3Q FY 2004 and initial operational test in FY 2005. Via PRP and Build-Test-Build process, incorporate evolutionary and transformational technologies into AN/SQQ-89(V) systems at scheduled intervals.

F. MAJOR PERFORMERS:

- Advanced Acoustic Concepts (AAC), NY - SBIR Phase III contract for common acoustic procesor, 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
- General Dynamics-AIS (formerly 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

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)

DATE: **FEBRUARY 2004**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-07**

PROGRAM ELEMENT: 0205620N Surface ASW Combat System Integration

PROJECT NUMBER AND NAME: 1916 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	7.910	12/02	0.404	01/04			0.000	10.536	
Primary H/W & S/W Development	C/CPFF	AHA, MD	3.666	2.008	11/02	0.108	02/04			0.000	5.782	
Primary H/W & S/W Development	C/CPFF	GD-AIS, VA	3.644	2.494	11/02	8.466	02/04			0.000	14.604	
Primary H/W & S/W Development	C/CPFF	JHU/APL, MD	6.669	2.269	10/02	0.079	01/04			0.000	9.017	
Primary H/W & S/W Development	C/CPAF	LOCKHEED MARTIN, NY	36.617	11.911	11/02	4.613	11/03	5.500	11/04	Continuing	Continuing	
Primary H/W & S/W Development	WR/WX	NAVSEA/DAHLGREN, VA	7.776	0.753	10/02	0.858	11/03	0.650	10/04	Continuing	Continuing	
Primary H/W & S/W Development	WR/WX	NAVSEA/NEWPORT, RI	26.829	1.872	10/02	0.547	11/03	0.927	10/04	Continuing	Continuing	
Primary H/W & S/W Development	Var.	Var.	28.221	5.488	10/02	3.505	10/03	0.457	11/04	Continuing	Continuing	
Subtotal Product Development			115.644	34.705		18.580		7.534		Continuing	Continuing	

Remarks:
Budgeted for award fees ($M): 0.292 in FY03, 0.294 in FY04, 0.230 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:

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **FEBRUARY 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-07**		PROGRAM ELEMENT 0205620N Surface ASW Combat System Integration				PROJECT NUMBER AND NAME 1916 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	11/03	2.200	11/04	Continuing	Continuing	
Miscellaneous T&E	Var.	Var.	3.422	0.820	10/02	0.686	11/03	0.568	11/04	Continuing	Continuing	
Subtotal T&E			7.586	0.820		3.998		2.768		Continuing	Continuing	
Remarks:												
Program Management Support	Var.	Var.	6.436	0.390	11/02	0.390	12/03	0.160	11/04	Continuing	Continuing	
Travel	Var.	Var.	1.154	0.150	11/02	0.150	11/03	0.150	11/04	Continuing	Continuing	
			7.590	0.540		0.540		0.310		Continuing	Continuing	
Remarks:												
Total Cost			133.220	36.065		23.118		10.612		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 177

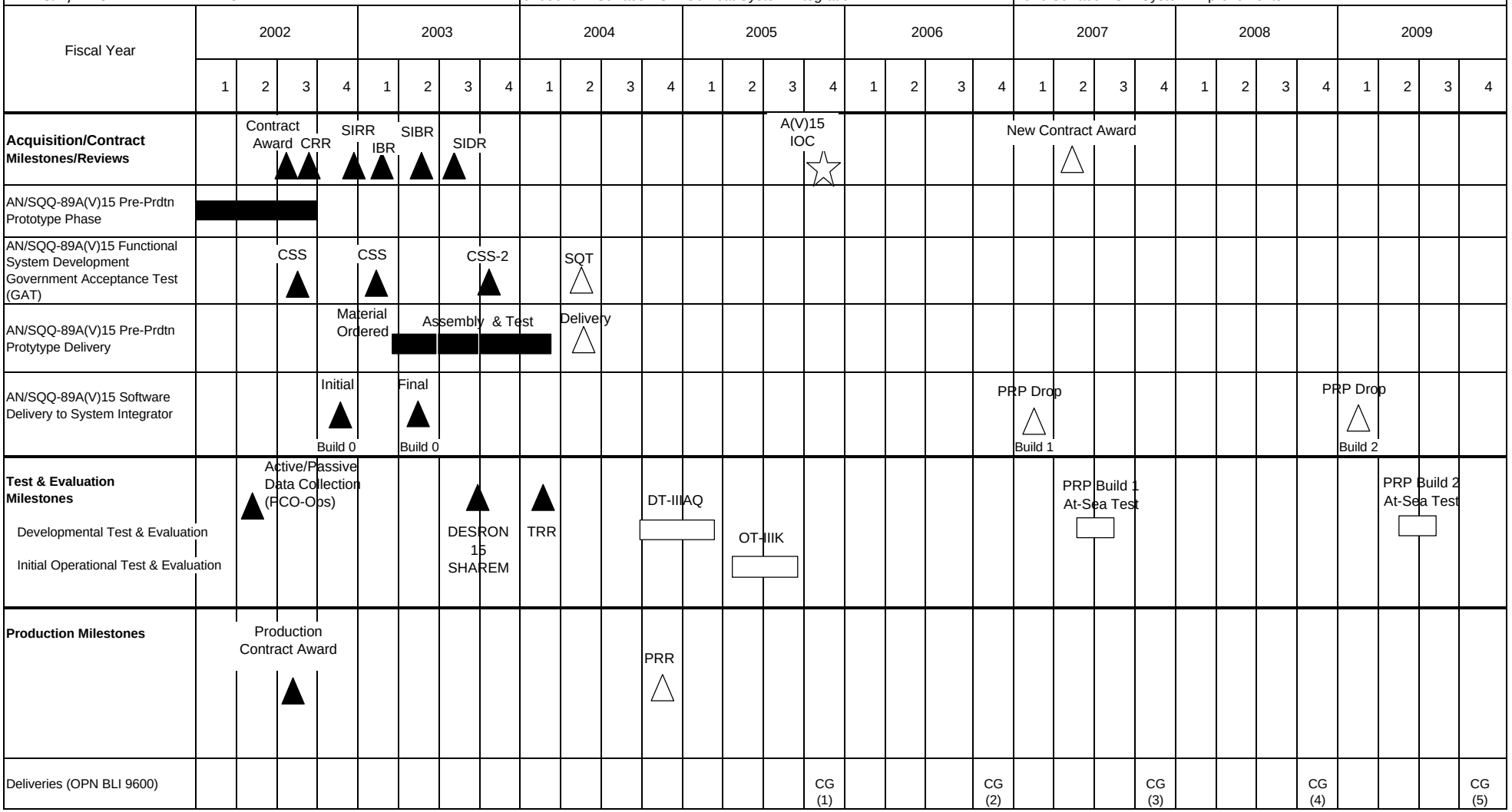
CLASSIFICATION:

EXHIBIT R4, Schedule Profile — DATE: **FEBRUARY 2004**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-07**

PROGRAM ELEMENT NUMBER AND NAME: 0205620N Surface ASW Combat System Integration

PROJECT NUMBER AND NAME: 1916 Surface ASW System Improvements



R-1 SHOPPING LIST - Item No. 177

CLASSIFICATION:

Exhibit R-4a, Schedule Detail					DATE: FEBRUARY 2004			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-07**	PROGRAM ELEMENT 0205620N Surface ASW Combat System Integration				PROJECT NUMBER AND NAME 1916 Surface ASW System Improvements			
Schedule Profile		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Prototype Phase								
Active/Passive Data Collection (PCO-Ops)								
Contract Award to Lockheed Martin								
Contracts Requirements Review (CRR)								
Initial Software Delivery to System Integrator								
System Integration Requirements Review (SIRR)								
Government Acceptance Test (GAT)		1Q, 4Q						
Integrated Baseline Review (IBR)		1Q						
Pre-Production Prototype Material Ordered		1Q						
System Integration Baseline Review (SIBR)		2Q						
Final Software Delivery to System Integrator		2Q						
System Integration Design Review (SIDR)		3Q						
Pre-Production Prototype Assembly Begins		3Q						
DESRON 15 SHAREM		3Q						
Pre-Production Prototype Test		4Q	1Q					
Test Readiness Review (TRR)			1Q					
System Qualification Test (SQT)			2Q					
Pre-Production Prototype Final Delivery			2Q					
Developmental Test DT-IIIAQ			3Q-4Q					
Preproduction Readiness Review (PRR)			4Q					
Initial Operational Test (OT-IIIK)				2Q				
Initial Operational Capability (IOC)				4Q				
(OPN) Production Delivery to CG47 Class Ship (1)				4Q				
(OPN) Production Delivery to CG47 Class Ships (2)					4Q			
Peer Review Process S/W / H/W Drop - Build 1						1Q		
New Contract Award						2Q		
PRP At-Sea Test - Build 1						2Q-3Q		
(OPN) Production Delivery to CG47 Class Ships (3)						4Q		
(OPN) Production Delivery to CG47 Class Ships (4)							4Q	
Peer Review Process S/W / H/W Drop - Build 2								1Q
PRP At-Sea Test - Build 2								2Q-3Q
(OPN) Production Delivery to CG47 Class Ships (5)								4Q

R-1 SHOPPING LIST - Item No. 177

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification						DATE: **February 2004**	
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-7**				R-1 ITEM NOMENCLATURE MK48 ADCAP/0205632N			
COST ($ in Millions)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost	**21.323**	**17.036**	**21.620**	**22.131**	**26.018**	**26.564**	**27.052**
MK48 ADCAP/0366	**21.323**	**17.036**	**21.620**	**22.131**	**26.018**	**26.564**	**27.052**
Quantity of RDT&E Articles	**15**	**6**	**1**	**1**		**1**	

A. (U) Mission Description and Budget Item Justification: MK48 ADCAP RDT&E program executes spiral development of 3 weapon performance improvements in three development product areas: (1) Common Broadband Advanced Sonar System (CBASS); (2) Advanced Processor Builds (APBs), and (3) Torpedo Technology Insertion. The budget enables ACAT III development to address CNO defined capability-based requirements and mission needs. This PE (0205632N/0366) is tied to development programs that leverage a Congressionally funded Torpedo APB program (in PE 0603561N/9039), a joint US/Australia Armaments Cooperative Project to develop MK48 ADCAP, and leverage Future Naval Capability technologies being developed by ONR.

(U) The MK 48 ADCAP (ADvanced CAPability) torpedo R&D program focuses on two specific areas near term: Torpedo Advanced Processor Builds (APBs) and broadband sonar capability. The Chief of Naval Operations continues to stress shallow water (less than 600 feet) as a critical operating area to counter third world diesel electric submarines. Torpedo testing in shallow water has demonstrated that in-service ADCAP has less than full capability in this difficult environment. However, this testing, in conjunction with laboratory simulation efforts, has shown that significant performance improvements can be made by implementing changes to weapon tactics and software algorithms. Development, implementation and testing of these changes is being accomplished under the Torpedo APB program. This program 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 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 Commonwealth of Australia Royal Australian Navy (RAN) is participating to jointly develop CBASS torpedo and signed an Armaments Cooperative Project Agreement Mar 2003. The intent of the CBASS program is to achieve improvements in shallow water torpedo performance over current (MK48 Mod 5) capability.

(U) The Torpedo Technology Insertion program will provide for evolutionary torpedo improvements and upgrades (including the transition and testing of advanced technologies from the R&D community (6.2/6.3) and contractors). This approach will incorporate developmental testing of the Future Naval Capability (FNC) transitioning technologies for ADCAP upgrades in the areas of torpedo sensors, weapon/platform connectivity, warhead lethality, speed and depth. These efforts will continue torpedo development investment at a lower cost and shorter term than traditional torpedo programs.

EXHIBIT R-2, RDT&E Budget Item Justification	DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-7**	R-1 ITEM NOMENCLATURE MK48 ADCAP/0205632N

B. Accomplishments/Planned Program

TORPEDO APB	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	7.809	9.123	11.836
RDT&E Articles Quantity*		1	1

* Denotes Torpedo APB software builds

FY03- Conducted additional developmental and operational testing of MK48 ADCAP MODS per TEMP to correct deficiencies.
FY04 - 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 for rapid delivery of incremental software improvements to fielded MODS torpedoes every 18-24 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 validation of safety features for submarine crew safety. Torpedo APB software build release planned in FY05.

CBASS	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	9.601	6.683	7.588
RDT&E Articles Quantity	15	5	

FY03- Integration and delivery of CBASS EDM hardware. 15 CBASS kits (preamplifiers and BSARs) delivered by Northrop Grumman. Continued development of advanced wideband algorithms, signal processing, and tactical software. Begin integration of CBASS prototype hardware and software components and test equipment in preparation for development testing.
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.

EXHIBIT R-2, RDT&E Budget Item Justification	DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-7**	R-1 ITEM NOMENCLATURE MK48 ADCAP/0205632N

B. Accomplishments/Planned Program (Cont.)

OPTEVFOR	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.485	0.880	1.000
RDT&E Articles Quantity			

FY03- Provided for COMOPTEVFOR trusted agent test analysis and model validation support.
FY04-FY05 - Provide for accreditation requirements for Mod 7 shallow water environments required prior to OPEVAL and provide developmental test support.

TACDEVEX 01-03	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	2.459		
RDT&E Articles Quantity			

FY03- Conducted developmental testing of MK48 ADCAP Mod 6 in cold water environments. Efforts included torpedo preparations, modeling and simulation predictions, and post-run analysis, and preparations for required submarine hit-shot certification analysis prior to exercise.

TECHNOLOGY INSERTIONS	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.969	0.350	1.196
RDT&E Articles Quantity			

FY03- Performed fiber optic connectivity technology study and military value analysis.
FY04- Transition torpedo technologies selected under Torpedo Technology Insertion program. Continue advanced technology 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.
FY05- Start development efforts (including planning and systems engineering) that would implement new technologies into the latest MK48 ADCAP torpedoes. 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.

EXHIBIT R-2, RDT&E Budget Item Justification	DATE: February 2004
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-7**	R-1 ITEM NOMENCLATURE MK48 ADCAP/0205632N

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2003	FY 2004	FY 2005
Previous President's Budget: (FY 04 Pres Controls)	21.499	17.227	24.234
Current BES/President's Budget (FY 05 Pres Controls):	21.323	17.036	21.620
Total Adjustments	-0.176	-0.191	-2.614
Summary of Adjustments			
FY 03 SBIR	-0.121		
Cancel Accounts	-0.055		
Manpower Adjustment			-0.065
Management Improvement		-0.045	
Efficiencies (Sec. 8126)		-0.146	
Economic Assumptions			-0.149
Sea Enterprise (LOE II)			-2.400
Subtotal	-0.176	-0.191	-2.614

Schedule: Delay fiber optic capability by 2 years from FY07 to FY09 due to Level of Effort (LOE) cuts. In addition, delay advanced Sonar IOC by 2 years from FY09 to FY11 and delay delivery of COTS processor upgrade from FY08 to FY10.

Technical: FY05 -- Limit scope of tradeoff studies, Torpedo APB systems engineering, and Algorithm development as a result of reductions.

EXHIBIT R-2, RDT&E Budget Item Justification	DATE: February 2004
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-7**	R-1 ITEM NOMENCLATURE MK48 ADCAP/0205632N

D. OTHER PROGRAM FUNDING SUMMARY:

	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)	60.624	59.923	61.185	62.092	63.090	64.710	66.088	
Sub. Tactical Warfare Systems (RDT&E/PE0603562N/BA-4)	12.502	6.948	5.957	6.650	9.889	9.993	10.283	
Advanced Submarine Systems (RDT&E/PE0603561N/BA4)	126.891	92.539	81.160	117.311	116.065	138.838	136.507	

E. ACQUISITION STRATEGY:

CBASS EMD contract was competitively awarded among qualified ADCAP producers.
Contract award planned in FY 2004 for MK48 ADCAP MODS, Lightweight MK54 and CBASS kits, including RAN units.

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 fifteen (15) CBASS kits (preamps and BSARs)

Exhibit R-3 Cost Analysis (page 1) | DATE: **February 2004**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NAME AND NUMBER
RDT&E, N/BA-7	**MK48 ADCAP/0205632N**	MK48 ADCAP/0366

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	0.776	10/03	1.205		CONT.	CONT.	N/A
Primary Hardware Development	Various	Various - TBD	0.000	0.000		0.000		0.096	11/04	CONT.	CONT.	N/A
Primary Hardware Development	C,CPIF	Northrop Grumman	27.770	3.904	11/02	0.200	11/03	0.200	11/04	0.000	32.074	32.074
Ancillary Hardware Development	C,CPFF	TRI / Austin	0.000	0.075	01/03	0.000		0.000				N/A
Systems Engineering	WR	NUWC NPT	CONT.	6.252	10/02	5.570	10/03	6.059	10/04	CONT.	CONT.	N/A
Licenses												
Tooling												
GFE												
Award Fees												
Subtotal Product Development			CONT.	10.231		6.546		7.560		CONT.	CONT.	

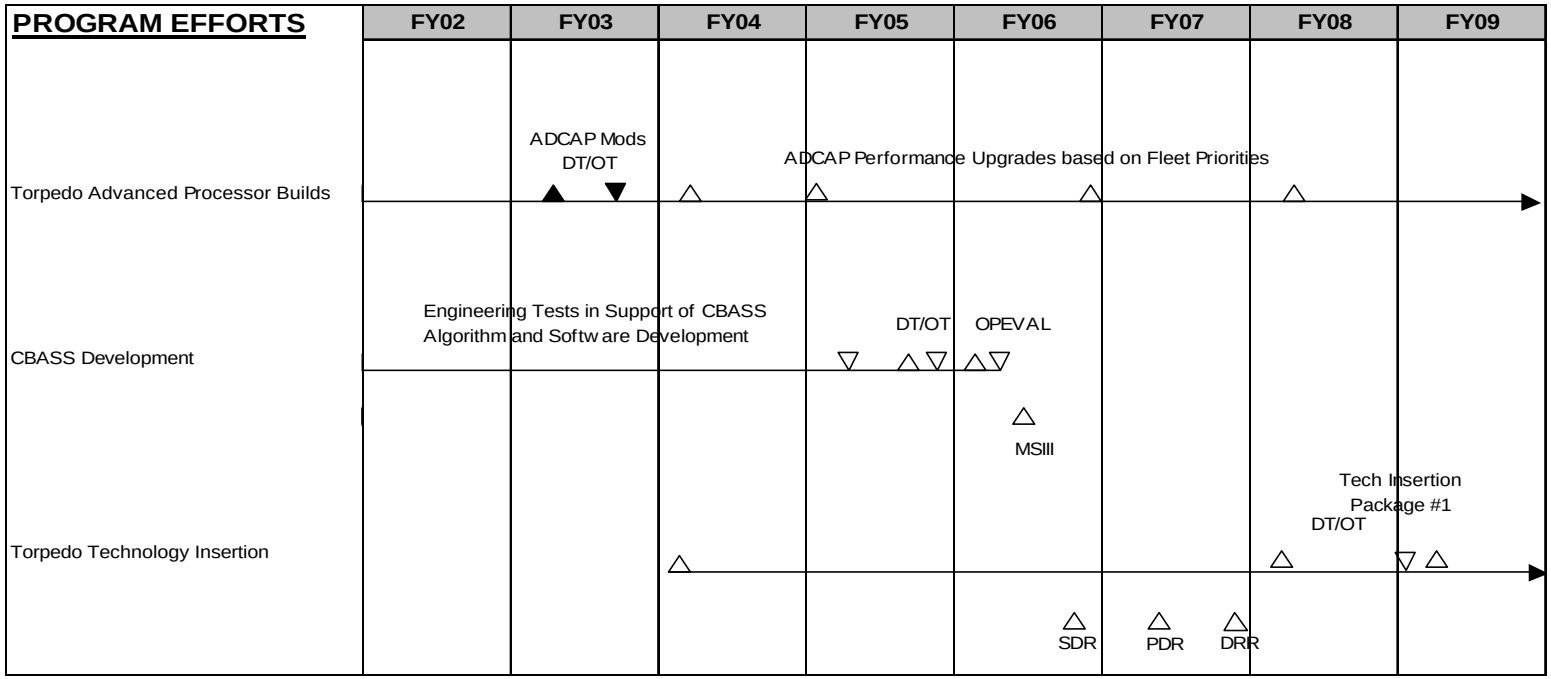
Remarks: Total Cost and Target Value of Northrop Grumman contract represents contract Latest Revised Estimate based on completed negotiations and CBASS hardware technical requirements.
Various - TBD; Primary hardware development activity to be selected after evaluation of technologies from various vendors.

Development Support Equipment												
Software Development	WR	NUWC NPT	CONT.	3.023	10/02	3.867	10/03	3.978	10/04	CONT.	CONT.	N/A
Software Development	Various	Various	0.000	0.681	11/02	0.237	12/03	0.300	12/04	CONT.	CONT.	N/A
Software Development	C,CPFF	ARL / PSU	0.000	0.217	05/03	0.353	12/03	0.650	12/04	CONT.	CONT.	N/A
Training Development												
Integrated Logistics Support												
Configuration Management												
Technical Data												
GFE												
Subtotal Support			CONT.	3.921		4.457		4.928		CONT.	CONT.	

Remarks: FY03 software development includes small business and industry participants (Paul Greenblatt Consulting, Anteon Corporation, Lockheed Martin) in the Torpedo APB program.

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT				PROJECT NAME AND NUMBER						
RDT&E, N/BA-7		**MK48 ADCAP/0205632N**				MK48 ADCAP/0366						
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.	2.813	10/02	2.760	10/03	4.919	10/04	CONT.	CONT.	N/A
Operational Test & Evaluation	WR	OPTEVFOR	CONT.	0.485	11/02	0.880	11/03	1.000	11/04	CONT.	CONT.	N/A
Modeling & Simulation	WR	NUWC NPT	CONT.	2.407	10/02	1.675	10/03	2.362	10/04	CONT.	CONT.	N/A
Modeling & Simulation	Various	MIT	CONT.	0.650	11/02							
GFE												
Subtotal T&E			CONT.	6.355		5.315		8.281		CONT.	CONT.	
Remarks:												
Contractor Engineering Support												
Government Engineering Support												
Program Management Support	Various	Anteon	CONT.	0.500	MISC.	0.500	MISC.	0.500	MISC.	CONT.	CONT.	N/A
Travel			CONT.	0.045		0.020		0.045		CONT.	CONT.	N/A
Labor (Research Personnel)												
Overhead			CONT.	0.271		0.198		0.306		CONT.	CONT.	N/A
Subtotal Management			CONT.	0.816		0.718		0.851		CONT.	CONT.	
Remarks:												
Total Cost			CONT.	21.323		17.036		21.620		CONT.	CONT.	
Remarks:												

EXHIBIT R-4, Schedule Profile	DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-7**	R-1 ITEM NOMENCLATURE MK48 ADCAP/0205632N



CLASSIFICATION:

Exhibit R-4a, Schedule Detail				DATE: **February 2004**			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N/BA-7**				PROJECT NUMBER AND NAME **MK48 ADCAP/0366**			
Schedule Profile	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	1Q	4Q		2Q	
CBASS Development							
Engineering Tests	1Q-4Q	1Q-4Q	1Q-2Q				
Algorithm Development	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	1Q-4Q	1Q-4Q	1Q-4Q		
System Design Review (SDR)				4Q			
Priliminary Design Review (PDR)					2Q		
Design Readiness Review (DRR)					4Q		
Developmental/Operational Testing						2Q-4Q	1Q
Technology Insertion Package #1							2Q

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: **February 2004**	
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7**					R-1 ITEM NOMENCLATURE PE 0205633N / Aviation Improvements			
COST ($ in Millions)		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost		**38.878**	**68.552**	**62.635**	**68.847**	**67.305**	**61.895**	**62.370**
W0601 Common Ground Equipment		**3.614**	**3.131**	**2.664**	**2.983**	**3.024**	**3.103**	**3.158**
W0852 Consolidated Automated Support System (CASS)		**6.284**	**6.370**	**5.456**	**6.722**	**6.817**	**6.963**	**7.097**
W1041 A/C Equip Reliability/Maintainability Improvement Program		**0.595**	**1.431**	**2.079**	**3.008**	**3.107**	**2.358**	**2.867**
W1355 Aircraft Engine Component Improvement Program (CIP)		**28.385**	**48.473**	**52.436**	**56.134**	**54.357**	**49.471**	**49.248**
W9109 Aircraft Exploration Model Development			**3.708**					
W9426 Automated Wire Analysis			**2.967**					
H9427 Digital Integrated Cockpit Display			**0.989**					
W9428 Navair Technology Commercialization			**1.483**					

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

W0601 - Common Ground Equipment is a Naval Aviation Project to apply new technology to common support equipment necessary to support multiple aircraft. W0582 - 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. W1041 - 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. W1355 - 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. W9109 - Aircraft Age Exploration Model for Naval Aircraft platforms. The model will use existing Naval Aircraft data to establish connections between age and reliabilty, maintainability, and readiness and will provide the Navy with a valuable tool for understanding, predicting, and communicating impacts of decisions to extend aircraft service lives and for mitigating risks associated with these decisions. This is a continuation of efforts initiatied in FY02 to add enhanced functionallity to include automatic identification of reliability degredation items and automatic tracking of actuals against model generated predictions. W9426 - Current practices have technicians perform electrical testing on aircraft using both manual and automated methods. Once a short or open is found using existing test equipment, the technician must then find the physical location of the fault, one wire at a time, using pin-to-pin tests with handheld multi-meters and visual inspection. This generally involves at least two individuals connecting leads to each end of a wire to be tested. This is a slow process and reactive in nature. New commercial technology that incorporates Standing Wave Reflectometry (SWR) can proactively identify all hard faults (e.g. shorts and opens) of wiring malfunctions from a single end wire test, verify system modifications, and localize aircraft wiring malfunctions to within inches. This capability does not exist in the U.S. Navy today. A single wiring analyzer can serially test up to 1,152 wires at a time and the system can be expanded to test up to a maximum of 128,000 test points. This effort is to develop, validate and qualify this capability for Naval Avaition applications.

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification	DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7**	R-1 ITEM NOMENCLATURE PE 0205633N / Aviation Improvements

H9427 - The TH-57 Helicopter is the Navy's only primary helicopter pilot training platform, and is expected to remain in that capacity until 2025. All Navy fleet helicopters will have digital cockpits by 2012. To remain viable as an effective training platform, which meets the training requirements of an all digital helicopter fleet, the TH-57 cockpit can best utilize a digital design to effect greater aircraft training utilization. Research and Development funds will be utilized to produce a product that keeps pace with the rapidly changing fleet helicopter pilot training requirements and provides increased hard landing/crash and exceedence warning system protection to aircrews. The following areas will be explored Requirement Analysis, Cost Estimation, Crew Systems/Human System Integration, Logistics Support Analysis, and Aircraft Integration. W9428 - The NAVAIR Technology Commercialization Initiative is an effort to transition commercial technology for Naval Avaition Applications.

(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.

R-1 SHOPPING LIST - Item No. 179

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **FEBRUARY 2004**	
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 2003	FY 2004	*FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost		**3.614**	**3.131**	**2.664**	**2.983**	**3.024**	**3.103**	**3.158**
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.

*$0.3M was identified in the prior years to forward finance future year requirements and the corresponding reduction was made in FY 2005.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **FEBRUARY 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0205633N Aviation Improvements	W0601 Common Ground Equipment

B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost				0.080
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

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		0.951	2.781	2.584
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 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		2.663	0.350	
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.

R-1 SHOPPING LIST - Item No. 179

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **FEBRUARY 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0205633N Aviation Improvements	W0601 Common Ground Equipment

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2003	FY 2004	FY 2005
Previous President's Budget:	3.361	3.166	2.660
Current BES/President's Budget	3.614	3.131	2.664
Total Adjustments	0.253	-0.035	0.004
Summary of Adjustments			
SBIR/STTR Transfer	-0.035		
Reprogrammings	0.288		
Congressional Undistributed Reductions		-0.035	
Economic Assumptions			0.004
Subtotal	0.253	-0.035	0.004

Schedule:

Milestone A and the prototype phase slipped due to testing issues during Small Business Innovation Research Phase.

Technical:

Not Applicable

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **FEBRUARY 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0205633N Aviation Improvements	W0601 Common Ground Equipment

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
APN 070500 Ground Support Equipment	159.809	194.976	217.688	196.983	189.255	184.192	174.304	Continuing	Continuing
Related RDT&E: Not Applicable									

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:

Not Applicable

R-1 SHOPPING LIST - Item No. 179

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **FEBRUARY 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**			PROGRAM ELEMENT 0205633N Aviation Improvements			PROJECT NUMBER AND NAME 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	1.787	02/03	2.305	12/03	1.899	03/05	Continuing	Continuing	
Ancillary Hardware Development												
Aircraft Integration												
Ship Integration												
Ship Suitability												
Systems Engineering	Various	Various				0.466	12/03	0.400	03/05	Continuing	Continuing	
Training Development												
Licenses												
Tooling												
GFE												
Award Fees												
Subtotal Product Development			12.837	1.787		2.771		2.299		Continuing	Continuing	
Remarks:												
Development Support	Various	Various	4.139	1.777	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	1.777		0.125		0.120		Continuing	Continuing	
Remarks:												

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **FEBRUARY 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**		PROGRAM ELEMENT 0205633N Aviation Improvements			PROJECT NUMBER AND NAME 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	3.614		3.131		2.664		Continuing	Continuing	
Remarks:												

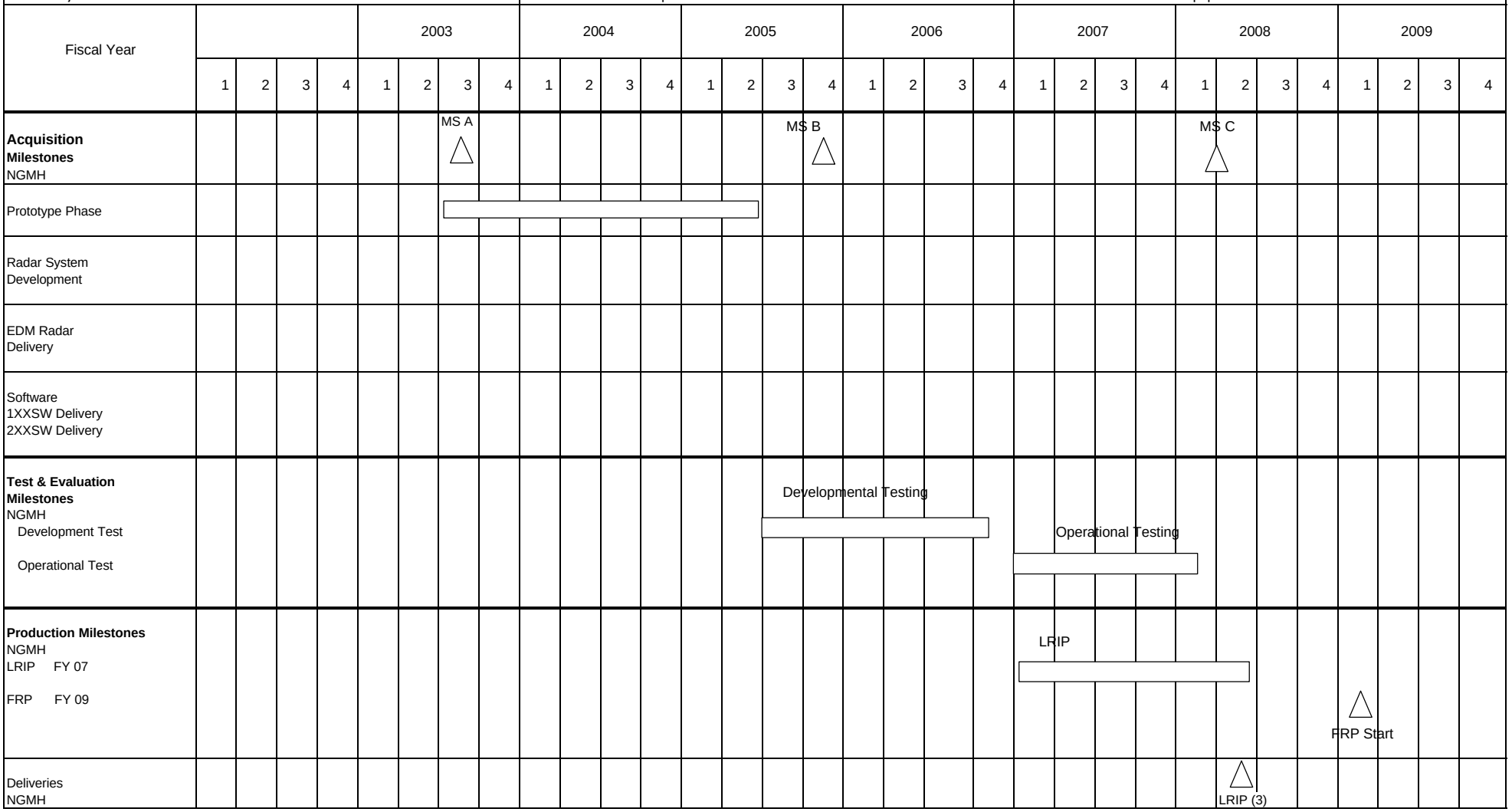
R-1 SHOPPING LIST - Item No. 179

CLASSIFICATION:

EXHIBIT R4, Schedule Profile

DATE: **FEBRUARY 2004**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0205633N Aviation Improvements	W0601 Common Ground Equipment



R-1 SHOPPING LIST - Item No. 179

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

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: FEBRUARY 2004		
APPROPRIATION/BUDGET ACTIVITY **RDT&BA-7**	PROGRAM ELEMENT 0205633N Aviation Improvements				PROJECT NUMBER AND NAME W0601 Common Ground Equipment			
Schedule Profile NGMH		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Prototype Phase		3Q-4Q	1Q-4Q	1Q-2Q				
Milestone A		3Q						
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

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **FEBRUARY 2004**	
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 2003	FY 2004	FY 2005*	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost		**6.284**	**6.370**	**5.456**	**6.722**	**6.817**	**6.963**	**7.097**
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 ATFLIR electro-optics capability, multi-analog test capability to enable functional testing, and CASS station modernization elements.

* $1.2M was identified in prior years which could forward finance future year requirements and the corresponding adjustment was made in FY 2005.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **FEBRUARY 2004**
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

B. Accomplishments/Planned Program

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		3.215		
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 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		3.069	0.400	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 facilitiate support of Inertial Measurement Systems as well as modifications to the design of RTCASS necessitated by technical problems encountered during DT&E.

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost			2.400	0.659
RDT&E Articles Quantity				

Electro-Optic capability
Develops a downsized electro-optic support system to enable RTCASS to provide support for Marine Air FLIR and LASER Targeting system**s.**

R-1 SHOPPING LIST - Item No. 179

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **FEBRUARY 2004**
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

B. Accomplishments/Planned Program (Cont.)

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost			3.570	3.797
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.

R-1 SHOPPING LIST - Item No. 179

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **FEBRUARY 2004**
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 2003	FY 2004	FY 2005
Previous President's Budget:	6.594	6.442	6.390
Current BES/President's Budget	6.284	6.370	5.456
Total Adjustments	-0.310	-0.072	-0.934
Summary of Adjustments			
SBIR/STTR Transfer	-0.095		
Reprogrammings	-0.215		
Congressional Undistributed Reductions		-0.072	
Other Adjustments			-0.941
Economic Assumptions			0.007
Subtotal	-0.310	-0.072	-0.934

Schedule:

Not Applicable

Technical:

Not Applicable

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **FEBRUARY 2004**
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

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
APN 070500 CASS	86.756	91.699	76.574	86.364	88.291	90.413	92.186	Continuing	Continuing
Related RDT&E: Not Applicable									

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 SIP supplier.

F. MAJOR PERFORMERS:

TBD

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)											DATE: **FEBRUARY 2004**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**			PROGRAM ELEMENT 0205633N Aviation Improvements			PROJECT NUMBER AND NAME 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	2.906	03/03					Continuing	Continuing	
Hardware Development - Upgrades	Various	Various	20.652	3.054	Various	0.400	Various	0.750	Various	Continuing	Continuing	
Hardware Development - EO	FFP	LKE				2.400	12/03	0.600	02/05	Continuing	Continuing	
Hardware Development - Mod	FFP	LKE				2.070	Various	2.847	Various	Continuing	Continuing	
Ship Suitability												
Systems Engineering												
Training Development												
Licenses												
Tooling												
GFE												
Award Fees												
Subtotal Product Development			27.169	5.960		4.870		4.197		Continuing	Continuing	
Remarks:												
Development Support - SI	TBD	TBD					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		1.150		0.909		Continuing	Continuing	
Remarks:												

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **FEBRUARY 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**		PROGRAM ELEMENT 0205633N Aviation Improvements				PROJECT NUMBER AND NAME 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			0.300	0.324	12/02	0.350	12/03	0.350	12/04	Continuing	Continuing	
Transportation												
SBIR Assessment												
Subtotal Management			0.300	0.324		0.350		0.350		Continuing	Continuing	
Remarks:												
Total Cost			27.469	6.284		6.370		5.456		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 179

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																															DATE: **FEBRUARY 2004**
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. 179

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **FEBRUARY 2004**		
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	2Q							

R-1 SHOPPING LIST - Item No. 179

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2004**	
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 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost		**0.595**	**1.431**	**2.079**	**3.008**	**3.107**	**2.358**	**2.867**
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.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N /	0205633N, Aviation Improvements	W1041, Aircraft Equipment Reliability/Maintainability Improvement Program (AERMIP)

B. Accomplishments/Planned Program

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		0.214	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 addressed the interactions of the canopy materials, the Navy (salt water) enviornment and the chemicals used to clean and maintain the canopies to determine the mechanisms responsible for the premature crazing. The deliverable was a report detailing the finding and changes to the maintenance practices as requried to increase the life of the canopies.

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		0.081	0.152	0.403
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 unanticiapted 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.

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		0.150	0.300	0.335
RDT&E Articles Quantity				

Corrsion 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 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. Effort follows and compliments recently completed effort on corrosion preventative compounds and continues the efforts for a complete corrosion protection plan.

R-1 SHOPPING LIST - Item No. 179

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N /	0205633N, Aviation Improvements	W1041, Aircraft Equipment Reliability/Maintainability Improvement Program (AERMIP)

B. Accomplishments/Planned Program (Cont.)

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		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 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		0.000	0.359	0.460
RDT&E Articles Quantity				

ASQ-208
Project will flight test and qualify a digital magnetic abnomality 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.

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		0.000	0.320	0.535
RDT&E Articles Quantity				

APN-202 Improvement Program
Perform validation/verification of replacement APN-202 system

R-1 SHOPPING LIST - Item No. 179

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N /	0205633N, Aviation Improvements	W1041, Aircraft Equipment Reliability/Maintainability Improvement Program (AERMIP)

B. Accomplishments/Planned Program (Cont.)

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

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

R-1 SHOPPING LIST - Item No. 179

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
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)

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2003	FY 2004	FY 2005
FY 2004 President's Budget	0.606	1.447	2.078
FY 2005 President's Budget	0.595	1.431	2.079
Total Adjustments	-0.011	-0.016	0.001
Summary of Adjustments			
Congressional program reductions			
Congressional undistributed reductions		0.016	
Congressional rescissions			
SBIR/STTR Transfer			
Economic Assumptions			0.001
Reprogrammings	-0.011		
Other Adjustments			
Congressional increases			
Subtotal	-0.011	0.016	0.001

Schedule:

Not Applicable

Technical:

Not Applicable

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
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)

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost

Related RDT&E:
0205633N, Aircraft Exploration Model Development, W9109
0205633N, Automated Wire Analysis, W9426
0205633N, NAVAIR Technology Commercialization, W9428

E. ACQUISITION STRATEGY:

Not applicable

F. MAJOR PERFORMERS:

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**			PROGRAM ELEMENT 0205633N, Aviation Improvements			PROJECT NUMBER AND NAME 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	0.412	10/02	1.251	10/03	1.859	10/04	Continuing	Continuing	
GFE												
Award Fees												
Subtotal Support			8.659	0.412		1.251		1.859		Continuing	Continuing	
Remarks:												

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**		PROGRAM ELEMENT 0205633N, Aviation Improvements				PROJECT NUMBER AND NAME 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	Eagle Systems, Patuxent River,	0.000	0.043	11/02						0.043	0.043
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	0.183		0.180		0.220		Continuing	Continuing	
Remarks:												
Total Cost			9.379	0.595		1.431		2.079		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 179

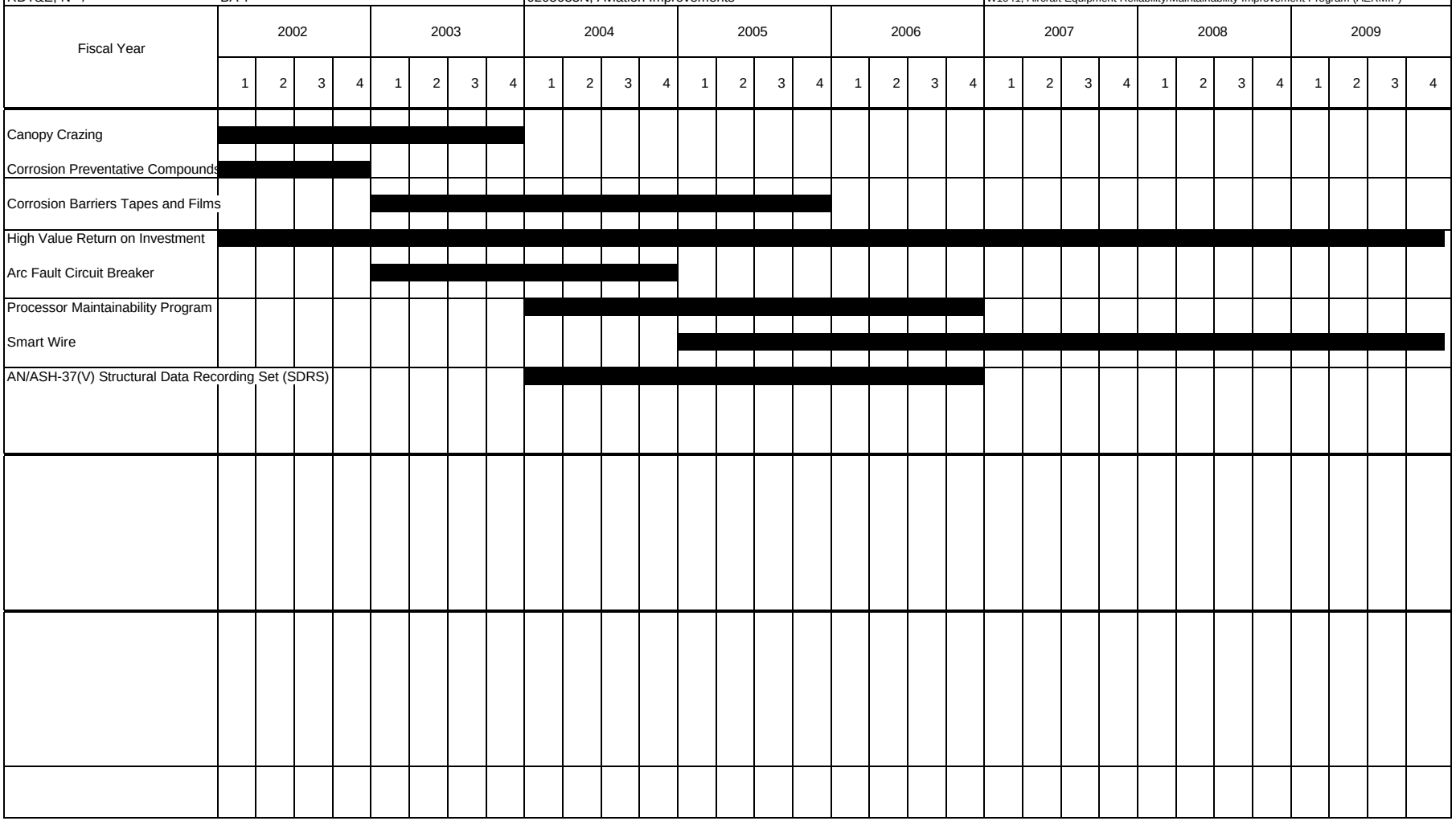
CLASSIFICATION:

EXHIBIT R4, Schedule Profile | DATE: February 2004

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)



R-1 SHOPPING LIST - Item No. 179

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

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **February 2004**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-4**	PROGRAM ELEMENT 0205633N, Aviation Improvements				PROJECT NUMBER AND NAME W1041, Aircraft Equipment Reliability/Maintainability Improvement Program (AERMIP)			
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Canopy Crazing	Q1-Q4	Q1-Q4						
Corrosion Preventative Compounds	Q1-Q4							
Corrosion Barriers Tapes and Films		Q1-Q4	Q1-Q4	Q1-Q4				
High Value Return on Investment	Q1-Q4	Q1-Q4	Q1-Q4	Q1-Q4	Q1-Q4	Q1-Q4	Q1-Q4	Q1-Q4
Arc Fault Circuit Breaker		Q1-Q4	Q1-Q4					
Processor Maintainability Program			Q1-Q4	Q1-Q4	Q1-Q4			
Smart Wire				Q1-Q4	Q1-Q4	Q1-Q4	Q1-Q4	Q1-Q4
AN/ASH-37(V) Structural Data Recording Set (SDRS)			Q1-Q4	Q1-Q4	Q1-Q4			

R-1 SHOPPING LIST - Item No. 179

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2004**	
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 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost		**28.385**	**48.473**	**52.436**	**56.134**	**54.357**	**49.471**	**49.248**
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

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

R-1 SHOPPING LIST - Item No. 179

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0205633N Aviation Improvements	W1355 Aircraft Engine Component Improvmement Program

B. Accomplishments/Planned Program

Platform-Specific Efforts:

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		1.957	2.228	9.095
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 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		1.127	0.743	0.440
RDT&E Articles Quantity				

E-2/C-2/C-130

Incorporate improved blade heaters. Develop improved propeller control system.

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		0.756	1.152	0.879
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. Collect engine parameter flight data required to perform updated engine mission analysis. Initiate the development of improved Eddy Current (EC) inspection techniques for small holes and specific features. Analyze and correlate HPC EC inspection requirements to critical part Fracture Mechanics (FM) capabilities. Investigate propulsion and power system obsolescence. Conduct engine component and propulsion and power electrical system reliability/maintainability analysis. Conduct commercial critical part hardware commonality analysis.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0205633N Aviation Improvements	W1355 Aircraft Engine Component Improvement Program

B. Accomplishments/Planned Program

Platform-Specific Efforts:

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		2.331	2.254	6.658
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 Wittney Associates.

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		0.613	0.524	2.096
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 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		1.842	6.030	3.728
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 Insepction (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.

R-1 SHOPPING LIST - Item No. 179

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0205633N Aviation Improvements	W1355 Aircraft Engine Component Improvement Program

B. Accomplishments/Planned Program

Platform-Specific Efforts:

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		1.632	3.511	9.799
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 interity assessments and the master life management plan.

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		0.893	2.411	2.346
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 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		0.251	0.631	0.598
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.

R-1 SHOPPING LIST - Item No. 179

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0205633N Aviation Improvements	W1355 Aircraft Engine Component Improvement Program

B. Accomplishments/Planned Program

Platform-Specific Efforts:

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost			10.964	9.083
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 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		1.541	3.027	1.220
RDT&E Articles Quantity				

T-45

Address top safety issues reported from fleet. Analysis and redesign components with service revealed deficiencies.

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		15.442	14.998	6.494
RDT&E Articles Quantity				

Multi-Platform Product Support Teams

Projects designed to provide common support to multiple platforms in the areas of improved drive systems, secondary power and mechanical systems; improved tools for performance analysis, modeling and simulation, diagnostics, engine reliability assessment, and structural integrity; improve products and processes for fuels, lubricants, and refueling equipment; improve blade and vane repair processes and life cycle support; and improve electrical system product support, wiring, and battery systems.

R-1 SHOPPING LIST - Item No. 179

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0205633N Aviation Improvements	W1355 Aircraft Engine Component Improvement Program

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2003	FY 2004	FY 2005
Previous President's Budget	29.367	49.018	43.303
Current BES/President's Budget	28.385	48.473	52.436
Total Adjustments	-0.982	-0.545	9.133
Summary of Adjustments			
Congressional program reductions			
Congressional undistributed reductions		-0.545	
Congressional rescissions			
SBIR/STTR Transfer	-0.442		
Economic Assumptions			-0.097
Reprogrammings	-0.540		
Other Adjustments			9.230
Subtotal	-0.982	-0.545	9.133

Schedule: Not applicable

Technical: Not Applicable

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0205633N Aviation Improvements	W1355 Aircraft Engine Component Improvement Program

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name

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)

E. ACQUISITION STRATEGY:

Not applicable

F. MAJOR PERFORMERS:

R-1 SHOPPING LIST - Item No. 179

Exhibit R-3 Cost Analysis (page 1)												Date: February 2004
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	0.251	12/02	0.631	12/03	0.598	12/04		18.466	18.466
Systems Eng F402 Engine Program	SS/CPFF	ROLLS ROYCE - UK	25.222	1.842	12/02	6.030	12/03	3.728	12/04		36.822	36.822
Systems Eng F404/T58/T64 Engine Program	SS/CPFF	GE - MASS	32.199	1.632	12/02	3.511	12/03	9.799	10/04		47.141	47.141
Systems Eng J52 Engine Program	SS/CPFF	P&W - FLORIDA	11.506	2.037	12/02	1.503	12/03	5.849	12/04		20.895	20.895
Systems Eng T56 Engine Program	SS/CPFF	INDIANA	7.653	1.957	02/03	2.228	02/04	9.095	02/05		20.933	20.933
Systems Eng F405 Engine Program	SS/CPAF	ROLLS ROYCE - UK	6.692	1.541	01/03	3.027	12/03	1.220	12/04		12.480	12.480
Systems Eng F/A 18E/F Engine Program	SS/CPFF	GE - MASS	0.664			10.964	12/03	9.083	12/04		20.711	20.711
Systems Eng T700 Engine Program	SS/CPFF	GE - MASS	5.841	1.226	01/03	1.048	01/04	4.192	01/05		12.307	12.307
Systems Eng TF34 Engine Program	SS/CPFF	GE - MASS	5.657	0.756	11/02	1.152	11/03	0.879	11/04		8.444	8.444
Systems Eng V22 Engine Program	SS/CPFF	ROLLS ROYCE - INDIANA	1.000								1.000	1.000
Systems Eng T400 Engine Program	SS/CPFF	P&W - FLORIDA		0.280		1.887	11/03	0.250	12/04		2.417	2.417
Systems Eng J85 Engine Program	SS/CPFF	GE - OK		0.294		0.751	12/03	0.809	11/04		1.854	1.854
Systems Eng Props Program	SS/CPFF	HAM SUNSTRAND - CONN	5.550	1.127	12/02	0.743	12/03	0.440	12/04		7.860	7.860
Systems Eng Contracts under 1.0M	VARIOUS	VARIOUS	12.966	1.171	10/02	1.645	10/03	1.036	10/04	Continuing	Continuing	
Systems Eng Lab Field Activity (1.0 or more)	WX	NAWCAD-PAX	110.118	12.091	10/02	11.265	10/03	4.195	10/04	Continuing	Continuing	
Systems Eng Other In-House Support (1.0M or less)	VARIOUS	VARIOUS	15.330	0.820	10/02	1.150	10/03	0.310	10/04	Continuing	Continuing	
GFE-GFP Fuel Increment	MILSTRIP	DES/DLA	4.355	0.000		0.351	10/03	0.487	10/04	Continuing	Continuing	
Award Fees**	SS/CPAF		1.060	0.439							1.499	1.499
Subtotal Product Development			262.799	27.464		47.886		51.970		Continuing	Continuing	

Remarks:

* F110 (F14 B/D) AF contract has a ten year period of performance.

** Award fees F402 (.205), F402 (.234).

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**			PROGRAM ELEMENT 0205633N Aviation Improvements			PROJECT NUMBER AND NAME 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
Development Support	VARIOUS	VARIOUS	4.446	0.634	10/02	0.403	10/03	0.310	10/04	Continuing	Continuing	
Software Development												
Integrated Logistics Support												
Configuration Management												
Technical Data												
Studies & Analyses												
GFE												
Award Fees												
Subtotal Support			4.446	0.634		0.403		0.310		Continuing	Continuing	

Remarks:

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 3)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**			PROGRAM ELEMENT NUMBER AND NAME 0205633N Aviation Improvements			PROJECT NUMBER ANI 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
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				0.043	10/02	0.050	10/03	0.050	10/04	Continuing	Continuing	
Transportation												
SBIR Assessment												
Subtotal Management			1.023	0.141		0.117		0.103		Continuing	Continuing	
Remarks:												
Total Cost			270.962	28.385		48.473		52.436		Continuing	Continuing	
Remarks:												

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2004**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT NUMBER AND NAME 0205633N, Aviation Improvements				PROJECT NUMBER AND NAME W9109, Age Exploration Model			
COST ($ in Millions)		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost			**3.708**					
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

Aircraft Age Exploration Model for Naval Aircraft platforms. The model will use existing Naval Aircraft data to establish connections between age and reliabilty, maintainability, and readiness and will provide the Navy with a valuable tool for understanding, predicting, and communicating impacts of decisions to extend aircraft service lives and for mitigating risks associated with these decisions. This is a continuation of efforts initiatied in FY02 to add enhanced functionallity to include automatic identification of reliability degredation items and automatic tracking of actuals against model generated predictions.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0205633N, Aviation Improvements	W9109, Age Exploration Model

B. Accomplishments/Planned Program

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost			3.308	
RDT&E Articles Quantity				

Software Development
Develop enhancements to computer model that integrates existing maintenance data with predictive computations to determine future reliability and maintianability conditions for aircraft and components. Enhancements include automated generation of reliability and maintainabilty opportunity triggers and also real time tracking of actual results against predictied performance.

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost			0.150	
RDT&E Articles Quantity				

Technical data and training materials
Develop technical data to include user manuals and other training materials. Conduct user training sessions as required for model validation.

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost			0.250	
RDT&E Articles Quantity				

Conduct model validation studies
Using a combination of historical and current maintenance data perform model verification and validation studies to demonstrate acceptable level of confidence in outputs produced by the model

R-1 SHOPPING LIST - Item No. 179

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0205633N, Aviation Improvements	W9109, Age Exploration Model

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2003	FY 2004	FY 2005
Previous President's Budget:	0.000	0.000	0.000
Current BES/President's Budget	0.000	3.708	0.000
Total Adjustments	0.000	3.708	0.000
Summary of Adjustments			
Congressional program reductions			
Congressional undistributed reductions			
Congressional rescissions			
SBIR/STTR Transfer			
Economic Assumtions			
Other Adjustments		-0.042	
Reprogrammings			
Congressional increases		3.750	
Subtotal	0.000	3.708	0.000

Schedule:

N/A

Technical:

N/A

R-1 SHOPPING LIST - Item No. 179

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0205633N, Aviation Improvements	W9109, Age Exploration Model

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost

Related RDT&E:
0205633N, Aircraft Equipment Reliability/Maintainability Improvement Program, W1041
0205633N, Automated Wire Analysis, W9426
0205633N, NAVAIR Technology Commercialization Initiative, W9428

E. ACQUISITION STRATEGY:

N/A

F. MAJOR PERFORMERS:

N/A

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**			PROGRAM ELEMENT 0205633N, Aviation Improvements			PROJECT NUMBER AND NAME W9109, Age Exploration Model						
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	gsa/ffp	Mantech, MD				2.958	02/04				2.958	2.958
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data	gsa/ffp	Mantech, MD				0.150	02/04				0.150	0.150
Studies & Analyses											0.000	
GFE	gsa/ffp	Mantech, MD				0.050	02/04				0.050	0.050
Award Fees											0.000	
Subtotal Support			0.000	0.000		3.158		0.000		0.000	3.158	

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**		PROGRAM ELEMENT 0205633N, Aviation Improvements			PROJECT NUMBER AND NAME W9109, Age Exploration Model							
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	gsa/ffp	Mantech, MD				0.250	02/04				0.250	0.250
Government Engineering Support	WX	NAWCAD				0.200	02/04				0.200	
Program Management Support	WX	NAWCAD				0.090	02/04				0.090	
Travel	WX	NAWCAD				0.010	02/04				0.010	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			0.000	0.000		0.550		0.000		0.000	0.550	
Remarks:												
Total Cost			0.000	0.000		3.708		0.000		0.000	3.708	
Remarks:												

R-1 SHOPPING LIST - Item No. 179

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2004**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT NUMBER AND NAME 0205633N, Aviation Improvements				PROJECT NUMBER AND NAME W9426, Automated Wire Analysis			
COST ($ in Millions)		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost			**2.967**					
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

Current practices have technicians perform electrical testing on aircraft using both manual and automated methods. Once a short or open is found using existing test equipment, the technician must then find the physical location of the fault, one wire at a time, using pin-to-pin tests with handheld multi-meters and visual inspection. This generally involves at least two individuals connecting leads to each end of a wire to be tested. This is a slow process and reactive in nature. New commercial technology that incorporates Standing Wave Reflectometry (SWR) can proactively identify all hard faults (e.g. shorts and opens) of wiring malfunctions from a single end wire test, verify system modifications, and localize aircraft wiring malfunctions to within inches. This capability does not exist in the U.S. Navy today. A single wiring analyzer can serially test up to 1,152 wires at a time and the system can be expanded to test up to a maximum of 128,000 test points. This effort is to develop, validate and qualify this capability for Naval Avaition applications.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0205633N, Aviation Improvements	W9426, Automated Wire Analysis

B. Accomplishments/Planned Program

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost			1.767	
RDT&E Articles Quantity				

Software development
Develop the software required to utilize the new technology that incorporates Standing Wave Reflectometry (SWR) that can proactively identify all hard faults (e.g. shorts and opens) of wiring malfunctions from a single end wire test, verify system modifications, and localize aircraft wiring malfunctions to within inches.

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost			0.900	
RDT&E Articles Quantity				

In-Service validation testing
Testing to ensure that the product works in a true fleet environment. Aircraft to be studied are the EA-6B, C-2, S-3, E-6, H-46, and H-53.

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost			0.300	
RDT&E Articles Quantity				

Tech data and training materials
User training and the development of the materials required for training and after training reference.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0205633N, Aviation Improvements	W9426, Automated Wire Analysis

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2003	FY 2004	FY 2005
Previous President's Budget:	0.000	0.000	0.000
Current BES/President's Budget	0.000	2.967	0.000
Total Adjustments	0.000	2.967	0.000
Summary of Adjustments			
Congressional program reductions			
Congressional undistributed reductions		-0.033	
Congressional rescissions			
SBIR/STTR Transfer			
OSD			
Other Adjustments			
Economic Assumtions			
Reprogrammings			
Congressional increases		3.000	
Subtotal	0.000	2.967	0.000

Schedule:

N/A

Technical:

N/A

R-1 SHOPPING LIST - Item No. 179

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0205633N, Aviation Improvements	W9426, Automated Wire Analysis

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost

Related RDT&E:
0205633N, Aircraft Equipment Reliability/Maintainability Improvement Program, W1041
0205633N, Age Exploration Model, W9109
0205633N, NAVAIR Technology Commercialization Initiative, W9428

E. ACQUISITION STRATEGY:

N/A

F. MAJOR PERFORMERS:

N/A

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**			PROGRAM ELEMENT 0205633N, Aviation Improvements			PROJECT NUMBER AND NAME W9426, Automated Wire Analysis						
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	TBD	Eclypse, CA	0.000			1.767	03/04				1.767	1.767
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data	TBD	Eclypse, CA	0.000			0.200	03/04				0.200	0.200
Studies & Analyses											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Support			0.000	0.000		1.967		0.000		0.000	1.967	
Remarks:												

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**		PROGRAM ELEMENT 0205633N, Aviation Improvements			PROJECT NUMBER AND NAME W9426, Automated Wire Analysis							
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	TBD	Eclypse, CA	0.000			0.400	03/04				0.400	0.400
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		0.400		0.000		0.000	0.400	
Remarks:												
Contractor Engineering Support											0.000	
Government Engineering Support	WX	NAWCAD	0.000			0.450	03/04				0.450	
Program Management Support	WX	NAWCAD	0.000			0.150	03/04				0.150	
Travel											0.000	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			0.000	0.000		0.600		0.000		0.000	0.600	
Remarks:												
Total Cost			0.000	0.000		2.967		0.000		0.000	2.967	
Remarks:												

R-1 SHOPPING LIST - Item No. 179

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2004**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT NUMBER AND NAME 0205633N Aviation Improvements				PROJECT NUMBER AND NAME H9427 Digital Integrated Cockpit Display			
COST ($ in Millions)		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
`			**0.989**					
RDT&E Articles Qty			**1**					

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The TH-57 Helicopter is the Navy's only primary helicopter pilot training platform, and is expected to remain in that capacity until 2025. All Navy fleet helicopters will have digital cockpits by 2012. To remain viable as a effective training platform, which meets the training requirements of an all digital helicopter fleet, the TH-57 cockpit can best utilize a digital design to effect greater aircraft training utilization. Research and Development funds will be utilized to produce a product that keeps pace with the rapidly changing fleet helicopter pilot training requirements and provides increased hard landing/crash and exceedence warning system protection to aircrews. The following areas will be explored Requirement Analysis, Cost Estimation, Crew Systems/Human System Integration, Logistics Support Analysis, and Aircraft Integration.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0205633N Aviation Improvements	H9427 Digital Integrated Cockpit Display

B. Accomplishments/Planned Program

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost			0.290	
RDT&E Articles Quantity			1	

Test article development and integration.

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost			0.699	
RDT&E Articles Quantity				

The following areas will be explored, Requirement Analysis, Cost Estimation, Crew Systems/Human System Integration, Logistics Support Analysis, and Aircraft Integration.

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

R-1 SHOPPING LIST - Item No. 179

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**			PROGRAM ELEMENT 0205633N Aviation Improvements			PROJECT NUMBER AND NAME H9427 Digital Integrated Cockpit Display						
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/SSP	L-3COM, Madison, MS				0.355	03/04				0.355	0.355
Ancillary Hardware Development											0.000	
Aircraft Integration	SS/SSP	L-3COM, Madison, MS				0.344	03/04				0.344	0.344
Ship Integration											0.000	
Ship Suitability											0.000	
Systems Engineering	SS/SSP	L-3COM, Madison, MS				0.290	03/04				0.290	0.290
Training Development											0.000	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			0.000	0.000		0.989		0.000		0.000	0.989	
Remarks:												
Development Support											0.000	
Software Development											0.000	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
Studies & Analyses											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: **February 2004**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**		PROGRAM ELEMENT 0205633N Aviation Improvements				PROJECT NUMBER AND NAME H9427 Digital Integrated Cockpit Display						
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			0.000	0.000		0.989		0.000		0.000	0.989	
Remarks:												

R-1 SHOPPING LIST - Item No. 179

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																															DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**									PROGRAM ELEMENT NUMBER AND NAME 0205633N Aviation Improvements												PROJECT NUMBER AND NAME H9427 Digital Integrated Cockpit Display											
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 △																						
Prototype Phase										▭																						
Test & Evaluation Milestones																																
Integration Test											△—△																					
Production Milestones																																
Deliveries																																

R-1 SHOPPING LIST - Item No. 179

CLASSIFICATION:

Exhibit R-4a, Schedule Detail					DATE: **February 2004**			
APPROPRIATION/BUDGET ACTIVITY **RDT&BA-7**	PROGRAM ELEMENT 0205633N Aviation Improvements				PROJECT NUMBER AND NAME H9427 Digital Integrated Cockpit Display			
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Prototype Phase			2Q-4Q	1Q				
Integration Testing			3Q-4Q					

R-1 SHOPPING LIST - Item No. 179

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2004**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT NUMBER AND NAME 0205633N, Aviation Improvements				PROJECT NUMBER AND NAME W9428, NAVAIR Technology Commercialization Initiative			
COST ($ in Millions)		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost			**1.483**					
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The NAVAIR Technology Commercialization Initiative is an effort to transition commercial technology for Naval Avaition Applications.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0205633N, Aviation Improvements	W9428, NAVAIR Technology Commercialization Initiative

B. Accomplishments/Planned Program

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		0.000	0.933	0.000
RDT&E Articles Quantity				

Technology Development Fund
Funding to be awarded for development and validation of new technologies. Funding decisions are to be based on the recommendations of the proposal review team which comprises experts from NAVAIR, Maryland Governor's Office and local industry coalition.

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost			0.400	
RDT&E Articles Quantity				

Technical Oversight
Spans the efforts from the investigations required to ensure the competence of the proposing companies (both technical and financial) through prototype demonstration and the planning for implementation of successfully demonstrated technology.

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost			0.150	
RDT&E Articles Quantity				

Programatic and Financial management
Efforts associated with the releasing of awards, receiving of deliverables, tracking of progress, and production of programatic status reports.

R-1 SHOPPING LIST - Item No. 179

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0205633N, Aviation Improvements	W9428, NAVAIR Technology Commercialization Initiative

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2003	FY 2004	FY 2005
Previous President's Budget:	0.000	0.000	0.000
Current BES/President's Budget	0.000	1.483	0.000
Total Adjustments	0.000	1.483	0.000
Summary of Adjustments			
Congressional program reductions			
Congressional undistributed reductions		-0.017	
Congressional rescissions			
SBIR/STTR Transfer			
OSD			
Other Adjustments			
Economic Assumtions			
Reprogrammings			
Congressional increases		1.500	
Subtotal	0.000	1.483	0.000

Schedule:

N/A

Technical:

N/A

R-1 SHOPPING LIST - Item No. 179

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0205633N, Aviation Improvements	W9428, NAVAIR Technology Commercialization Initiative

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost

Related RDT&E:
0205633N, Aircraft Equipment Reliability/Maintainability Improvement Program, W1041
0205633N, Age Exploration Model, W9109
0205633N, Automated Wire Analysis, W9426

E. ACQUISITION STRATEGY:

N/A

F. MAJOR PERFORMERS:

N/A

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**		PROGRAM ELEMENT 0205633N, Aviation Improvements			PROJECT NUMBER AND NAME W9428, NAVAIR Technology Commercialization 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
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	ss/ffp	Patuxent Partnership, MD	0.000			1.333	02/04				1.333	1.333
GFE											0.000	
Award Fees											0.000	
Subtotal Support			0.000	0.000		1.333		0.000		0.000	1.333	
Remarks:												

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**		PROGRAM ELEMENT 0205633N, Aviation Improvements				PROJECT NUMBER AND NAME W9428, NAVAIR Technology Commercialization 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	WX	NAWC-AD, Pax River MD	0.000			0.150	02/04				0.150	
Travel											0.000	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			0.000	0.000		0.150		0.000		0.000	0.150	
Remarks:												
Total Cost			0.000	0.000		1.483		0.000		0.000	1.483	
Remarks:												

R-1 SHOPPING LIST - Item No. 179

FY 2005 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET DATE: February 2004
Exhibit R-2a

BA: 07 PROGRAM ELEMENT: 0205658N PROGRAM ELEMENT TITLE: Navy Science Assistance Program
PROJECT NUMBER: R0834 PROJECT TITLE: NAVY SCIENCE ASSISTANCE PROGRAM

COST: (Dollars in Thousands)

Project Number & Title	FY 2003 Actual	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate
R0834 NAVY SCIENCE ASSISTANCE PROGRAM	7,365	3,703	3,821	3,915	3,370	3,407	3,552
R2701 LASH Airship Test Platform Support	1,621	0	0	0	0	0	0
R9111 LASH MCM/ISR	6,473	6,923	0	0	0	0	0
Totals	15,459	10,626	3,821	3,915	3,370	3,407	3,552

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.

FY 2005 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET DATE: February 2004
Exhibit R-2a

BA: 07 PROGRAM ELEMENT: 0205658N PROGRAM ELEMENT TITLE: Navy Science Assistance Program
PROJECT NUMBER: R0834 PROJECT TITLE: NAVY SCIENCE ASSISTANCE PROGRAM

PROGRAM CHANGE SUMMARY:

	FY 2003	FY 2004	FY 2005
FY 2004-2005 President's Budget Submission	12,981	3,708	3,849
Cong. Rescissions/Adjustments/Undist.Reductions	0	-79	0
Congressional Actions	0	7,000	0
Execution Adjustments	2,695	0	0
Inflation Savings	0	0	-12
Manpower Adjustments	0	0	-6
Rate Adjustments	0	-3	-10
SBIR Assessment	-217	0	0
FY 2005 President's Budget Submission	15,459	10,626	3,821

PROGRAM CHANGE SUMMARY EXPLANATION:
Technical: Not applicable

Schedule: Not applicable

FY 2005 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET DATE: February 2004
Exhibit R-2a

BA: 07 PROGRAM ELEMENT: 0205658N PROGRAM ELEMENT TITLE: Navy Science Assistance Program
PROJECT NUMBER: R0834 PROJECT TITLE: NAVY SCIENCE ASSISTANCE PROGRAM

COST: (Dollars in Thousands)

Project Number & Title	FY 2003 Actual	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate
R0834 NAVY SCIENCE ASSISTANCE PROGRAM	7,365	3,703	3,821	3,915	3,370	3,407	3,552

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 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) who, upon completion of their Science Advisor tours, 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.

B. ACCOMPLISHMENTS/PLANNED PROGRAM:

	FY 2003	FY 2004	FY 2005
Naval Fleet/Force Technology Innovation Office	4,670	3,703	3,821

FY 2003 Accomplishments:

• Ensured that the Fleet/Force (F/F) helps shape the Department of the Navy (DoN) investment in Science and Technology (S&T).

• Developed teaming relationships to rapidly demonstrate and transition technology, supports development of technology-based capability options for naval forces.

• Enabled warfighting innovations based on technical and conceptual possibilities.

• Accomplished proactive connectivity and collaboration between DoN S&T and Joint, Navy, and Marine Corps commands worldwide.

• Provided Science Advisors to Joint, Navy, and Marine Corps operational and strategic planning commands.

• Collaborated with the F/F to identify specific solutions to known operational capability needs and provides the means to develop and demonstrate prototype systems.

• Provided insight into issues associated with Naval Warfighting capabilities, thereby influencing long term S&T programs.

• Developed leaders among the civilian scientists and engineers in the Naval Research Enterprise (NRE)-they return to the NRE with first hand knowledge of the F/F, warfighting issues, and strategic decision making.

• Enabled a continuous communication and collaboration between the warfighters, the technical community, and strategic development commands.

FY 2004 Plans:

Continue FY 03 efforts.

FY 2005 Plans:

Continue FY 04 efforts.

C. OTHER PROGRAM FUNDING SUMMARY:

RELATED RDT&E:

- PE 0601152N In-House Laboratory Independent Research
- PE 0601153N Defense Research Sciences
- PE 0602114N Power Projection Applied Research
- PE 0602123N Force Protection Applied Research
- PE 0602131M Marine Corps Landing Force Technology
- PE 0602235N Common Picture Applied Research
- PE 0602236N Warfighter Sustainment Applied Research
- PE 0602271N RF Systems Applied Research
- PE 0602435N Ocean Warfighting Environment Applied Research
- PE 0602747N Undersea Warfare Applied Research
- PE 0602782N Mine and Expeditionary Warfare Applied Research
- PE 0603114N Power Projection Advanced Technology
- PE 0603123N Force Protection Advance Technology
- PE 0603235N Common Picture Advanced Technology
- PE 0603236N Warfighter Sustainment Advanced Technology
- PE 0603271N RF Systems Advanced Technology
- PE 0603640M USMC Advance Technology Demonstration (ATD)
- PE 0603727N Joint Experimentation
- PE 0603729N Warfighter Protection Advanced Technology
- PE 0603747N Undersea Warfare Advanced Technology
- PE 0603758N Navy Warfighting Experiments and Demonstrations
- PE 0603782N Mine and Expeditionary Warfare Advanced Technology

D. ACQUISITION STRATEGY:

Not applicable.

CONGRESSIONAL PLUS-UPS:

R2701	FY 2003	FY 2004
LASH Airship Test Platform Support	1,621	0

• Developed a demonstration program using a subcontracted, commercial airship. The airship deployed from Elizabeth City, NC and St. Augustine, FL.

• Collected 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.

• Deployed the airship for force protection during the Marine Corps Marathon in Washington, DC.

R9111	FY 2003	FY 2004
LASH MCM/ISR	6,473	6,923

FY 03 Accomplishments:

Augmented the development of a hyperspectral based, airborne sensor for near shore minefield classification.

• Incorporated improved Navigation/Stablilization system capabilities into the Pod/Sensor system.

• Developed automatic detection algorithm supported by flight data.

• Participated in Exercise Millennium Challenge with the Navy's Very Shallow Water (VSW) Detachment to detect mines in the VSW and Surf Zone.

• Continued to be guided by metrics determined in concert with OPNAV, Navy acquisition, and Marine Corps Systems Command.

• Tested the new airborne sensor's effectiveness in detecting mines in the surf zone.

FY 04 Plan:

• Expand multispectral data collection in the surf zone to include adverse environments and continue to refine mine detection algorithms.

• Construct and deliver to the government a multispectral sensor for the detection of mines and obstacles in the surf zone.

EXHIBIT R-2, RDT&E Budget Item Justification					DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /BA-7 Operational Sys Dev**		PROGRAM ELEMENT (PE) NAME AND NO. **0206313M Marine Corps Communications Sys**							
COST ($ in Millions)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Total PE Cost	**197.524**	**247.179**	**268.638**	**219.349**	**221.868**	**108.399**	**89.479**	**Cont**	**Cont**
C2270 Command Post Systems	**39.487**	**9.064**	**10.727**	**12.308**	**9.932**	**8.792**	**9.248**	**Cont**	**Cont**
C2272 Intelligence C2 Systems	**24.129**	**17.759**	**32.294**	**27.668**	**20.964**	**17.441**	**15.566**	**Cont**	**Cont**
C2273 Air Operations C2 Systems	**62.275**	**94.832**	**99.834**	**81.526**	**105.786**	**31.135**	**19.923**	**Cont**	**Cont**
C2274 Warfare Systems	**8.142**	**12.965**	**8.136**	**5.437**	**4.527**	**4.222**	**4.608**	**Cont**	**Cont**
C2275 Radio Systems	**0.565**	**8.772**	**8.670**	**4.865**	**4.328**	**4.222**	**3.550**	**Cont**	**Cont**
C2276 Communications Switching & Control Systems	**2.773**	**6.449**	**3.803**	**4.663**	**3.913**	**4.039**	**3.430**	**Cont**	**Cont**
C2277 System Engineering & Integration	**8.918**	**8.762**	**7.960**	**9.567**	**8.744**	**9.030**	**9.204**	**Cont**	**Cont**
C2278 Air Defense Weapons Systems	**23.238**	**23.338**	**22.765**	**6.429**	**11.075**	**10.537**	**5.798**	**Cont**	**Cont**
C2315 Training Devices/Simulators	**7.277**	**12.278**	**4.863**	**8.267**	**5.634**	**4.284**	**4.443**	**Cont**	**Cont**
C2510 MAGTF CSSE & SE	**3.215**	**22.238**	**18.034**	**10.611**	**8.123**	**8.598**	**8.633**	**Cont**	**Cont**
C3099 Radar Systems	**0.000**	**20.141**	**51.552**	**48.008**	**38.842**	**6.099**	**5.076**	**Cont**	**Cont**
C9273 Defense Emergency Response Fund (DERF)	**10.640**	**0.149**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**Cont**	**Cont**
C9276 Radar and Marine Corps Ship Maneuver	**6.865**	**10.432**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**17.297**
Quantity of RDT&E Articles									

EXHIBIT R-2, RDT&E Budget Item Justification	DATE: **February 2004**
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:

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

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

This program is funded under OPERATIONAL SYSTEMS DEVELOPMENT because it encompasses engineering and manufacturing development for upgrade of existing, operational systems.

B. PROGRAM CHANGE SUMMARY

	FY 2003	FY 2004	FY 2005
(U) FY 2003 President's Budget:	196.004	235.722	267.268
(U) Adjustments from the President's Budget:			
(U) Congressional/OSD Program Reductions			
(U) Congressional Rescissions			
(U) Congressional Increases	1.400	13.950	
(U) Reprogrammings	3.794	-1.000	13.580
(U) SBIR/STTR Transfer	-3.674		
(U) Minor Affordability Adjustment		-1.493	-12.210
(U) FY 2004 Presidential Budget:	197.524	247.179	268.638

CHANGE SUMMARY EXPLANATION:

(U) Funding: See Above.

(U) Schedule: Not Applicable.

(U) Technical: Not Applicable.

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2004		
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 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	**39.487**	**9.064**	**10.727**	**12.308**	**9.932**	**8.792**	**9.248**	**Cont**	**Cont**
RDT&E Articles Qty									

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

(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.

1. MAGTF Software Baseline (MSBL). MAGTF Software Baseline (MSBL) is an evolutionary software acquisition program that provides common software functionality to enhance and improve the capability and interoperability between multiple Marine Corps MAGTF C4ISR systems. The common software functionality provides the warfighter situational awareness and allows the Commander to successfully operate in a joint/combined environment. This common software functionality is accomplished through two separate but interrelated baselines software development efforts. The Common Operating Environment (COE) Unix baseline, which supports Unix based server systems and the Command and Control Personal Computer (C2PC) baseline which supports Windows based tactical workstations/systems used at the company and above levels. A “light” version of C2PC is being developed for tactical workstations/systems used at the platoon and below level.

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.

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).

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.

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 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.

6. GCCS Integrated Imagery and Intelligence (GCCS-I^3) 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-I^3 operates in joint and service specific battlespace and is interoperable, transportable, and compliant with the DoD mandated Common Operating Environment (COE).

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2004
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**

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 harware/software upgrades and enhancements that allow interoperability with other C4I systems.

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.

9. Single Integrated Air Picture (SIAP) is the product of fused, common, continual, coherent, unambiguous tracks of airborne objects of interest withing 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.

10. Target Location Designation and Hand-Off System (TLDHS) - Provides fire support observers/controllers (OCs) with the abiilty to: observe their area of interest, quickly and accurately locate ground targets, and digitally request and coordinate target engagements by field artillery (FA), close air support (CAS), and naval surface fire support (NSFS). TLDHS will also provide the capability to designate targets for laser-guided munitions and laser spot trackers. TLDHS is comprised of and integrates two major subsystems: the Targeting Subsystem and the Target Hand-Off Subsystem. USMC MS III for TLDHS was 2Q03.

(U) B. ACCOMPLISHMENTS/ PLANNED PROGRAM:

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.005**	**0.160**	**0.254**
RDT&E Articles Qty			

TCO: Program management and engineering support.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.058**	**0.180**	**0.244**
RDT&E Articles Qty			

TCO: Server testing and integration to develop additional functional capabilities.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.125**	**0.215**
RDT&E Articles Qty			

TCO: Integrate software changes into new system and perform testing.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.373**	**0.337**
RDT&E Articles Qty			

TCO: Testing and validations of advanced concepts and technologies.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.327**	**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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.130**	**0.000**	**0.000**
RDT&E Articles Qty			

IAS MOD: Software modifications to support USMC joint interoperability.

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2004
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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.474**	**0.000**	**0.000**
RDT&E Articles Qty			

IAS MOD: Performed IOS Client Hardware Trade Study.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**1.247**	**1.200**	**1.300**
RDT&E Articles Qty			

MAGTF C4I BASELINE: Build, test, field and support COE compliant versions of GCCS-J in support of the six Warfighting functions. This effort focuses primarily on the integration, inclusion and incorporation of Fire Support, Maneuver and Intel capabilities.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.466**	**0.525**	**0.622**
RDT&E Articles Qty			

MAGTF C4I BASELINE: Program Management Support.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.365**	**0.390**	**0.390**
RDT&E Articles Qty			

MAGTF C4I BASELINE: Conduct disciplined risk management, requirements tracking and systems engineering and analysis efforts.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**3.147**	**2.916**	**1.941**
RDT&E Articles Qty			

MAGTF C4I BASELINE: Development of MSBL Client in MS Windows environment (C2PC).

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.408**	**0.900**	**1.200**
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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.029**	**0.000**	**0.000**
RDT&E Articles Qty			

AFATDS: Final development and testing of AFATDS V6.3.2 software. Developed increased interoperability with all other MAGTF C4I automated systems. Increased software effectiveness with, and in support of Marine Corps fire support systems.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**1.612**	**0.000**	**0.000**
RDT&E Articles Qty			

AFATDS: Developed AFATDS V7 software. Simplified human factors interface to allow easier initial and sustainment training. Increased functionality with Marine Corps fire support systems (including Towed Artillery Digitization.) Enhanced air mission processing capabilities of system. Further enhanced human factors interface to provide simple and familiar view to users. Developed better interface with GDU on M198.

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2004
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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.925**	**0.000**	**0.000**
RDT&E Articles Qty			

AFATDS: Field Integration Team (FIT) testing, software development, and FMF interoperability support.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.153**	**0.558**	**0.203**
RDT&E Articles Qty			

AFATDS Program management and engineering support.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.220**	**0.000**	**0.000**
RDT&E Articles Qty			

AFATDS: MCTSAA tested new SW and SOST.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.000**	**0.950**
RDT&E Articles Qty			

AFATDS: Development of improved interoperability with USMC and Joint systems.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.000**	**1.512**
RDT&E Articles Qty			

AFATDS: Development of AV7.x software. Increased functionality, interoperability, and ease of use. Better interface with USMC and USN systems.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**1.420**	**0.043**	**0.000**
RDT&E Articles Qty			

GCCS-I3: Operational system development.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**7.889**	**0.000**	**0.000**
RDT&E Articles Qty			

UOC: Engineering and manufacturing development effort included design of production representative modules.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.425**	**0.000**	**0.000**
RDT&E Articles Qty			

UOC: Operational Testing.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**1.625**	**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.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2004
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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.000**	**0.592**
RDT&E Articles Qty			

DACT: DACT Security Accredidation, Develop software recovery solution.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.020**	**0.100**
RDT&E Articles Qty			

DACT: DACT FMF test support.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.424**	**0.252**	**0.250**
RDT&E Articles Qty			

DACT: DACT Program Management Support

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.200**	**0.200**	**0.105**
RDT&E Articles Qty			

DACT: Prototype/Internal SAASM GPS development.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.587**	**0.000**	**0.000**
RDT&E Articles Qty			

DACT: Internal 188-220 modem development

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**1.500**	**0.689**	**0.300**
RDT&E Articles Qty			

DACT: Development, integration, testing and fielding of the Tank and DACT Vehicle Mount.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.239**	**0.372**	**0.212**
RDT&E Articles Qty			

DACT: Dismounted DACT Technology Insertion (Wireless comms).

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.019**	**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

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**1.538**	**0.000**	**0.000**
RDT&E Articles Qty			

SIAP: Implement JROC approved Block 0 changes in the TAOM.

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2004
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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**7.897**	**0.000**	**0.000**
RDT&E Articles Qty			

SIAP: Service System Engineering support to SIAP SE TF. Funding for this program has been moved to Project C2273, PE 0206313 in FY04 and beyond.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**6.177**	**0.142**	**0.000**
RDT&E Articles Qty			

TLDHS: Testing, development, and integration support.

(U) Total $	**39.487**	**9.064**	**10.727**

(U) PROJECT CHANGE SUMMARY:	**FY 2003**	**FY 2004**	**FY 2005**
(U) FY 2004 President's Budget:	**27.943**	**9.090**	**7.980**
(U) Adjustments from the President's Budget:			
(U) Congressional Program Reductions			
(U) Congressional/OSD Program Reductions			
(U) Congressional Increase			
(U) Congressional Rescissions			
(U) Minor Affordability Adjustment		-0.168	-0.740
(U) Reprogrammings	11.871	0.142	3.487
(U) SBIR/STTR Transfer	-0.327		
(U) FY 2005 President's Budget:	**39.487**	**9.064**	**10.727**

CHANGE SUMMARY EXPLANATION:
(U) Funding: See Above.
(U) Schedule: Not Applicable.
(U) Technical: Not Applicable.

(U) C. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl	Total Cost
PMC BLI# 463100 TCO	0.900	0.406	3.259	0.191	0.390	0.390	0.190	Continuing	Continuing
PMC BLI# 474900 IAS MOD	0.665	1.347	1.354	1.375	1.398	1.445	1.474	Continuing	Continuing
PMC BLI# 463100 AFATDS	1.164	0.674	0.173	4.221	8.128	8.987	3.305	Continuing	Continuing
PMC BLI# 463100 UOC	25.241	0.000	0.000	0.000	0.000	0.000	0.000	0.000	25.241
PMC BLI# 419000 UOC	0.000	29.010	35.933	30.109	54.471	96.523	112.784	Continuing	Continuing
PMC BLI# 463100 DACT	6.372	4.128	0.939	1.385	0.200	0.300	0.300	Continuing	Continuing
PMC BLI# 473300 TLDHS	9.062	28.235	0.000	0.000	0.000	0.000	0.000	0.000	37.297

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2004
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**

(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 Northrop Grumman Information Technology (NGIT), San Diego, CA for development of MSBL client in MS Windows environment and development of client for foot mobile Marines in Windows CEOSS environment. Funds applied to Titan Corporation, Dumfries, VA and NGIT, Stafford, VA under the CEOSS contract for program management and engineering support. Funds applied to MCR Federal for C2PC Life Cycle Cost Estimate development. Funds applied to SPAWAR, Charleston, SC for build, test, and support COE compliant versions of GCC-J in support of six Warfighting functions.

(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. The Dismounted DACT is a Command Control Situational Awareness hand-held device that will be fielded to echelons below company level.

(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 Corportation. 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.

(U) TLDHS: The acquistion of components (software/hardware) for the TLDHS initiative wil maximize the use of existing COTS, GOTS, NDI and GFE. Software development is contracted via general services administration schedules.

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2004
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**

E. Major Performers:

TACTICAL COMBAT OPERATIONS (TCO)

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 03 NORTHROP GRUMMAN INFORMATION TECHNOLOGY (NGIT), San Diego, CA. Software development: C2PC and C2PC Light. Feb 03.
NORTHROP GRUMMAN INFORMATION TECHNOLOGY (NGIT), Stafford, VA. Engineering support. Oct 02.
SPACE AND NAVAL WARFARE SYSTEMS CENTER (SPAWAR) Charleston, SC. Software integration, building, testing and fielding MSBL. Dec 02.
TITAN CORPORATION, Dumfries, VA. Program Management Support. Oct 02.
MCR FEDERAL, McClean, VA. Life Cycle Cost Estimate Development. May 02.
JB MANAGEMENT, Eaton, NJ. Common Message Processor Development. Apr 02.

FY 04 NORTHROP GRUMMAN INFORMATION TECHNOLOGY (NGIT), San Diego, CA. Software development C2PC and C2PC Light. Estimated award date Dec 03.
SPACE AND NAVAL WARFARE SYSTEMS CENTER (SPAWAR) Charleston, SC. Software integration, building, testing and fielding MSBL. Estimated award Dec 04. NORTHROP GRUMMAN INFORMATION TECHNOLOGY (NGIT), Stafford, VA. Engineering support. Oct 03.
TITAN CORPORATION, Dumfries, VA. Program Management Support. Oct 03.

FY 05 NORTHROP GRUMMAN INFORMATION TECHNOLOGY (NGIT), San Diego, CA. Software development: C2PC and C2PC Light. Est award Dec 04.
SPACE AND NAVAL WARFARE SYSTEMS CENTER (SPAWAR) Charleston, SC. Software integration, building, testing and fielding MSBL. Est award Dec 04.
TITAN CORPORATION, Dumfries, VA. Program Management Support. Est award Oct 04.

ADVANCED FIELD ARTITLEY TACTICAL DATA SYSTEM (AFATDS)

FY 03 RAYTHEON, Fort Wayne IN. Develop and test software. Dec 02.
MCOTEA, Quantico VA. Test V6.3.2 software. Award Dec 02.
MCTSSA, Software testing. Award Mar 03.

FY 04 RAYTHEON, Fort Wayne IN. Develop and test software. Dec 03.
MCOTEA, Quantico VA. Test V6.3.2 software. Award Dec 03.
MCTSSA, Software testing. Award Mar 04.

FY 05 RAYTHEON, Fort Wayne IN. Develop and test software. Dec 04.
MCOTEA, Quantico VA. Test V6.3.2 software. Award Dec 04.
MCTSSA, Software testing. Award Mar 05.

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2004
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**

DATA AUTOMATED COMMERCIAL TERMINAL (DACT)

FY 03 RAYTHEON, Fort Wayne, IN, Develop and test Tank Vehicle Mount, Oct 02.
NORTHROP GRUMMAN INFORMATION TECHNOLOGY (NGIT), Stafford, VA. Program support. Oct 02.
RAYTHEON (via Army CECOM) Ft. Monmouth, NJ. Modem integration. Jan 03.
FY 04 NORTHROP GRUMMAN, San Diego, CA. Sotfware Development, Jan 03.
NORTHROP GRUMMAN INFORMATION TECHNOLOGY (NGIT), Stafford, VA. Program Support. Oct 03.
GENERAL DYNAMICS (via Army CECOM), Wireless communication, Feb 04.
COMTECH, Germantown, MD. Over the horizon communication, Mar 04.

DATA AUTOMATED COMMERCIAL TERMINAL (DACT) CONT

FY 05 NORTHROP GRUMMAN, San Diego, CA. Software Development, Jan 04.
NORTHROP GRUMMAN INFORMATION TECHNOLOGY (NGIT), Stafford, VA. Program Support. Oct 04.

MARINE CORPS TRAINING EXERCISE EMPLOYMENT PLAN (MCTEEP)

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 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 03 MTC SERVICES CORPORATION, Stafford, VA. Provide funds for engineering and program support services.
AUSTIN INFORMATION SYSTEMS (AIS), Austin, TX. Provide funds for engineering and program support services.

UNIT OPERATIONS CENTER (UOC)

FY 03 GENERAL DYNAMICS, Scottsdale, AZ. Statement of Objectives for Combat Operations Center and Engineering Manufacture Development. May 02.

TARGET LOCATION DESIGNATION AND HAND-OFF SYSTEM (TLDHS)

FY 03 NSWC, Crane, IN. Technical design agent and in-service engineering agent. Mar 03.
Titan, Dumfries, VA. Program support. Oct 02.
ACS DEFENSE (SYNETICS), King George, VA. Software developer. Nov 02.
FY04 ACS DEFENSE (SYNETICS), King George, VA. Software developer. Nov 03.

Exhibit R-3 Cost Analysis						DATE: February 2004						
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /BA-7 Operational Sys Dev**		PROGRAM ELEMENT **0206313M Marine Corps Communications Sys**					PROJECT NUMBER AND NAME **C2270 Command Post 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**
UOC	WR	SPAWAR, Charleston, SC	6.116	0.365	10/02					0.000	6.481	
UOC	RCP	SPAWAR, Charleston, SC	0.000	0.070	03/03					0.000	0.070	
UOC	WR	MCSC, Quantico, VA	2.069	0.046	11/02					0.000	2.115	
UOC	RCP	General Dynamics, Scottsdale, AZ	7.000	7.408	12/03					0.000	14.408	
TCO	RCP	MCSC, Quantico, VA	0.518	0.005	12/02	0.160	12/03	0.254	12/03	0.000	0.937	
TCO	WR	SPAWAR. Charleston, SC	1.270	0.058	12/02	0.678	12/03	0.626	12/04	1.921	4.553	
MAGTF C4I BASELINE	RCP	SPAWAR, Charleston, SC	7.510	1.247	12/02	1.200	12/03	1.300	12/04	Cont.	Cont.	
MAGTF C4I BASELINE	RCP	Northrop Grumman, San Diego, CA	11.241	3.574	12/02	4.022	12/03	3.344	12/04	Cont.	Cont.	
MAGTF C4I BASELINE	RCP	Northrop Grumman, Stafford, VA	5.350	0.291	10/02	0.350	10/03	0.397	10/04	Cont.	Cont.	
MAGTF C4I BASELINE	RCP	Titan Corporation, Dumfries, VA		0.175	10/02	0.180	10/03	0.225	10/04	Cont.	Cont.	
MAGTF C4I BASELINE	WR	MCTSSA, Camp Pendleton, CA	0.725	0.000	12/02	0.179	12/03	0.187	12/04	Cont.	Cont.	
MAGTF C4I BASELINE	RCP	MCR Federal, McClean, VA		0.110	05/03					Cont.	Cont.	
MAGTF C4I BASELINE	RCP	JB Management		0.090	04/02					Cont.	Cont.	
MAGTF C4I BASELINE	WR	MCSC, Quantico, VA		0.146	10/02					Cont.	Cont.	
AFATDS	C/FFP	CECOM, Ft. Monmouth,NJ	1.858	1.612	12/02	0.515	12/03	0.950	12/04	Cont.	Cont.	
AFATDS	CPFF/MIPR	USA, CECOM	1.970	0.029	12/02					Cont.	Cont.	
AFATDS	WR	MCSC (MCTSSA), Quantico, VA	0.020	0.220	12/02					Cont.	Cont.	
AFATDS	CPFF/MIPR	CECOM, Ft. Monmouth,NJ	1.025	0.925	12/02			1.512	12/04	Cont.	Cont.	
AFATDS	FFP	Northrop Grumman, Stafford, VA		0.153	10/02	0.043		0.203	10/04	Cont.	Cont.	
GCCS-13	RCP	MTC, Woodbridge, VA	0.750	1.211	11/02	0.043	10/03	0.000		0.000	2.004	
GCCS-13	MIPR	NSA		0.032	12/02					0.000	0.032	
GCCS-13	RCP	AIS, Austin, TX		0.177	11/02					0.000	0.177	
DACT	TM	Raytheon, Fort Wayne, IN	1.896	0.587	10/02	0.200		0.105		Cont.	Cont.	
DACT	TM/MIPR	Booz-Allen, Ft. Monmouth, NJ	0.080	0.000		0.000		0.000		Cont.	Cont.	
DACT	FFP	Northrop Grumman, San Diego CA	1.131	0.439	11/02	0.000	11/03	0.592	11/04	Cont.	Cont.	
DACT	RCP	COMTECH, Germantown, MD				0.372	11/03	0.212	11/04	Cont.	Cont.	
DACT	WR	MCSC, Quantico, VA		1.500	01/03	0.689	02/04	0.300	01/05	Cont.	Cont.	
MCTEEP	C/CPFF	TBD		0.000		0.019	11/03			0.000	0.019	
TLDHS	RCP	ACS, King George, VA		1.529	11/02	0.142	12\03			Cont.	Cont.	
Subtotal Product Dev			50.529	21.999		8.792		10.207		Cont.	Cont.	
Remarks:												

Exhibit R-3 Cost Analysis							DATE: February 2004					
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /BA-7 Operational Sys Dev**		PROGRAM ELEMENT **0206313M Marine Corps Communications Sys**					PROJECT NUMBER AND NAME **C2270 Command Post 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**
UOC	WR	2nd MARDIV	0.000	0.005	11/02					0.000	0.005	
UOC	WR	MARFORRES	0.000	0.000	10/02					0.000	0.000	
UOC	WR	1st MAW	0.000	0.005	10/02					0.000	0.005	
UOC	WR	MCTSSA	0.000	0.004	11/02					0.000	0.004	
DACT	FFP	NORTHROP GRUMMAN, Stafford, VA	0.300	0.424	10/02	0.252	10/03	0.250	10/04	Cont.	Cont.	
SIAP	RCP	CECOM, FT. MONMOUTH, NJ		1.286	06/03					0.000	1.286	
SIAP	RCP	MCSC, QUANTICO, VA		5.566	06/03					0.000	5.566	
SIAP	RCP	GSA, BREMERTON, WA		0.241	03/03					0.000	0.241	
SIAP	RCP	MCTSSA		0.242	05/03					0.000	0.242	
SIAP	RCP	NSWC, DAHLGREN		0.150	10/03					0.000	0.150	
SIAP	WR	MCSC, QUANTICO, VA		0.113	08/03					0.000	0.113	
SIAP	WR	NSWC, CRANE		1.045	09/03					0.000	1.045	
SIAP	RCP	NSWC, CRANE		0.440	02/03					0.000	0.440	
SIAP	RCP	REG CONT OFF		0.160	10/03					0.000	0.160	
SIAP	RCP	NAVASEA, WNY, DC		0.192	10/03					0.000	0.192	
TLDHS	WR	NSWC, DAHLGREN		0.638	11/02					0.000	0.638	
Subtotal Support			0.300	10.511		0.252		0.250		Cont.	Cont.	

Remarks:

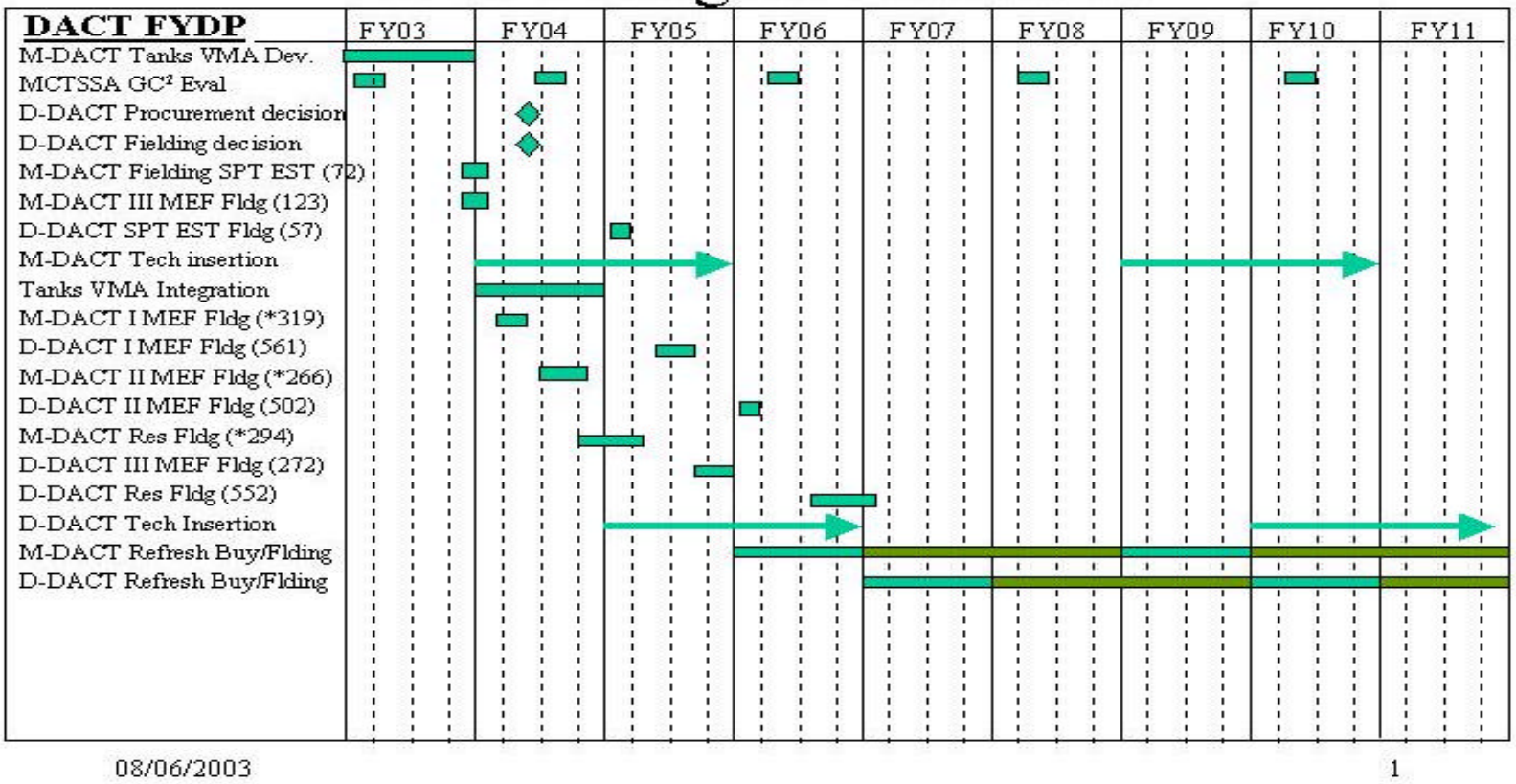
Cost Categories	**Contract Method & Type**	**Performing Activity & Location**	**Total PY s Cost**	**FY 03 Cost**	**FY 03 Award Date**	**FY 04 Cost**	**FY 04 Award Date**	**FY 05 Cost**	**FY 05 Award Date**	**Cost to Complete**	**Total Cost**	**Target Value of Contract**
TCO	RCP	MCTSSA, Camp Pndltn, CA	0.261	0.000	02/03	0.000		0.170	02/05	0.000	0.431	
IAS Mod	WR	NAVSEA, Crane	0.754	0.130	10/02					0.300	1.184	
IAS Mod	RCP	MCTSSA	0.236	0.000						0.100	0.336	
IAS Mod	RCP	SPAWAR, Charleston	1.035	0.801	11/02					0.449	2.285	
DACT	WR	FMF, MCB Camp Pendleton (I MEF)	0.300	0.000		0.020	10/03	0.100	12/04	Cont.	Cont.	
UOC	RCP	MCOTEA, Quantico, VA	0.090	0.270	04/03	0.000				0.000	0.360	
UOC	MIPR	Aberdeen Proving Ground, MD	0.000	0.155	09/03	0.000				0.000	0.155	
TLDHS	RCP	NAWC, China Lake, CA		0.144	11/02					0.000	0.144	
TLDHS	RCP	MCTOEA		0.082	11/02					0.000	0.082	
TLDHS	RCP	NSWC, Crane		1.149	08/03					0.000	1.149	
TLDHS	RCP	NGIT, San Diego, CA		2.635	08/03					0.000	2.635	
Subtotal T&E			2.676	5.366		0.020		0.270		Cont.	Cont.	

Remarks:

Exhibit R-3 Cost Analysis						DATE: February 2004						
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /BA-7 Operational Sys Dev**		PROGRAM ELEMENT **0206313M Marine Corps Communications Sys**				PROJECT NUMBER AND NAME **C2270 Command Post 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**
UOC	RCP	MITRETEK	0.000	0.159	12/02					0.000	0.159	
UOC	IDIQ	Logicon/NGIT, Stafford VA	5.036	1.350	12/02	0.000				0.000	6.386	
UOC	FFP	Mevatec, Crstl City VA	0.499	0.102	09/03	0.000				0.000	0.601	
Subtotal Management			3.460	1.611		0.000				0.000	5.071	
Remarks:												
Total Cost				**39.487**		**9.064**		**10.727**		**Cont.**	**Cont.**	

EXHIBIT R-4/4a, Schedule Profile/Detail			DATE: February 2004
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 Program Schedule

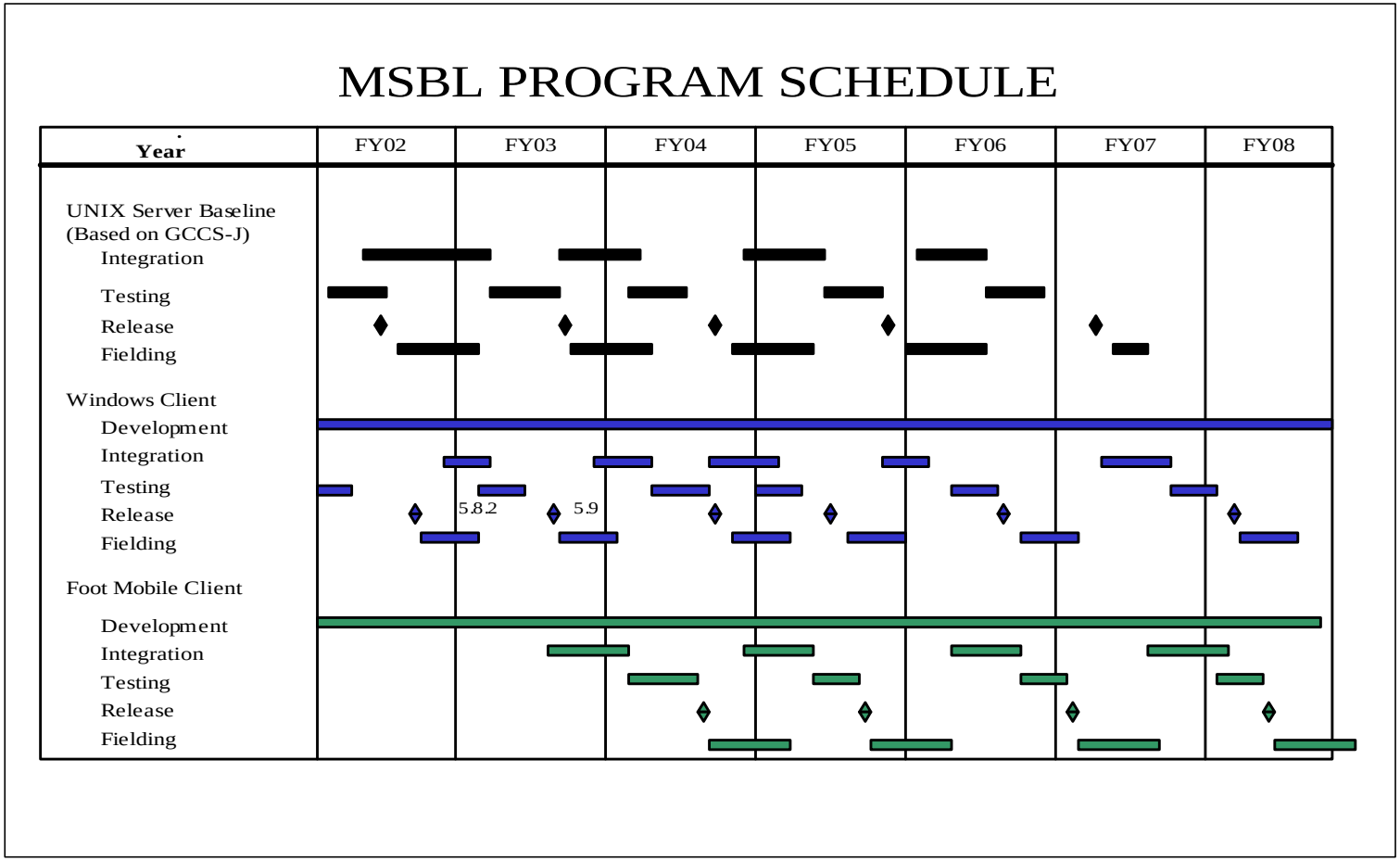


Program Funding Summary (APPN, BLI #, NOMEN)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl	Total Cost
(U) RDT&E,N C2270	1.450	1.533	1.559	1.278	0.664	0.583	0.599	Continuing	Continuing
(U) PMC BLI# 463100, DACT	6.372	4.128	0.939	1.385	0.200	0.300	0.300	Continuing	Continuing

EXHIBIT R-4/4a, Schedule Profile/Detail		DATE: February 2004
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	1Q ----------	----------	----------1Q					
D-DACT FIELDING DECISION			1Q					
D-DACT TECHNOLOGY INSERTION		1Q ----------	---------- 4Q		1Q ----------	---------- 4Q		
D-DACT SYSTEM VALIDATION			3Q ---------	1Q5				
D-DACT IOC			4Q					
M-DACT TECHNOLOGY INSERTION		2Q ----------	----------	----------	----------	---------- 1Q		
M-DACT SYSTEM VALIDATION					1Q -- 2Q			
M-DACT FOLLOW ON FIELDING DECISION					2Q			

EXHIBIT R-4/4a, Schedule Profile/Detail			DATE: February 2004
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	



Program Funding Summary

(APPN, BLI #, NOMEN)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl	Total Cost
(U) RDT&E,N	5.633	5.931	5.453	5.675	5.793	5.909	6.043	Continuing	Continuing

EXHIBIT R-4/4a, Schedule Profile/Detail			DATE: February 2004
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 SCHEDULE DETAIL	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
C2PC SOFTWARE RELEASES	3.3 2Q	5.9.0.3 4Q	6.0 3Q	7.0 3Q				
C2PC LIGHT SOFTWARE RELEASES	(5.8.2) 3Q	4Q	3Q	3Q				

EXHIBIT R-2a, RDT&E Project Justification					DATE: February 2004				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /BA-7 Operational Sys Dev**	PROGRAM ELEMENT NUMBER AND NAME **0206313M Marine Corps Communication Systems**					PROJECT NUMBER AND NAME **C2272 Intelligence C2 Systems**			
COST ($ in Millions)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY2009	Cost To Complete	Total Program
Project Cost	**24.129**	**17.759**	**32.294**	**27.668**	**20.964**	**17.441**	**15.566**	**Cont**	**Cont**
RDT&E Articles Qty									

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

(U) Intelligence Command and Control (C2) supports the employment of reconnaissance, surveillance, and target acquisition resources and the timely planning and processing of all-source intelligence. It ensures that all-source tactical intelligence is tailored to meet specific mission requirements. The systems below collect and convert raw intelligence data on the battlefield into processed information and deliver the processed products to the Intelligence Analysis Systems (IAS) for analysis and dissemination.

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.

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.

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.

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 processing station. COBRA algorithm processing provides near real-time automatic minefield detection with Differential Global Positioning System (DGPS) location accuracy.

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.

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.

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.

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.

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2004
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**

9. MAGTF Secondary Imagery Dissemination System (MSIDS) is a digital imagery collection/transmission system employed by Reconnaissance (Recon) and Light Armored Reconnaissance (LAR) Marines. MSIDS consist of one base station and three outstations. The base station consists of a ruggedized laptop computer and printer for hard copy printout of collected images. The outstation consists of a basic digital still-photo camera, advanced digital still-photo camera, night vision intensifier tube, and ruggedized ultra-portable laptop computer. All equipment comprising MSIDS is Commerical-Off-The-Shelf (COTS) or Government Off The Shelf (GOTS).

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.

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).

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.

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 Common Air Command and Control Systems and Joint Stars Work Station.

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 Commerical-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 sytems. The ISR program Team also trains Marines to maximize new systems and capabilities.

FY03 DERF Funds are listed under Project C9273.

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2004
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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.080**	**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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.112**	**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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.500**	**0.750**	**0.850**
RDT&E Articles Qty			

COBRA: NAVSEA Technical and Contractual Support.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.100**	**0.100**	**0.200**
RDT&E Articles Qty			

COBRA: NAVAIR Technical Support, Platform Integration Services

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.223**	**0.480**	**0.982**
RDT&E Articles Qty			

COBRA: MCSC Program Support

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**4.440**	**1.610**	**0.000**
RDT&E Articles Qty			

COBRA: SD&D Contract, Northgrup Grumman, System Development, Spiral A.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.272**	**0.000**	**7.645**
RDT&E Articles Qty			

COBRA: SD&D Contract, Northgrup Grumman, System Development, Spiral B.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**1.521**	**1.533**
RDT&E Articles Qty			

GCCS-I3: 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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.400**	**0.574**
RDT&E Articles Qty			

IAS MOD: Critical improvements to GCCS-I3 Intelligence Support software for USMC requirements. Funding for this effort in FY02 and FY03 is provided under Project C2270 of this PE.

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2004
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /BA-7 Operational Sys Dev**	PROGRAM ELEMENT NUMBER AND NAME **0206313M Marine Corps Communication Systems**	PROJECT NUMBER AND NAME **C2272 Intelligence C2 Systems**

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.077**	**0.000**
RDT&E Articles Qty			

IAS MOD: Joint interoperabilty assessment and documentation. Funding for this effort in FY02 is provided under Project C2270 of this PE.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.297**	**0.431**
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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.277**	**0.288**
RDT&E Articles Qty			

IBR: Engineering and technical management support.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.000**	**0.340**
RDT&E Articles Qty			

ISR: Program Management and Technical Support for the ISR Program.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.260**	**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.

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2004
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /BA-7 Operational Sys Dev**	PROGRAM ELEMENT NUMBER AND NAME **0206313M Marine Corps Communication Systems**	PROJECT NUMBER AND NAME **C2272 Intelligence C2 Systems**

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.166**	**0.000**	**0.000**
RDT&E Articles Qty			

JSTARS: Contractor advisory and assistance services.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.100**	**0.000**	**0.000**
RDT&E Articles Qty			

JSTARS: Common Ground Moving Target Indication client testing.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.050**	**0.000**	**0.000**
RDT&E Articles Qty			

JSTARS: Joint Services Work Stations (JSWS) Field User Evaluation (FUE).

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.338**	**0.000**
RDT&E Articles Qty			

JSTARS: Integration of MTES software upgrade into Common Ground Station (CGS) architecture.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.000**	**0.483**
RDT&E Articles Qty			

JSTARS: Integration of emerging Moving Target Indicator (MTI) sensors into JSTARS CGS software baseline.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.485**	**0.400**	**0.355**
RDT&E Articles Qty			

JSIPS-TEG: Engineer and technical management support.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**1.644**	**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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**1.780**	**0.000**
RDT&E Articles Qty			

JSIPS-TEG: Development of Time Sensitive Targeting (TST) interfaces within the common software baseline.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.000**	**0.940**
RDT&E Articles Qty			

JSIPS-TEG: Development of sensor cross-cueing interfaces withing the common software baseline.

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2004
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /BA-7 Operational Sys Dev**	PROGRAM ELEMENT NUMBER AND NAME **0206313M Marine Corps Communication Systems**	PROJECT NUMBER AND NAME **C2272 Intelligence C2 Systems**

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.146**	**0.147**
RDT&E Articles Qty			

MSIDS: Engineering and technical support for product development of program hardware and software refresh.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.064**	**0.055**
RDT&E Articles Qty			

MSIDS: Program Management and technical support for product development of program hardware and software refresh.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.021**	**0.038**
RDT&E Articles Qty			

MSIDS: Program Management and technical support for Technical and Evaluation of program refresh.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.890**	**0.904**
RDT&E Articles Qty			

TCAC: Software development keeping TCAC with COE 4.X and future releases.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**2.757**	**2.413**	**3.000**
RDT&E Articles Qty			

TENCAP: Program support and management; evaluate national intelligence data systems for MAGTF applicability.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.042**	**0.463**	**0.000**
RDT&E Articles Qty			

TENCAP: Technical assessments of emerging national data dissemination capabilities.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.015**	**0.000**
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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.000**	**0.000**
RDT&E Articles Qty			

TENCAP: Evaluate the utility of emerging exploitation, automated and manual target recognition and detection tools.

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2004
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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.044**	**0.191**	**0.132**
RDT&E Articles Qty			

TPC: Contractor support for Mods

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.189**	**0.207**	**0.215**
RDT&E Articles Qty			

TPC: Perform Mods OT&E

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.404**	**0.348**	**0.743**
RDT&E Articles Qty			

TPCS-MPC: EDM Design.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.000**	**0.525**
RDT&E Articles Qty			

TPCS-MPC: System development.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.879**	**0.000**	**0.000**
RDT&E Articles Qty			

TPCS-MPC: Training development and test support.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.884**	**0.126**	**0.392**
RDT&E Articles Qty			

TPCS-MPC: Program support and management.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.000**	**0.463**
RDT&E Articles Qty			

TPCS-MPC: Contractor advisory assistance service.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.000**	**1.094**
RDT&E Articles Qty			

TPCS-MPC: Operational Test and Evaluation (OT&E).

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**2.366**	**0.000**	**0.000**
RDT&E Articles Qty			

TRSS-PIP: Development of HHPM and Low-Cost Imager.

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2004
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /BA-7 Operational Sys Dev**	PROGRAM ELEMENT NUMBER AND NAME **0206313M Marine Corps Communication Systems**	PROJECT NUMBER AND NAME **C2272 Intelligence C2 Systems**

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.000**	**0.154**
RDT&E Articles Qty			

TRSS-PIP: Acoustic classification effort.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.040**	**0.353**	**0.000**
RDT&E Articles Qty			

TRSS-PIP: Software development ofHHPM 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/version 4.0.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.000**	**0.000**
RDT&E Articles Qty			

TRSS-PIP: R&D contractual supports for HHPM and Low-Cost Imager.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.224**	**0.000**	**0.280**
RDT&E Articles Qty			

TRSS-PIP: R&D support.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.000**	**0.000**
RDT&E Articles Qty			

TRSS-PIP: R&D support for alternative life-cycle maintenance effort.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.000**	**0.000**
RDT&E Articles Qty			

TRSS-PIP: Field-testing and evaluation of IADS II.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.615**	**2.000**	**2.000**
RDT&E Articles Qty			

TRSS-PIP: Development of Unattended Ground Miniaturized Sensors (UGMS) and AADS electronic components.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.810**	**4.150**
RDT&E Articles Qty			

TRSS-PIP: Air Certification of Advanced Air Delivered Sensor (AADS) store.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.200**	**0.400**
RDT&E Articles Qty			

TRSS-PIP: Software Development of AADS and UGMS Monitoring System.

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2004
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /BA-7 Operational Sys Dev**	PROGRAM ELEMENT NUMBER AND NAME **0206313M Marine Corps Communication Systems**	PROJECT NUMBER AND NAME **C2272 Intelligence C2 Systems**

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.000**	**0.160**
RDT&E Articles Qty			

TRSS-PIP: Development of air relay/recovery.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.000**	**0.054**
RDT&E Articles Qty			

TRSS-PIP: Development of alternative power.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**7.253**	**0.000**	**0.000**
RDT&E Articles Qty			

PBD-290: OSD Derf Execution.

(U) Total $	**24.129**	**17.759**	**32.294**

(U) PROJECT CHANGE SUMMARY:

	FY2003	FY2004	FY2005
(U) FY 2004 President's Budget:	**18.352**	**17.616**	**32.424**
(U) Adjustments from the President's Budget:			
(U) Congressional/OSD Prog Reduction			
(U) Congressional Rescissions			
(U) Congressional Increases			
(U) Reprogrammings	5.777	0.350	
(U) SBIR/STTR Transfer			
(U) Minor Affordability Adjustment		-0.207	-0.130
(U) FY 2005 Navcompt Budget:	**24.129**	**17.759**	**32.294**

CHANGE SUMMARY EXPLANATION:

(U) Funding: See Above.

(U) Schedule: Not Applicable.

(U) Technical: Not Applicable.

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2004
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 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	9.406	10.622	20.048	18.743	16.414	13.814	Continuing	Continuing
PMC BLI 474700 Intell Support	TRSS-PIP	3.941	0.000	0.000	0.000	0.000	0.000	0.000	0	3.941
PMC BLI 474700 Intell Support Eq	CIHEP	1.798	1.376	1.489	1.585	1.681	1.803	1.909	Continuing	Continuing
PMC BLI 474700 Intell Support Eq	COBRA	0.000	0.000	0.000	1.210	1.817	3.227	0.250	Continuing	Continuing
PMC BLI 474700 Intell Support Eq	JSIPS	8.970	2.875	0.618	0.000	0.000	0.000	0.000	0	12.463
PMC BLI 474700 Intell Support Eq	TPCS-MULTI	0.000	0.000	6.360	8.038	7.746	5.936	0.299	Continuing	Continuing
PMC BLI 474700 Intell Support Eq	MSIDS	0.000	1.051	2.857	1.711	1.712	1.762	1.721	Continuing	Continuing
PMC BLI 474700 Intell Support Eq	IBR	0.100	1.557	3.545	1.409	0.418	0.428	0.436	Continuing	Continuing
PMC BLI 474700 Intell Support Eq	TPC	4.572	3.280	0.573	0.000	0.000	0.000	0.000	Continuing	Continuing
PMC BLI 474700 Intell Support Eq	RREP	2.742	0.000	0.000	4.194	0.000	0.000	4.228	Continuing	Continuing
PMC BLI 474700 Intell Support Eq	TSCM	0.000	2.220	0.000	1.233	0.000	1.330	0.000	Continuing	Continuing
PMC BLI 474700 Intell Support Eq	IAS MOD Kit	0.665	1.347	1.354	1.375	1.398	1.445	1.474	Continuing	Continuing
PMC BLI 474900 Mod Kits Intell	TCAC	1.343	0.350	1.545	0.945	0.945	0.945	1.145	Continuing	Continuing
PMC BLI 474900 Mod Kits Intell	JSTARS	0.256	3.273	4.604	4.615	0.086	4.621	1.502	Continuing	Continuing
PMC BLI 474900 Mod Kits Intell	TERPES	1.163	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	2.048	4.579	4.624	4.761	4.798	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

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2004
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) 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.

(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.

(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 C decision will be scheduled.

(U) ACQUISITION STRATEGY TPCS: TPCS, the ever-increasing sophistication of target threats and information technology necessitates an evolutionary acquisition approach. TPCS will make incremental improvements through maximum use of COTS, GOTS and NDI. These technology insertions and product improvements will ensure the Radio Battalions maintain cutting edge technologies and collection capabilities.

(U) ACQUISITION STRATEGY 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.

(U) ACQUISITION STRATEGY TENCAP: Work will be led in-house. Necessary contractor support will be acquired using already existing contracts.

(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.

(U) ACQUISITION STRATEGY MSIDS: A complete refresh of the 73 MSIDS suites was completed in 1QTR FY03. Subsequent "block refreshes" beginning in FY04 are required in order to keep the systems from again becoming unreliable and unsupportable. The block refresh approach will effectively leverage technological advances. Each block of upgrades will refresh 1/3 of the fielded components. A contract is in place with Northrop Grumman and Integrity Data Inc to provide configuration management, research and development and program management support.

(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.

(U) ACQUISITION STRATEGY TCAC: The acquisition of components for the TCAC will maximize the use of existing equipment, NDI/COTS/GFE equipment/software. The integration effort for TCAC hardware components will be accomplished under the control of the SSA, MCSC. Software integration and support will be accomplished by contractors under the control of the Project Officer. These activities report to and are directed by the Program Manager, Intelligence Systems, Marine Corps Systems Command (MARCORSYSCOM). Maintenance support will be managed by MARCORLOGBASES Albany and MCSC, Albany and through separate contractual agreements.

(U) ACQUISITION STRATEGY 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.

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2004
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) 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).

(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 provied by BAE Applied Technologies, Bulldog Technical Services, and MTC Services Corporation. All Contractor support is resident within the ITS facility.

(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.

(U) E. MAJOR PERFORMERS:

MANPACK SIDS (MP SIDS)

FY 04 Integrity Data Inc (IDI), Colorado Springs, Colorado. Provide funds for integration and sustainment support.
Northrop Grumman Information Technology (NGIT), Stafford, VA Provide funds for engineering and program management support.
FY 05 Integrity Data Inc (IDI), Colorado Springs, Colorado. Provide funds for integration and sustainment support.
Northrop Grumman Information Technology (NGIT), Stafford, VA Provide funds for engineering and program management support.

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.

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.

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2004
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) E. MAJOR PERFORMERS:

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.
COMPUTER SCIENCE CORP, Dumfries, VA Funds provided for SETA support for Configuration Management (CM).
TITAN, 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.

FY04 COMPUTER SCIENCE CORP, Dumfries, VA Funds provided for SETA support for Configuration Management (CM).

FY 05 SPAWAR, CHARLESTON, S.C. Provide funds for prime systems integrator for TPCS-MPC EDM.
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.
TITAN, Dumfries VA Funds provide Contractor Engineering Technical Support (CETS) at RadBn for training support.

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.
Austin Information System (AIS), Austin, TX. Provide funds for Engineering support.
FY 05 MTC Services Corporation (MTC) Stafford, VA. Provide funds for Engineering and Program support services.

COASTAL BATTLEFIELD RECONNAISSANCE AND ANALYSIS (COBRA)

FY 03 NAVAL SEA WARFARE COMMAND (NSWC), Panama City, FL Provide funds for program and technical support.
NORTHROP GRUMMAN INFORMATION TECHNOLOGY (NGIT), Melborne, FL Provide funds system engineering and development of Spiral A and Spiral B.
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), Melborne, FL Provide funds system engineering and development of Spiral A and Spiral B.
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), Melborne, FL Provide funds system engineering and development of Spiral A and Spiral B.
MARCORSYSCOM, (MCSC), Quantico, VA Provide funds for Program and technical support.

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2004
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) E. MAJOR PERFORMERS:

TOPOGRAPHIC PRODUCTION CAPABILITY (TPC)

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
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
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

JOINT SURVEILLANCE TARGET ATTACK RADAR (JSTARS)

FY 03 SPAWAR, CHARLESTON, S.C. Provide funds for depot support, CGC integration and interoperability development.
TBD, Provide funds for Acquisition and Technical support.
FY 04 SPAWAR, CHARLESTON, S.C. Provide funds for depot support, CGC integration and interoperability development.
TBD, Provide funds for Acquisition and Technical support.
FY 05 SPAWAR, CHARLESTON, S.C. Provide funds for depot support, CGC integration and interoperability development.
TBD, Provide funds for Acquisition and Technical support.

JOINT SERVICE IMAGERY PROCESSING SYSTEM-TACTICAL EXPLOITATION GROUP (JSIPS-TEG)

FY 03 ARMY SPACE PROGRAM OFFICE, Washington, DC. Classified contract.
MARCORSYSCOM, Quantico, VA. (MTC), Provide funds for Acquisition and Technical support.
FY 04 ARMY SPACE PROGRAM OFFICE, Washington, DC. Classified contract.
MARCORSYSCOM, Quantico, VA. (MTC), Provide funds for Acquisition and Technical support.
FY 05 ARMY SPACE PROGRAM OFFICE, Washington, DC. Classified contract.
MARCORSYSCOM, Quantico, VA. (MTC), Provide funds for Acquisition and Technical support.
L3 COMM, Salt Lake City, UT. Provide funds for TIGDL development.

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

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2004
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) E. MAJOR PERFORMERS:

TACTICAL REMOTE SENSOR SYSTEM (TRSS)

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 Maintenace. 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.

COUNTERINTELLIGENCE AND HUMAN INTELLIGENCE (HUMINT) EQUIPMENT PROGRAM (CIHEP)

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.

Exhibit R-3 Cost Analysis						DATE: February 2004						
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						
Cost Categories (Tailor to WBS, or Sys/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
TENCAP	Various	Titan	11.421	0.042	01/03	0.463	12/03	0.000	12/04	Cont.	Cont.	
TENCAP	TBD	TBD	0.685	0.000	03/03	0.015	12/03	0.000	12/04	Cont.	Cont.	
COBRA	RCP	MARCORSYSCOM	0.665	4.973	12/02					Cont.	Cont.	
COBRA	RCP	NG,Melbourne		0.272	10/03	1.610	01/04	7.645	01/05	Cont.	Cont.	
TPCS-MPC	WR	SPAWAR	1.931	0.404	12/02	0.348	11/04	0.743	01/05	Cont.	Cont.	
MSIDS	RCP	IDI				0.146	01/04	0.147	02/05	Cont.	Cont.	
CIHEP	RCP	Action Systems	0.031	0.096	12/02			0.035	12/04	Cont.	Cont.	
CIHEP	RCP	USAIMA				0.031	12/03			Cont.	Cont.	
CIHEP	RCP	NGIT		0.012	01/03	0.020	01/04	0.025	01/05	Cont.	Cont.	
CIHEP	RCP	MTC Service Corp		0.013	01/03	0.020	01/04	0.025	01/05	Cont.	Cont.	
CIHEP	RCP	MCSC	0.085	0.071	06/03	0.041	06/04	0.031	06/05	Cont.	Cont.	
TRSS-PIP	RCP	NAWC, Crane	1.000	2.366	02/03					Cont.	Cont.	
TRSS-PIP	RCP	ModernTC	0.329	0.180	02/03	0.000	01/04	0.280	12/04	Cont.	Cont.	
TRSS-PIP	RCP	OSEC	0.799	0.040	04/03	0.553	01/04	0.400	12/04	Cont.	Cont.	
TRSS-PIP	MIPR	ESC		0.615	04/03	1.500	01/04	2.000	12/04	Cont.	Cont.	
TRSS-PIP	MIPR	NAVAIR				0.805	01/04	4.150	12/04	Cont.	Cont.	
TRSS-PIP	RCP	ATMS		0.044	03/03						0.044	
TRSS-PIP	MIPR	Chicken Little				0.000	01/04	0.154	01/05		0.154	
IBR	RCP	NGIT				0.277	10/03	0.288	12/04	Cont.	Cont.	
IBR	RCP	CSC/MDA				0.754	10/03	0.722	10/04	Cont.	Cont.	
Subtotal Product Development			**16.946**	**9.128**		**6.583**		**16.645**		**Cont.**	**Cont.**	

Remarks:

Exhibit R-3 Cost Analysis							DATE: February 2004					
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						
Cost Categories (Tailor to WBS, or Sys/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
TENCAP	Various	Titan	5.784	2.757	10/02	2.413	12/03	3.000	12/04	Cont.	Cont.	
TENCAP	TBD	TBD	0.467	0.000	03/03	0.000	12/03	0.000	12/04	Cont.	Cont.	
COBRA	RCP	CSS	3.558	0.059	10/02	0.850	10/03	0.850	11/04	Cont.	Cont.	
COBRA	WR	BRTRC	0.366	0.006	12/02					Cont.	Cont.	
COBRA	WR	NAWC-AD	0.420	0.200	12/02					Cont.	Cont.	
COBRA	WR	NSWC	1.157	0.025	04/03					Cont.	Cont.	
COBRA	RCP	various				0.480	12/03	0.982	12/04	Cont.	Cont.	
COBRA	WR	NAVAIR						0.200	11/04	Cont.	Cont.	
JSIPS - TEG	WR	NSWC, Crane	0.377							Cont.	Cont.	
JSIPS - TEG	RCP	ASPO	0.485	0.485	10/02	0.400	10/03	0.355	10/04	Cont.	Cont.	
JSIPS - TEG	RCP	MCSC	1.644	1.644	01/03	1.815	01/04	0.940	01/05	Cont.	Cont.	
JSIPS - TEG	RCP	L3 COMM						0.940	1//05	Cont.	Cont.	
TPC	RCP	MCSC	0.650	0.044	12/02	0.191	12/03	0.132	12/04	Cont.	Cont.	
TPCS-MPC	RCP	MTC	0.561	0.000				0.392	01/05	Cont.	Cont.	
TPCS-MPC	RCP	CSC	1.284	0.884	04/03	0.126	12/03	0.525	01/05	Cont.	Cont.	
TPCS-MPC	MIPR	MCOTEA						1.094	01/05	Cont.	Cont.	
MSIDS	RCP	NGIT				0.050	01/04	0.050	01/05	Cont.	Cont.	
IAS MOD KIT	RCP	SPAWAR				0.470	10/03	0.288	10/04	Cont.	Cont.	
IAS MOD KIT	WR	SPAWAR				0.311	11/03	0.431	11/04	Cont.	Cont.	
IAS MOD KIT	WR	MTC				0.193	11/03	0.286	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.	
JSTARS	RCP	MTC	0.260	0.260	10/02	0.316	10/03	0.261	10/04	Cont.	Cont.	
JSTARS	WR	SPAWAR	0.100	0.100	11/02	0.338	01/04	0.483	01/05	Cont.	Cont.	

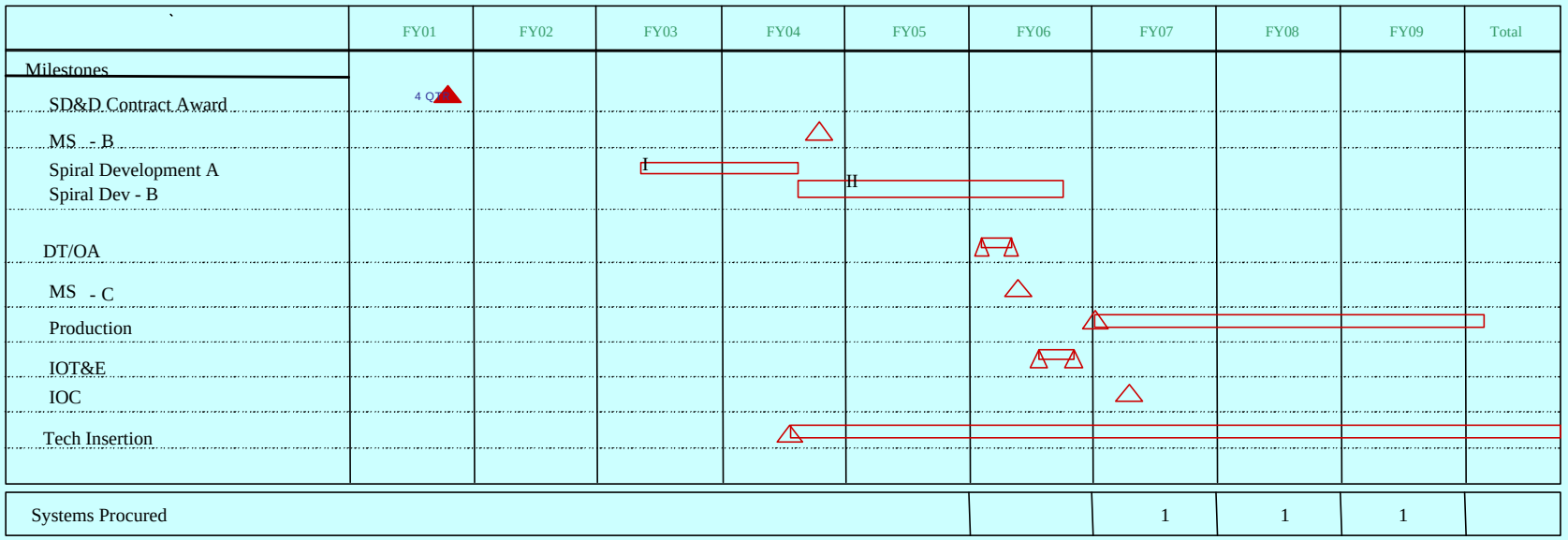
Exhibit R-3 Cost Analysis													DATE: February 2004	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA 7 Operational Sys Dev			PROGRAM ELEMENT 0206313M Marine Corps Communications Sys				PROJECT NUMBER AND NAME C2272 Intelligence C2 Systems							
IBR	RCP	CSC/MDA				0.100	10/03			Cont.	Cont.	
TRSS-PIP	RCP	OSEC	0.201	0.000		0.200	12/03			Cont.	Cont.	
TRSS-PIP	RCP	MilleniumTC	0.211	0.000		0.050	12/03	0.214	01/05	Cont.	Cont.	
TRSS-PIP	RCP	NGIT	0.087	0.000		0.220	12/03			Cont.	Cont.	
ISR	WR	MTC						1.068	01/05	Cont.	Cont.	
Subtotal Support			**17.612**	**6.464**		**10.934**		**14.928**		**Cont.**	**Cont.**	
Remarks:												

Cost Categories (Tailor to WBS, or Sys/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
TPC	RCP	MCSC	0.189	0.189	10/02	0.207	10/03	0.215	10/04	Cont.	Cont.	
TPCS-MPC	RCP	TITAN	1.513	0.879	12/02			0.463	01/05	Cont.	Cont.	
MSIDS	RCP	IDI				0.024	01/04	0.025	01/05	Cont.	Cont.	
JSTARS	RCP	SPAWAR	0.050	0.050	10/03						0.100	
Subtotal T&E			**1.702**	**1.118**		**0.231**		**0.703**		**Cont.**	**Cont.**	
Remarks:												

Cost Categories (Tailor to WBS, or System/Ite 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
MSIDS	RCP	NGIT				0.011	01/03	0.018	01/05	Cont.	Cont.	
JSTARS	RCP	MTC	0.166	0.166	10/03						0.332	
PBD-290 OSD				7.253								
Subtotal Management			**0.166**	**7.419**		**0.011**		**0.018**		**Cont.**	**Cont.**	
Remarks:												
Total Cost				**24.129**		**17.759**		**32.294**		**Cont.**	**Cont.**	

COASTAL BATTLEFIELD RECONNAISSANCE AND ANALYSIS (COBRA)
MILESTONE SCHEDULE

SCHEDULE OVERVIEW



System = 1 Ground Station, 2 Payloads
AAO = 9 Systems

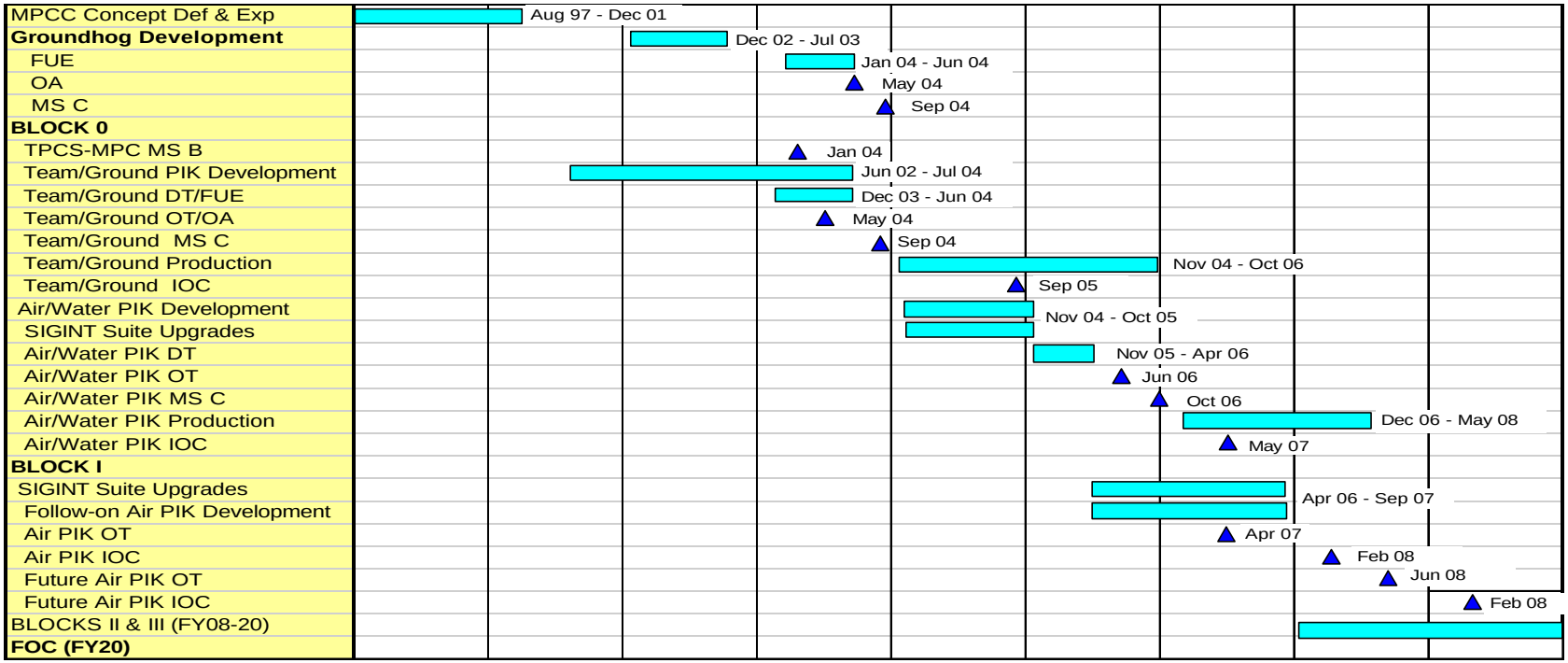
Program Funding Summary (APPN, BLI #, NOMEN)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl	Total Cost
(U) RDT&E,N	5.535	2.940	9.677	6.390	3.423	1.656	1.110	Continuing	Continuing
(U) PMC BLI# 474700 Intell Supp Eq COBRA	0	0	0	1.210	1.817	3.227	0.250	Continuing	Continuing

Exhibit R-4/4a Schedule Profile/Detail		DATE: February 2004
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**

COBRA SCHEDULE DETAIL	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
MS B		4Q					
Spiral Development A	3Q---- -- ---3Q						
Spiral Development B		3Q----------4Q					
DT/OA				1Q			
Procure Long Lead Items				2Q			
MS C				2Q			
Production					1Q		
IOT&E				3Q			
IOC					2Q		
Tech Insertion		3Q----------					

Exhibit R-4/4a Schedule Profile/Detail		DATE: February 2004
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**

TPCS - MPC Milestone Schedule



Program Funding Summary (APPN, BLI #, NOMEN)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl	Total Cost
(U) RDT&E,N	2.167	0.474	3.217	2.607	3.499	2.806	1.501	Continuing	Continuing
(U) PMC BLI# 474700 Intell Sup (TPCS)	0	0	6.360	8.038	7.746	5.936	0.299	Continuing	Continuing

Exhibit R-4/4a Schedule Profile/Detail		DATE: February 2004
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**

TPCS-MPC SCHEDULE DETAIL	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
MS B EDM Dev and Demo			2Q					
DT/OA		3Q---------2Q						
IOT & E			3Q					
MS C			4Q					
Ground/Team PIK IOC				4Q				
Air/Water PIK OT					3Q			
Air/Water PIK MS C						1Q		
Air/Water PIK IOC						3Q		
CH-53 OT						3Q		
CH-53 IOC							2Q	
MV-22 OT							3Q	
MV-22 IOC								2Q

EXHIBIT R-2a, RDT&E Project Justification					DATE: February 2004				
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**			
COST ($ in Millions)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost To Complete	Total Program
Project Cost	**62.275**	**94.832**	**99.834**	**81.526**	**105.786**	**31.135**	**19.923**	**Cont**	**Cont**
RDT&E Articles Qty									

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

(U) Air Operations C2 coordinates and plans Navy and Marine air combat operations and interfaces with joint and combined forces air operations. It also interfaces with fire support C2. The systems in this project are used to detect aircraft and missiles, process the detected information, deliver the processed information to the Advanced Tactical Air Command Central (ATACC), and conduct the air battle.

1. The Air Defense Communications Platform (ADCP) PIP provides a platform for the AN/TPS-59(V)3 radar and the Tactical Air Operations Module (TAOM) for tactical ballistic missile defense as a JTIDS network user. The ADCP provides a direct interface between the AN/TPS-59 (V)3 to the joint services.

2. 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.

3. 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.

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).

4. The Composite Tracking Network (CTN), 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.

5. The Critical Infrastructure will develop a new capability for video teleconferencing capability via service intranet capabilities.

6. 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).

7. "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 will investigate, research and produce the most cost effective means for producing a SIAP. The SIAP System Engineer Task Force (SETF) 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.

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2004
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**

8. 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.

9. The Unit Operations Center (UOC) project develops and transitions two Command and Control Imperative Advanced Technology Demonstration (ATDs) (the Expeditionary Integrated Combat Operations Center) and the Joint Tactical Communications ((JT COMMs) ATDs) into various Marine Corps and Joint Engineering and Manufacturing Development (E&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.

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.

(U) B. ACCOMPLISHMENTS/PLANNED PROGRAM:

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.219**	**0.097**	**0.034**
RDT&E Articles Qty			

ADCP: Tested and certified software enhancements.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.200**	**0.094**	**0.085**
RDT&E Articles Qty			

ADCP: Software enhancements to meet ADCP ORD requirements.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**1.915**	**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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**1.500**	**0.000**	**0.000**
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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**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.

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2004
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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.555**	**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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**3.032**	**4.697**	**5.189**
RDT&E Articles Qty			

CAC2S: Program management support.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**41.910**	**53.578**	**51.862**
RDT&E Articles Qty			

CAC2S: SDD. Engineering Development Model (EDM) hardware and software development, design of host processing system, and conduct software integration of Joint mandated applications, developmental testing and evaluation and baseline stabilization.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**3.130**	**3.649**	**7.646**
RDT&E Articles Qty			

CAC2S: System development, GFE, and testing in accordance with continued sensor interface/integration, communications interface/interoperability development.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**1.834**	**1.164**
RDT&E Articles Qty			

CTN: Software development: Interface Design Document (IDD) development for CAC2S and CLAWS interface to CTN.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**6.198**	**0.000**
RDT&E Articles Qty			

CTN: Development of Engineer Design Model.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.530**	**0.610**
RDT&E Articles Qty			

CTN: Program management support.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.000**	**1.420**
RDT&E Articles Qty			

CTN: IV&V of the certified system with interfaces to CAC2S and CLAWS.

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2004
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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.000**	**2.111**
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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**1.894**	**1.500**	**0.000**
RDT&E Articles Qty			

CRITICAL INFRASTRUCTURE: VTC Coop Engineering.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**1.364**	**0.000**	**0.000**
RDT&E Articles Qty			

DISM: Research and demonstrate a variety of development initiatives which will be compatible with current DISM systems.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.022**	**0.000**	**0.000**
RDT&E Articles Qty			

MACCS SUSTAINMENT: Test and evaluation on the DASC Airborne SLEP.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.899**	**0.273**	**1.452**
RDT&E Articles Qty			

MACCS SUSTAINMENT: Planned software upgrades for the TAOM, JTIDS and TACC, DASC.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.290**	**0.000**	**0.000**
RDT&E Articles Qty			

MACCS SUSTAINMENT: Program management support.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**3.123**	**0.000**	**0.000**
RDT&E Articles Qty			

MACCS SUSTAINMENT: Multi-Source Correlation System software development.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**2.000**	**3.193**
RDT&E Articles Qty			

MACCS SUSTAINMENT: Test and Evalution for TAOM tech insert and interoperability.

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2004
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**

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.094**	**1.150**
RDT&E Articles Qty			

MACCS SUSTAINMENT: Technology integration efforts for TAOM.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**1.778**	**0.000**
RDT&E Articles Qty			

SIAP: Update MCTSSA SIE HWILT (AVN C2) hardware and software to reflect SIAP changes.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**1.200**	**1.115**
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.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.264**	**0.466**	**0.437**
RDT&E Articles Qty			

TBMCS: USMC TBMCS development.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.033**	**0.035**
RDT&E Articles Qty			

TBMCS: MCTSSA TBMCS software support.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.413**	**0.255**	**0.279**
RDT&E Articles Qty			

TBMCS: Program management support.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**7.478**	**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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.000**	**8.663**
RDT&E Articles Qty			

UOC: Engineering and manufacturing development effort including design of production representative modules to include UOC Universal Communications Interface Module (UCIM).

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2004
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**

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**1.644**	**1.758**
RDT&E Articles Qty			

UOC: Program Management Support

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.000**	**3.798**
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 $		**62.275**		**94.832**		**99.834**
(U) FY 2004 President's Budget:	**65.142**	**95.971**	**106.936**			
(U) Adjustments from the President's Budget:						
(U) Congressional/OSD Program Reductions						
(U) PBD 290						
(U) Congressional Rescissions						
(U) Congressional Increases	1.364	1.500				
(U) Reprogrammings	-2.598	-1.562	-6.184			
(U) SBIR/STTR Transfer	-1.633					
(U) Minor Affordability Adjustments		-1.077	-0.918			
(U) FY 2005 NAVCOMPT Budget:	**62.275**	**94.832**	**99.834**			

CHANGE SUMMARY EXPLANATION:
(U) Funding: See Above.
(U) Schedule: Not Applicable.
(U) Technical: Not Applicable.

(U) C. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl	Total Cost
(U) PMC, BLI#462000, ADCP PIP	0.804	0	0	0	0	0	0	0	0.804
(U) PMC, BLI#464000, ADCP PIP	0	0.275	0.175	0.055	0	0	0	0	0.505
(U) PMC, BLI #463600, AN/TPS-59	11.163	0	0	0	0	0	0	0	11.163
(U) PMC, BLI #465100, AN/TPS-59	0	18.077	24.466	7.461	11.933	0	0	Continuing	Continuing
(U) PMC, BLI #468900, CAC2S	0	0	0	3.899	39.139	41.755	41.905	Continuing	Continuing
(U) PMC, BLI #464000, CEC/CTN	0	0	0.000	22.477	34.840	43.993	68.803	Continuing	Continuing
(U) PMC, BLI #464000, MACCS SUSTAINMENT	4.159	3.993	6.641	11.891	1.870	1.416	1.345	0	31.315
(U) PMC, BLI #464000,TBMCS (CTAPS)	1.665	6.443	3.474	3.605	3.628	3.746	3.818	Continuing	Continuing
(U) PMC, BLI #463100, UOC	25.241	0	0	0	0	0	0	0	25.241
(U) PMC, BLI #419000, UOC	0	29.010	35.933	30.109	54.471	96.523	112.784	Continuing	Continuing

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2004
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) D. ACQUISITION STRATEGY:

(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.

(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.

(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).

(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.

(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.

(U) **CTN**: The USMC's CTN acquisition strategy is to participate in the USN's program procurement and testing, making necessary modifications to support the Marine Corps' requirement.

(U) **SIAP** is a systems engineering effort that will be utilized to reduce risk and increase interoperability for legacy and future C4ISR systems.

(U) **TBMCS**: TBMCS is an ACAT 1AC, USAF Program with joint interest/oversight. It was mandated by the Chairman, Joint Chiefs of Staff in July 93 for Air Tasking Order (ATO) Interoperability among all Services. The USMC will not be letting any competitive contracts for TBMCS, but following the USAF lead, utilizing USAF TBMCS contracts and fielding only the joint modules of TBMCS. As USMC unique requirements are identified and funded, they will be provided to the USAF (to include funding) for inclusion within TBMCS utilizing the USAF cost plus fixed fee contract.

(U) **UOC**: The UOC COC is a Competitively Awarded Contract for design (cost type) and FFP production options.

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2004
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) E. Major Performers:

(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 contract with LMC in Mar 03 to develop ECPs for software and hardware improvements.
(U) AN/TPS-59 Sensis Corp., DeWitt, NY. FY02 awarded Jan 02 for the engineering, analysis, and technical support for AN/TPS-59 program, on such efforts as National Systems Cueing, Mission Planner, and Remote Environmental Simulator (RES) Obsolescence Evaluation and Repair and Return. FY03 contract with Sensis Corp. in Mar 03 for technial engineering, manufacturing, and test support for composite materials -risk reduction.

UNIT OPERATIONS CENTER (UOC)

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)

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

FY03 Northrop Grumman, Woodland Hills, CA. Engineering services. Jan 03

FY04 Northrop Grumman, Woodland Hills, CA. Engineering services. Jan 04 Engineering services. Jan 04

FY05 Mission Research. Engineering and software services. Jan 05

SINGLE INTEGRATED AIR PICTURE (SIAP)

FY04 RNB Technologies, Inc., Stafford, VA Engineering services. Jan 04
FY05 RNB Technologies, Inc., Stafford, VA Engineering services. Jan 05

CLASSIFICATION:

Exhibit R-3 Cost Analysis					DATE: **February 2004**							
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /BA 7 Operational Sys Dev**		PROGRAM ELEMENT **0206313M Marine Corps Communications Sys**					PROJECT NUMBER AND NAME **C2273 Air Operations C2 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
CAC2S	WR	Center Charleston, SC	6.827	0.642	03/03	0.600	01/04	0.594	01/05	Continuing	Continuing	
CAC2S	RCP	Raytheon, San Diego CA	4.645	42.470	06/03	53.578	01/04	51.862	01/05	Continuing	Continuing	
CAC2S	RCP	SPAWAR	0.882	0.846	02/03	0.847	01/04	0.847	01/05	Continuing	Continuing	
CAC2S	RCP	EMA, Inc.	0.126								0.126	0.126
ADCP	WR	NSWC Crane, IN	1.853	0.419	03/03	0.123	03/04	0.084	01/05	Continuing	Continuing	
MACCS SUSTAINMENT	WR	NSWC Crane, IN	0.695	1.432	04/03	0.866	03/04	0.498	01/05	Continuing	Continuing	
MACCS SUSTAINMENT	CPFF	Lockheed				1.290	01/04	2.773	01/05	Continuing	Continuing	
MACCS SUSTAINMENT	CPFF	Litton, Woodland, CA	1.531	2.219	02/03						3.750	
MACCS SUSTAINMENT	RCP	NGIT, Reston, VA		0.024	12/02						0.024	
MACCS SUSTAINMENT	RCP	CRC Van Nuys, CA	0.174	0.284	10/02						0.458	
MACCS SUSTAINMENT	CPFF	MRC, Ft Worth, TX		0.100	06/03			2.524	01/05	Continuing	Continuing	
MACCS SUSTAINMENT	WR	Hill AFB, Utah		0.121	10/02						0.121	
MACCS SUSTAINMENT	RCP	Mevatec		0.027	03/03						0.027	
SIAP	RCP	MCSC, Quantico, VA	11.400			8.938	01/04	8.948	01/05	Continuing	Continuing	
AN/TPS-59	C/CPFF	Lockheed,Syracuse NY	22.946	3.625	03/03	0.555	01/04			Continuing	Continuing	
AN/TPS-59	T&M	Sensis	5.907	1.303	03/03					Continuing	Continuing	Continuing
AN/TPS-59	RCP	MCTSSA, CPndltn, CA		0.020	05/03						0.020	
TBMCS	MIPR	ESC, Hanscom AFB	0.673					0.246	01/05	Continuing	Continuing	
TBMCS	WR	NSWC, Crane, IN		0.359	06/03	0.151	03/04	0.191	01/05	Continuing	Continuing	
CTN	WR	NSWC, Crane, IN	1.955			7.440	01/04	2.060	01/05	Continuing	Continuing	
CTN	RCP	Raytheon	0.365			0.700	01/04	1.000	01/05	Continuing	Continuing	
CTN	RCP	Solipsys	1.031			0.050	01/04	0.215	01/05	Continuing	Continuing	
CTN	RCP	Lockheed	0.482			0.500	01/04			Continuing	Continuing	
CTN	WR	NSWC Dahlgren	0.590			0.025	01/04	1.420	01/05	Continuing	Continuing	
UOC	WR	SPAWAR	4.891			0.702	01/04	3.798	01/05	Continuing	Continuing	
UOC	WR	MCSC, Quantico, VA	1.412			0.320	01/04			Continuing	Continuing	
UOC	RCP	General Dynamics				7.478	01/04	8.663	01/05	Continuing	Continuing	
CRITICAL INFRASTRUCTURE	RCP	SSC Charleston		0.876	06/03						0.876	
CRITICAL INFRASTRUCTURE	WR	SSC Charleston		1.018	06/03	1.500	01/04				2.518	
Subtotal Product Development			**68.385**	**55.785**		**85.663**		**85.723**		**Continuing**	**Continuing**	

Remarks:

CLASSIFICATION:

Exhibit R-3 Cost Analysis					DATE: **February 2004**							
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /BA 7 Operational Sys Dev**		PROGRAM ELEMENT **0206313M Marine Corps Communications Sys**					PROJECT NUMBER AND NAME **C2273 Air Operations C2 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	FY 03 Cost to Complete	FY 03 Total Cost	Target Value of Contract
CAC2S	WR	MCSC, Quantico, VA	0.299	0.200	10/02	0.200	01/04	0.200	01/05	Continuing	Continuing	0.321
CAC2S	RCP	MCSC, Quantico, VA						4.748	01/05	Continuing	Continuing	
CAC2S	WR	MCTSSA, CPndltn,CA	0.090	0.007	10/02			1.983	01/05	Continuing	Continuing	
CAC2S	WR	MCLB Albany GA	0.021								0.021	
CAC2S	WR	3rd MAW San Diego, CA	0.016								0.016	
CAC2S	WR	NSWC Crane, IN	1.133	0.207	06/03	0.173	01/04	0.313	01/05	Continuing	Continuing	
CAC2S	WR	SPAWAR San Diego, CA				2.687	01/04			Continuing	Continuing	
CAC2S	WR	MAGCC, 29 Palms, CA	0.022	0.005	02/03						0.027	
CAC2S	WR	1st MAW		0.010	11/02						0.010	
CAC2S	WR	NAWC, Orlando, FL		0.040	02/03						0.040	
CAC2S	WR	NFESC, Port Hueneme		0.130	04/03						0.130	
CAC2S	RCP	MCOTEA	0.250	0.130	01/03	0.130	01/04	0.400	01/05	Continuing	Continuing	
MACCS Sustainment	WR	MCTSSA, CPndltn,CA				0.150	01/04			Continuing	Continuing	
MACCS Sustainment	RCP	NSWC, Crane	0.000	0.070	11/03					0.000	0.070	
MACCS Sustainment	WR	MCSC	0.033	0.057	03/03					0.000	0.090	0.033
ADCP	WR	MCTSSA, CPndltn,CA	0.211			0.038	01/04	0.035	01/05	Continuing	Continuing	
ADCP	WR	MCSC, Quantico, VA	0.070			0.030	01/04			Continuing	Continuing	
TBMCS	MIPR	GSA, Bremerton, WA		0.193	10/02					0.000	0.193	0.193
TBMCS	WR	MCTSSA, CPndltn,CA	0.083					0.035	01/05	Continuing	Continuing	
TBMCS	WR	3rd MAW El Toro, CA	0.075			0.015	01/04			Continuing	Continuing	
TBMCS	WR	MCSC, Quantico, VA	0.205	0.050	10/02	0.040	01/04			Continuing	Continuing	
TBMCS	WR	MarForRes NO, LA	0.009	0.020	01/03	0.015	01/04			Continuing	Continuing	
TBMCS	WR	CW, 1st MAW	0.001	0.020	03/03	0.015	01/04			Continuing	Continuing	
TBMCS	MIPR	ESC, Hanscom AFB			01/03	0.273	01/04			Continuing	Continuing	
TBMCS	WR	2nd MAWCh Pt, NC				0.015	01/04			Continuing	Continuing	
CTN	WR	MCLB Albany GA	0.020			0.010	01/04			Continuing	Continuing	
CTN	MIPR	STA	0.432			0.160	01/04			Continuing	Continuing	
CTN	WR	CG 1st MAW	0.014			0.005	01/04			Continuing	Continuing	
CTN	WR	MCSC, Quantico, VA	0.085			0.040	01/04			Continuing	Continuing	
DISM	WR	NSWC, Dahlgren, VA		0.075	06/03						0.075	
DISM	RCP	NSWC, Dahlgren, VA		1.169	07/03						1.169	
DISM	WR	MCSC, Quantico, VA		0.120	06/03						0.120	
Subtotal Support			**3.069**	**2.503**		**3.996**		**7.714**		**Continuing**	**Continuing**	

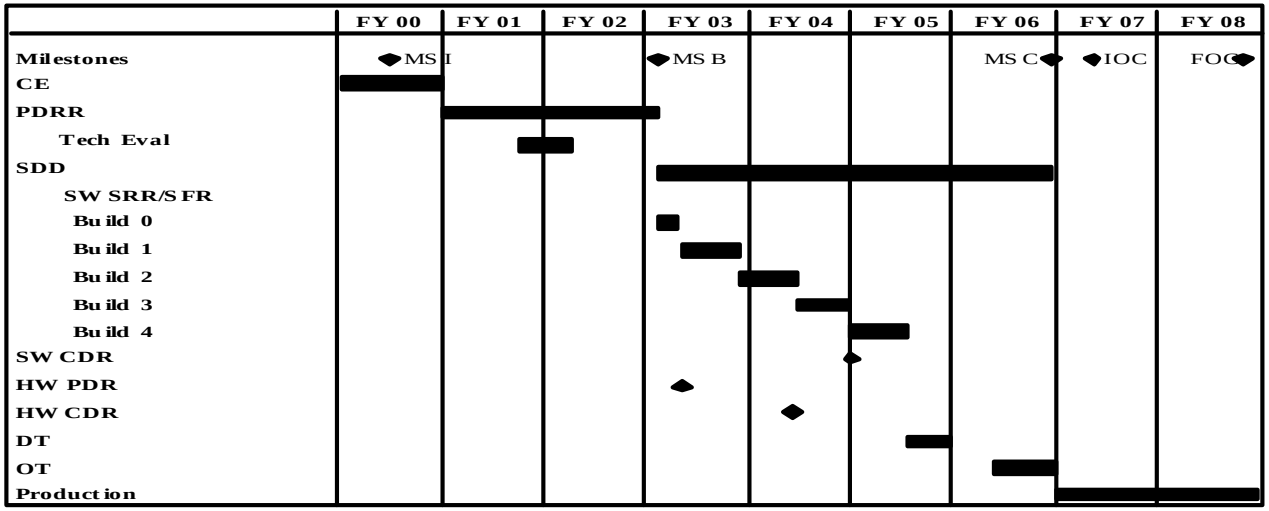
Remarks:

CLASSIFICATION:

Exhibit R-3 Cost Analysis					DATE: **February 2004**							
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /BA 7 Operational Sys Dev**		PROGRAM ELEMENT **0206313M Marine Corps Communications Sys**					PROJECT NUMBER AND NAME **C2273 Air Operations C2 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	FY 03 Cost to Complete	FY 03 Total Cost	Target Value of Contract
MACCS Sustainment	RCP	MCTSSA, CPndltn,CA				0.061	01/04			Continuing	Continuing	
CTN	WR	MCTSSA, CPndltn,CA	0.003			0.032	01/04			Continuing	Continuing	
CTN	WR	MACS-24	0.087			0.012	01/04			Continuing	Continuing	
CTN	WR	DCMC	0.022			0.002	01/04			Continuing	Continuing	
CTN	WR	Port Hueneme	0.018			0.018	01/04			Continuing	Continuing	
CAC2S		MCOTEA		0.130								
Subtotal T&E			**0.130**	**0.130**		**0.125**		**0.000**		**Continuing**	**Continuing**	
Remarks:												
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	FY 03 Cost to Complete	FY 03 Total Cost	Target Value of Contract
TBMCS	CPFF	Logicon	0.484	0.035	06/03	0.230	01/04	0.279	01/05	Continuing	Continuing	
CAC2S	IDIQ	NGIT, Reston, VA	3.535	2.957	06/03	3.459	01/04	3.500	01/05	Continuing	Continuing	
CAC2S	FFP	Mevatec, Crstl City VA	0.479	0.027	03/03	0.250	01/04	0.250	01/05	Continuing	Continuing	
CAC2S	RCP	Humphreys, Orange, CA		0.008	04/03						0.008	
CAC2S	RCP	KCI	0.199	0.203	05/03						0.402	
CAC2S	RCP	MKI		0.060	01/03						0.060	
CTN	IDIQ	Logicon	0.591			0.487	01/04	0.610	01/05	Continuing	Continuing	
UOC	IDIQ	Logicon	3.396			0.522	01/04	1.758	01/05	Continuing	Continuing	
UOC	FFP	Mevatec, Crstl City VA	0.064			0.100	01/04			Continuing	Continuing	
AN/TPS-59	WR	MCSC, Quantico, VA		0.567	01/03						0.567	
Subtotal Management			**8.748**	**3.857**		**5.048**		**6.397**		**Continuing**	**Continuing**	
Remarks:												
Total Cost				**62.275**		**94.832**		**99.834**		**Continuing**	**Continuing**	

Exhibit R-4/4a		DATE: February 2004
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /BA 7 Operational Systems Development**	PROGRAM ELEMENT **0206313M Marine Corps Communications Sys**	PROJECT NUMBER AND NAME **C2273 Air Operations C2 Systems**

CAC2S Macro Program Schedule



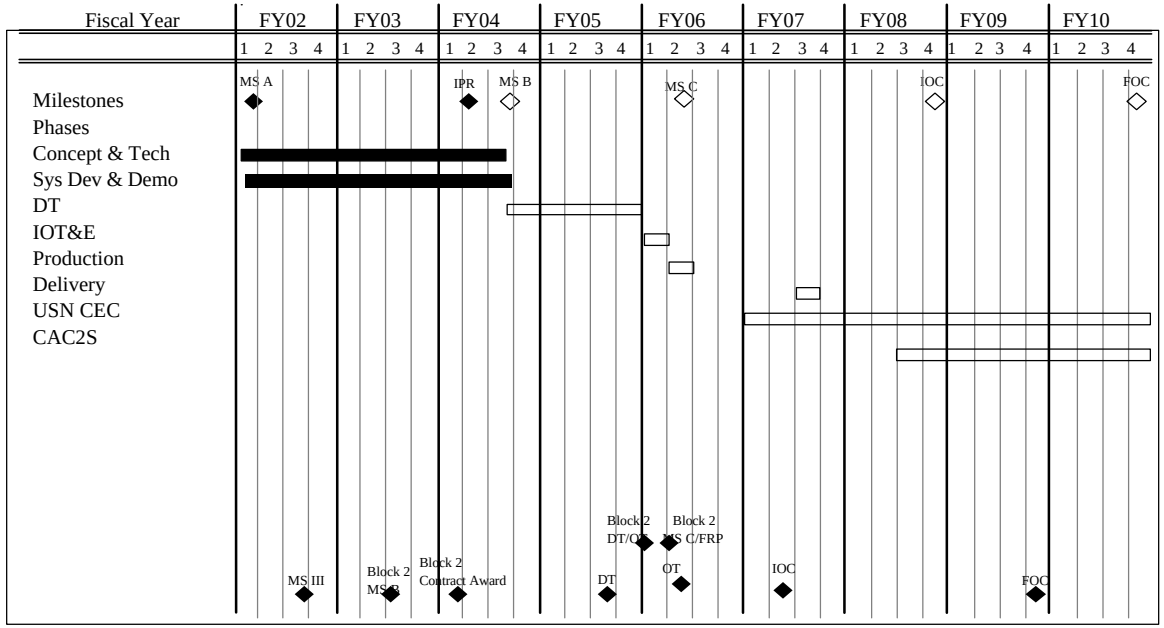
Program Funding Summary (APPN, BLI #, NOMEN)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Comp	Total Cost
(U) RDT&E,N, C2273	48.072	61.924	64.697	31.125	63.890	11.915	8.623	Continuing	Continuing
(U) PMC, BLI# 468900, CAC2S	0.000	0.000	0.000	3.899	39.139	41.755	41.905	Continuing	Continuing

Exhibit R-4/4a		DATE: February 2004
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /BA 7 Operational Systems Development**	PROGRAM ELEMENT **0206313M Marine Corps Communications Sys**	PROJECT NUMBER AND NAME **C2273 Air Operations C2 Systems**

CAC2S SCHEDULE DETAIL	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Milestone I (FY01)							
Milestone B	1st Qtr						
PDRR (FY01 - FY12)							
SDD	1st Qtr++++++++++++++++++++++++++++++						
DT			3rd Qtr				
OT				3rd Qtr			
Long Lead Items				3rd Qtr			
Milestone C				4th Qtr			
Production					1st Qtr+++++++++++++++++		
IOC					2nd Qtr		
FOC						4th Qtr	

Exhibit R-4/4a		DATE: February 2004
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /BA 7 Operational Systems Development**	PROGRAM ELEMENT **0206313M Marine Corps Communications Sys**	PROJECT NUMBER AND NAME **C2273 Air Operations C2 Systems**

CTN



Program Funding Summary

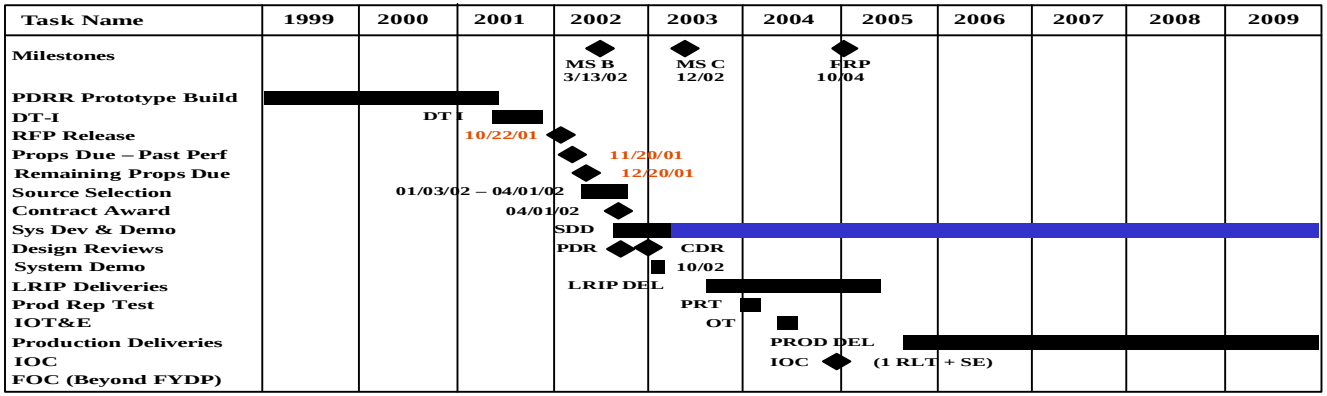
(APPN, BLI #, NOMEN)	**FY 2003**	**FY 2004**	**FY 2005**	**FY 2006**	**FY 2007**	**FY 2008**	**FY 2009**	**To Comp**	**Total Cost**
(U) RDT&E,N, C2278	7.727	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7.727
(U) RDT&E,N, C2273	0.000	9.481	5.305	6.295	1.339	1.332	0.849	Continuing	Continuing
(U) PMC, BLI# 464000, CTN	0.000	0.000	0.000	22.477	34.840	43.993	68.803	Continuing	Continuing

Exhibit R-4/4a		DATE: February 2004
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /BA 7 Operational Systems Development**	PROGRAM ELEMENT **0206313M Marine Corps Communications Sys**	PROJECT NUMBER AND NAME **C2273 Air Operations C2 Systems**

CTN SCHEDULE DETAIL	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Milestone A (1st Qtr FY02)							
Concept & Technology Development	1st Qtr FY02++++++++						
Milestone B		3rd Qtr					
System Development and Demonstration	2nd Qtr++++++++++						
DT		3rd Qtr++++++++++					
IOT&E				1st Qtr			
Milestone C				2nd Qtr ++++++++++++++++++++++			
Production				1st Qtr++++++++++			
Delivery					3rd Qtr+++++++++++++++		
IOC						3rd Qtr	

Exhibit R-4/4a		DATE: February 2004
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



Program Funding Summary (APPN, BLI #, NOMEN)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl	Total Cost
(U) RDT&E,N, C2270	9.939	0.000	0.000	0.000	0.000	0.000	0.000	0	9.939
(U) RDT&E,N, C2273	0.000	9.122	14.219	15.720	22.954	10.770	6.256	Continuing	Continuing
(U) PMC, BLI# 463100, UOC	25.241	0.000	0.000	0.000	0.000	0.000	0.000	0	25.241
(U) PMC, BLI# 419000, UOC	0.000	29.010	35.933	30.109	54.471	96.523	112.784	Continuing	Continuing

Exhibit R-4/4a		DATE: February 2004
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 SCHEDULE DETAIL	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Milestone B (2nd Qtr FY 02)							
System Development and Demonstration	1st Qtr++++++++++++++++++						
IOT&E		2nd Qtr					
Milestone C	1st Qtr						
LRIP Deliveries	3rd Qtr++++++++++++++++++						
IOC		4th Qtr					
Full Rate Production			1st Qtr				
Production Deliveries			3rd Qtr ++				
Hardware/Software Development			3rd Qtr ++				
Engineering Support Services			3rd Qtr ++				

EXHIBIT R-2a, RDT&E Project Justification					DATE: February 2004				
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 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost To Complete	Total Program
Project Cost	**8.142**	**12.965**	**8.136**	**5.437**	**4.527**	**4.222**	**4.608**	**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 RRPs 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 rugerized, modular; man packable system specifically designed utilizing emerging NDI/COTS/GOTS technology for RRP operations, particularity those conducted under the most austere conditions. The RREP SS-3 will be fielded in the 4th Qtr FY04. It will have the added capability to intercept advanced wireless targets identified by the NSA to be operated from remoted positions. SS-3 will extend its life cycle to six years and product improvements will focus on new software and DSP technologies which may be incorporated into the existing system. This approach allows the program to utilize the major components for the entire life-cycle while still keeping pace with emerging Threats and technologies.

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 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.

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2004
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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.000**	**0.248**
RDT&E Articles Qty			

CESAS - Perform integration efforts of Development items to include Antenna and MCREWS Training equipment.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.000**	**0.321**
RDT&E Articles Qty			

CESAS - Research and Development Directed Energy and Directional Attack Antennas.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.000**	**0.150**
RDT&E Articles Qty			

CESAS - Research and Devlopment 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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.000**	**0.300**
RDT&E Articles Qty			

CESAS - Program support and documentation Development and Maintainance.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.000**	**0.047**
RDT&E Articles Qty			

CESAS - Program Management Support.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**1.100**	**0.404**	**0.000**
RDT&E Articles Qty			

MEWSS PIP: Developmental testing and Operational Analysis.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.400**	**1.000**	**1.000**
RDT&E Articles Qty			

MEWSS PIP: System software enhancements and Pre-Planned Product Improvement (P3I).

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2004
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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**3.144**	**3.400**	**0.000**
RDT&E Articles Qty			

MEWSS PIP: ELINT System enhancements.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.828**	**4.000**	**2.210**
RDT&E Articles Qty			

MEWSS PIP: Operational Readiness enhancements.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.159**	**0.000**	**0.000**
RDT&E Articles Qty			

TPCS Upgrade: SSCC.SC, Engineering and technical support

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.290**	**0.000**	**0.000**
RDT&E Articles Qty			

TPCS Upgrade: System Engineering and Technical Assistance (SETA) (CSC).

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.100**	**0.000**	**0.000**
RDT&E Articles Qty			

TPCS Upgrade: Software upgrades/system enhancements.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.414**	**0.984**	**0.917**
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 concertrating on reductions of size, weight, and power requirements.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.800**	**1.466**	**1.308**
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) and research on TADIL J). Advanced Communications Suite, Sensitive Compaartmented Information (SCI) workstation, and system accreditation.

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2004
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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.561**	**1.039**	**0.753**
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 requirements and solutions for the EA-6B mission plannng and joint mission planning environments and systems.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.212**	**0.361**	**0.370**
RDT&E Articles Qty			

TERPES: Program Management Support.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.134**	**0.000**	**0.000**
RDT&E Articles Qty			

RREP: Integration GOTS/COTS electronic attack (EA) capability (SS-3).

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.311**	**0.412**
RDT&E Articles Qty			

RREP: Research and development of the RREP SS-3 PIP

(U) Total $	**8.142**	**12.965**	**8.136**

(U) PROJECT CHANGE SUMMARY:	**FY2003**	**FY2004**	**FY2005**
(U) FY 2004 President's Budget:	**7.987**	**9.727**	**5.655**
(U) Adjustments from the President's Budget:			
(U) Congressional/OSD Program Reductions			
(U) Congressional Rescissions			
(U) Congressional Increases		3.400	
(U) Reprogrammings	0.340		2.528
(U) SBIR/STTR Transfer	-0.185		
(U) Minor Affordability Adjustments		-0.162	-0.047
(U) FY 2005 President's Budget:	**8.142**	**12.965**	**8.136**

CHANGE SUMMARY EXPLANATION:

(U) Funding: See Above.

(U) Schedule: Not Applicable.

(U) Technical: Not Applicable.

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2004
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) C. OTHER PROGRAM FUNDING SUMMARY:A167

Line Item No. & Name	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	25.213	20.633	0.000	1.349	0.511	0.000	0.000	Continuing	Continuing
(U) PMC BLI 474700 Intell Suppt Eq RREP	2.742	0.000	0.000	4.194	0.000	0.000	4.228	0.000	11.164
(U) PMC BLI 474700 Intell Suppt Eq TPCS-MPC	0.000	0.000	6.360	8.038	7.746	5.936	0.299	0.000	28.379
(U) PMC BLI 474900 TPCS UPGRADE	6.781	0.000	0.000	0.000	0.000	0.000	0.000	0.000	6.781
(U) PMC BLI 474900 Mod Kits INTEL TERPES	1.163	2.828	0.000	3.022	0.000	3.182	0.000	0.000	10.195
(U) PMC BLI 463600 FLAMES (CESAS)	2.470	0.000	0.984	4.170	4.079	0.475	1.375	0.000	13.553

(U) Related RDT&E:

(U) (U) PE 0305885G (Tactical Cryptologic Program)

(**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 Abbreviated Acquisition Program (AAP) was granted. 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. Integrated Logistics Support (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.

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2004
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) E. MAJOR PERFORMERS:

MOBILE ELECTRONIC WARFARE SUPPORT SYSTEM, PRODUCT IMPROVEMENT PROGRAM (MEWSS-PIP)

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
SPACE AND NAVAL WARFARE SYSTEMS CENTER (SPAWAR), Charleston, SC. Legacy Upgrades. Jul 03
MCOTEA, Quantico, VA - Provide funds for operational Assessment, Mar 03.
IEWTD, Ft Huachuca, AZ - Provide funds for Developmental Testing Support, Jan03
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
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

FY03 SPAWAR, Charleston, S.C., Funds for Engineering and Development
Digital Access Corp, DAC, Woodbridge, VA, Funds for Software Development.
MTC, Woodbridge, VA , Funds for Logistical Support.

TACTICAL ELECTRONIC RECONNAISSANCE PROCESSING AND EVALUATION (TERPES)

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)

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

Exhibit R-3 Cost Analysis								DATE: **February 2004**				
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**				
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
MEWSS	CPFF	Lockheed Martin	15.617	0.444	11/02	1.000	11/03	1.000	11/04	Continuing	Continuing	
MEWSS	WR	SPAWAR, S.C	0.000	1.100	02/03	4.000		0.000		Continuing	Continuing	
MEWSS	WR	SPAWAR, S.C	0.000	0.828	07/03	0.404	11/03	2.210	11/04	Continuing	Continuing	
MEWSS	RCP	PSU/Albany	0.000	3.100	05/03	3.400	03/04	0.000		Continuing	Continuing	
TERPES	RCP	NG0-CAL Mic	0.961	0.561	10/02	0.984	10/03	0.917	12/04	Continuing	Continuing	
TERPES	RCP	Lockheed Martin	1.075	0.800	10/02	1.178	10/03	1.021	02/04	Continuing	Continuing	
TERPES	WR	NAWC, Pt. Mugu CA	3.255	0.289	10/02	1.039	10/03	0.753	10/04	Continuing	Continuing	
TERPES	RCP	PRB/COMPTEK	0.090	0.125	10/02	0.288	04/04	0.287	04/05	Continuing	Continuing	
RREP	RCP	NSWC, Crane	0.332	0.134	02/03	0.311	02/04	0.412	02/05	Continuing	Continuing	
CESAS	WR	SPAWARSYSCEN						0.248	10/04	Continuing	Continuing	
CESAS	CPFF	Antenna Res, MD						0.321	10/04	Continuing	Continuing	
CESAS	CPFF	Radio Recon Tech						0.100	10/04	Continuing	Continuing	
CESAS	T&M	RAS Eng Campbell,CA						0.150	10/04	Continuing	Continuing	
Subtotal Product Development			**21.330**	**7.381**		**12.604**		**7.419**		**Continuing**	**Continuing**	
Remarks:												
Cost Categories (Tailor to WBS, or Sys/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
TPCS Upgrade	RCP	DAC, Wdbg		0.100	02/03					Continuing	Continuing	
TPCS Upgrade	RCP	MTC		0.290	10/02					Continuing	Continuing	
TPCS Upgrade	WR	SPAWARSYSCEN	0.049	0.159	12/02					Continuing	Continuing	
TERPES	RCP	NG-IT	0.263	0.177	10/02	0.261	10/03	0.270	10/04	Continuing	Continuing	
TERPES	RCP	DAC, Wdbg	0.752	0.035	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			**1.064**	**0.761**		**0.361**		**0.670**		**Continuing**	**Continuing**	
Remarks:												
Cost Categories (Tailor to WBS, or Sys/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
MEWSS	RCP	Army	0.200									
Subtotal T&E			**0.200**	**0.000**		**0.000**		**0.000**		**Continuing**	**Continuing**	
Remarks:												
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
CESAS	WR	MCSC						0.049	10/04	Continuing	Continuing	
Subtotal Management			**0.000**	**0.000**		**0.000**		**0.047**		**Continuing**	**Continuing**	
Remarks:												
Total Cost				**8.142**		**12.965**		**8.136**		**Continuing**	**Continuing**	

Exhibit 4/4a Schedule Profile/Detail		DATE: February 2004
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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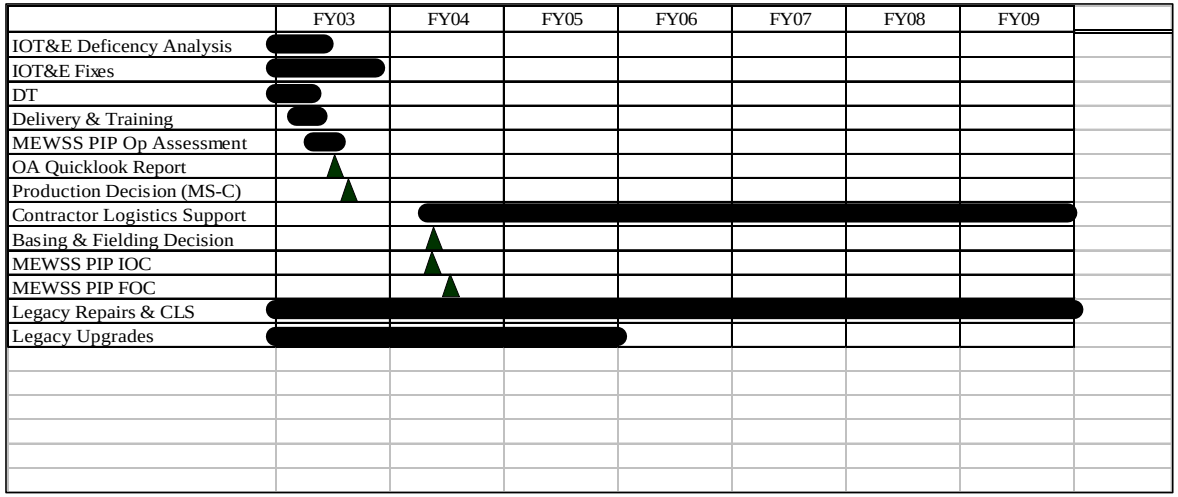
MEWSS Schedule



UNCLASSIFIED

Program Funding Summary **(APPN, BLI #, NOMEN)**	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl	Total Cost
(U) RDT&E,N	5.472	8.804	3.210	0.461	0.000	0.000	0.000	0.000	17.947
(U) PMC, BLI# 463600 Mod Kits MEWSS	25.213	20.633	0	1.349	0.511	0.000	0.000	Continuing	Continuing

Exhibit 4/4a Schedule Profile/Detail		DATE: February 2004
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**

MEWSS SCHEDULE DETAIL	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Developmental Testing	4Q	1Q/2Q						
Operational Assessment		2Q/3Q						
MS C			2Q					
Field System MEWSS PIP 1-3			2Q					
Contractor Logistics Support (CLS)			2Q					
IOC MEWSS PIP			1Q					
MEWSS Legacy Block 0 and 1 Production			1Q					
MEWSS Legacy Block 0 and 1 Fielding			4Q					
FOC MEWSS PIP			3Q					
MEWSS Legacy Block 2 and 3 Production			3Q/4Q					
MEWSS Legacy Block 2 and 3 Fielding				1Q 3Q				

Exhibit 4/4a Schedule Profile/Detail		DATE: February 2004
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		4Q							
SS-3 IOC/FOC				4Q	1Q				
SS-3 PIP IOC/FOC						1Q			
SS-4 MS B						2Q			
SS-4 MS C								2Q	
SS-4 IOC/FOC									1Q

Program	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl	Total Cost
(APPN, BLI #, NOMEN)									
(U) RDT&E,N	0.134	0.311	0.412	0.420	0.421	0.427	0.438	Continuing	Continuing
(U) PMC BLI 474700 Intell Suppt EQ RREP	2.742	0.000	0.000	4.194	0.000	0.000	4.228	0.000	11.164

Exhibit 4/4a Schedule Profile/Detail		DATE: February 2004
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 UPGRADE SCHEDULE DETAIL	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
SS-3 MS B	3Q							
SS-3 MS-C		4Q						
SS-3 IOC/FOC			2-3Q					
MS-B AND MS-C for SS-3 PIP will not take place. RREP will become a series of independent efforts to spiral in technology.								

* MS-B AND MS-C will not take place. RREP will become a series of independent efforts to spiral in technology.

EXHIBIT R-2a, RDT&E Project Justification					DATE: February 2004				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /BA-7 Operational Sys Development**	PROGRAM ELEMENT NUMBER AND NAME **0206313M Marine Corps Communication Systems**					PROJECT NUMBER AND NAME **C2275 Radio Systems**			
COST ($ in Millions)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	**0.565**	**8.772**	**8.670**	**4.865**	**4.328**	**4.222**	**3.550**	**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 (Light Armored Vehcle Command and Control Variant, Unit Operations Center (UOC), and EFV (Expeditionary Fighting Vehicle) formerly 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 HMMWV mounted 100' telescoping antenna mast replacing the two AN/MRC- 142 50' antennas. TEAMS provides a safer more efficient mast to allow up to twice the current height capability to overcome obstructions caused by over head canopy and obstructing ridges which eliminates the need to set up additional relay sites. TEAMS will be employed with AN/MRC-2 then JTRS when the AN/MRC-142 is replaced by JTRS.

(**U) Tactical Satellite Comm Terminal (TSCT)-Lightweight Multiband Satellite Terminal (LMST)-** An Air Force program with PM Milsatcom (Army) managing contract with Harris Corp. The LMST is a tri-band SATCOM (Satellite Communications) terminal mounted in transit cases that will augment the current GMF(Ground Mobile Force) 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, First in Command and Control System (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 their 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 Troposhperic 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 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 Transition Switch Module (TSM) is fielded. The AN/PSC-5 Mod allows for the fielded AN/PSC-5 to be 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.

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2004
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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.237**	**1.100**	**1.100**
RDT&E Articles Qty			

JTRS: Migration/Integration Studies and Analysis. Manpack/Handheld JTRS.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.328**	**0.598**	**0.614**
RDT&E Articles Qty			

JTRS: Program Support and Management.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**3.472**	**4.555**
RDT&E Articles Qty			

JTRS: Gnd Vehicular Cluster 1 EMD Radio Manufacturing.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.752**	**0.844**
RDT&E Articles Qty			

JTRS: Technical and Engineering Support.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.325**	**0.244**
RDT&E Articles Qty			

JTRS: Contract Advisory and Assistance Services.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.550**	**0.000**
RDT&E Articles Qty			

TSCT (LMST): Integration and update support documentation.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.100**	**0.000**
RDT&E Articles Qty			

TSCT (LMST): Contract support costs.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.150**	**0.000**
RDT&E Articles Qty			

TSCT (LMST): MCTSSA interoperability/DISA on-orbit tests.

(U) Total $	**0.565**	**8.772**	**8.670**

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2004
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:

	FY2003	FY 2004	FY 2005
(U) FY 2004 President's Budget:	**0.584**	**8.881**	**8.698**
(U) Adjustments from the NAVCOMPT Budget:			
(U) Congressional/OSD Program Reductions			
(U) Congressional Rescissions			
(U) Congressional Increases			
(U) Reprogrammings	0.010		
(U) SBIR/STTR Transfer	-0.015		
(U) Minor Affordability Adjustment	-0.014	-0.109	-0.028
(U) FY 2005 President's Budget:	**0.565**	**8.772**	**8.670**

CHANGE SUMMARY EXPLANATION:
(U) Funding: See Above.
(U) Schedule: Not Applicable.
(U) Technical: Not Applicable.

(U) C. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl	Total Cost
(U) PMC, BLI# 464300 Jt Tactical Radio Sys	0.000	13.817	26.009	32.418	97.755	80.695	73.371	Continuing	Continuing
(U) PMC BLI# 463300 Radio Systems (LMST)	4.598	8.400	5.223	0.289	0.089	0.000	0.000	0.000	18.599
(U) PMC BLI# 463300 LEGACY RADIO SYS	0.000	0.000	3.756	7.182	10.205	9.253	6.265	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 capabilites in support of the Wideband Gapfiller satellites. The LMST integration program leverages off the current efforts and integrates the full duplex Ka-band capabilites 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.

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2004
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) 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 dismounted 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, Post Deployment Software Support (PDSS) of Enhanced Position Location Reporting System (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. 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 EFV will increase its C4I capability and eliminate the cost of retrofitting the EFV for JTRS Life Cycle Cost Reduction. JTRS will reduce development costs for enhancements to future radio system implementations, reduce maintenance support costs by reducing the number of types of radio systems in the inventory, and reduce operating costs through the employment of multi-function radio systems.

(U) E. MAJOR PERFORMERS:

FY04 TSCT (LMST) HARRIS COMM SYS, MELBOURNE, FL K-BAND INTERGRATION , OCT03.

FY03 JTRS: MITER PROGRAM SUPPORT, OCT 02.

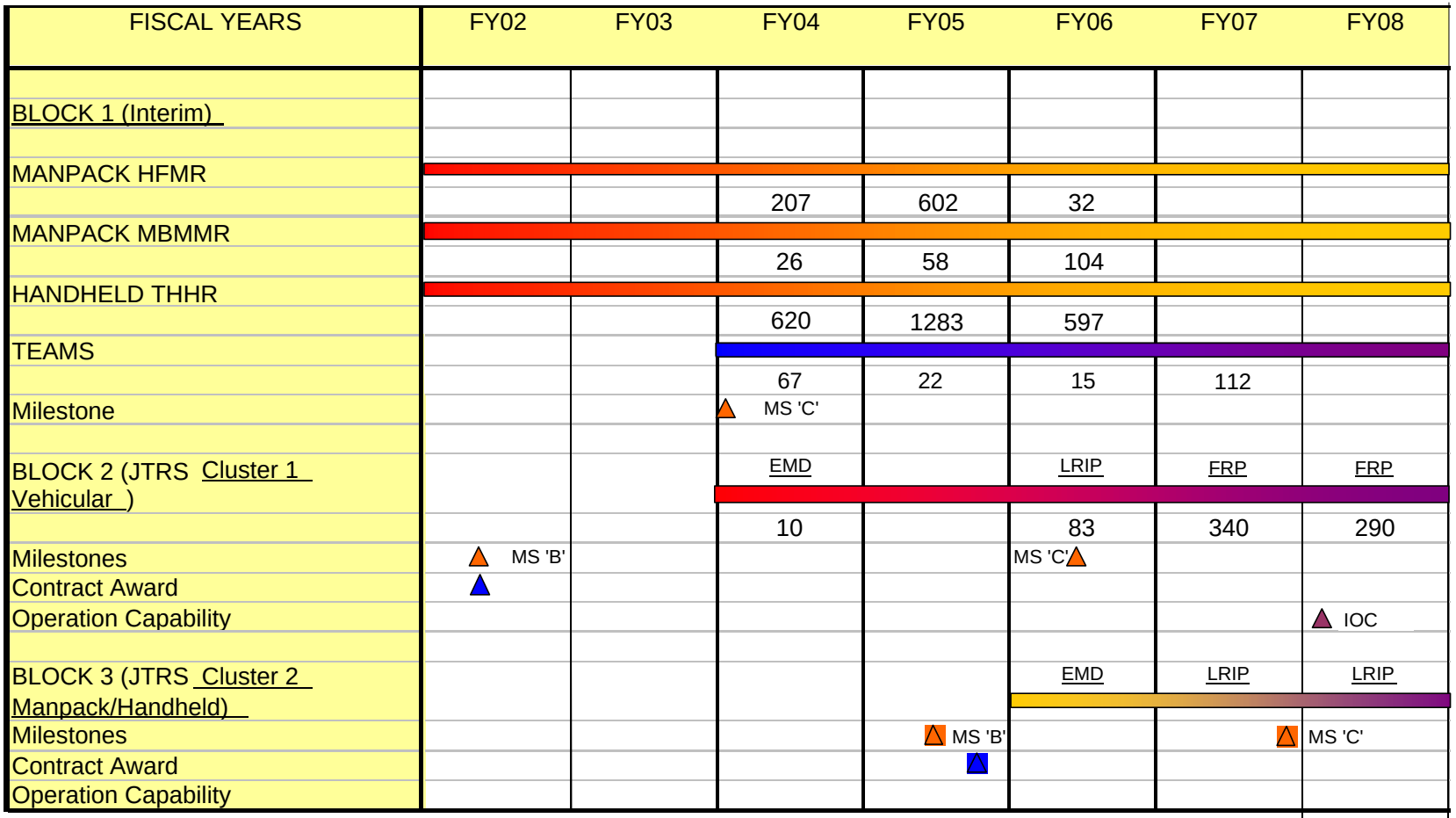
FY04 JTRS: BOEING, ANAHEIM, CA,MAJOR H/W SUB, HARRIS, ROCHESTER, NY,BAE, WAYNE NJ. MAJ S/W SUB TRW SEATTLE, WA, OCT 04.

FY05 JTRS: BOEING, ANAHEIM, CA ,MAJOR H/W SUB, HARRIS, ROCHESTER, NY ,BAE, WAYNE NJ. MAJ S/W SUB TRW SEATTLE, WA, OCT

Exhibit R-3 Cost Analysis								DATE: February 2004				
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**				
Cost Categories (Tailor to WBS, or Sys/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
LMST Ka-band Integration	FFP	Harris Corp, Florida				0.550	10/03			Continuing	Continuing	
JTRS EMD Radio Manufacturing	CPAF	TBD	0.000	0.000		3.768	06/02	4.811	10/04	Continuing	Continuing	
Subtotal Product Development			**0.000**	**0.000**		**4.318**		**4.811**		**Continuing**	**Continuing**	
Remarks:												
Cost Categories (Tailor to WBS, or Sys/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
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 TRAVEL	Allot	MARCORSYSCOM		0.020	12/02	0.020	10/03	0.020	10/04		0.060	
JTRS Integration/Migration	FFP	NGIT, Stafford, VA		0.237	10/02	1.105	12/03	1.100	10/04	Continuing	Continuing	
JTRS Tech & Eng Support	FFP	NORTH GRUMMAN				0.752	10/03	0.844	10/04	Continuing	Continuing	
Subtotal Support			**0.000**	**0.257**		**1.977**		**1.964**		**Continuing**	**Continuing**	
Remarks:												
Cost Categories (Tailor to WBS, or Sys/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
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				0.070	
Subtotal T&E			**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 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	FFP	NGIT,Stafford, VA		0.308	10/02	0.492	12/03	0.548	10/04	Continuing	Continuing	
JTRS Contract Adv & Assist	FFP	TITAN VA				0.315	12/03	0.234	10/04	Continuing	Continuing	
Subtotal Management			0.000	0.308		0.807		0.782		0.000	1.897	
Remarks:												
Total Cost				**0.565**		**8.772**		**8.670**		**Continuing**	**Continuing**	

Exhibit 4/4a, Schedule Profile/Detail		DATE: February 2004
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)



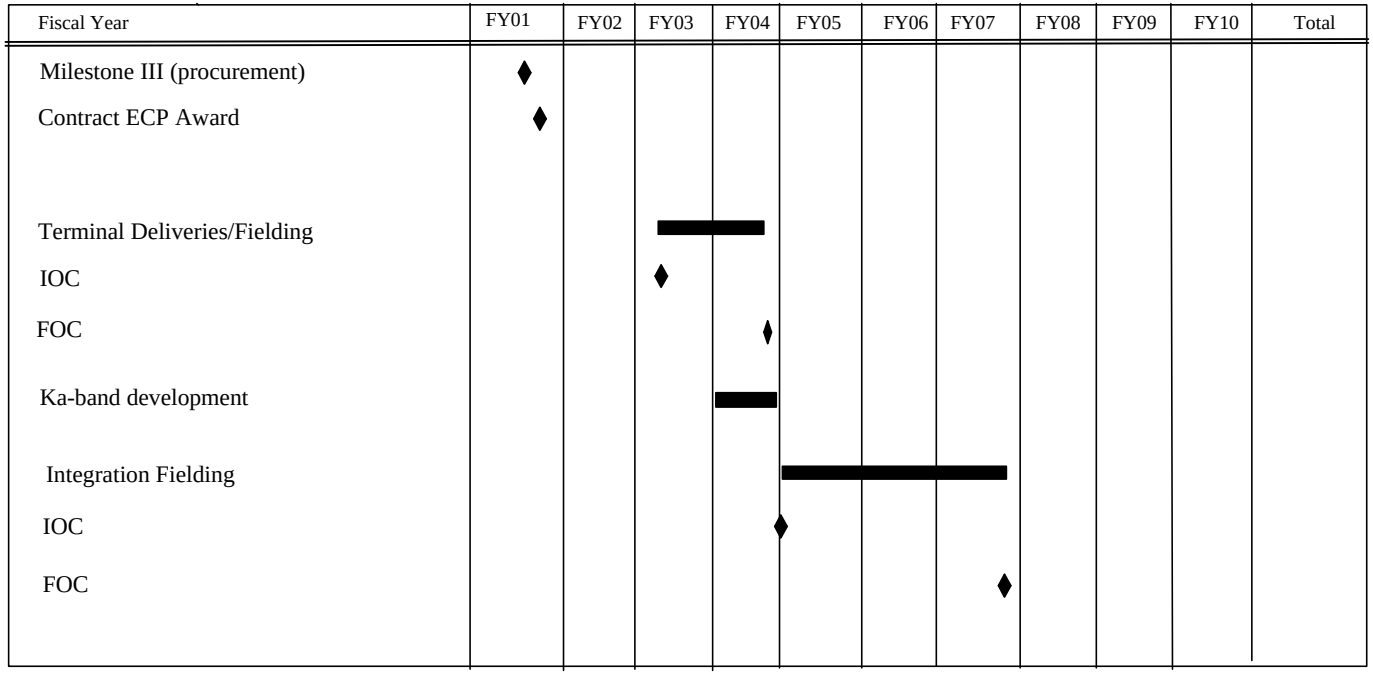
Program Fu[illegible]ng Summary (APPN, BLI #, NOMEN)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl	Total Cost
(U) RDT&E,N	0.565	7.972	8.670	4.104	3.741	1.571	1.634	Continuing	Continuing
(U) PMC BLI# 464300 JTRS	0.000	13.817	26.009	32.418	97.755	80.695	73.371	Continuing	Continuing

Exhibit 4/4a, Schedule Profile/Detail		DATE: February 2004
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**

JTRS SCHEDULE DETAIL	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Milestone 'B' (Block 2 Gnd Veh)							
Contract Award (Block 2 Gnd Veh)							
SRR (Block 2 Gnd Veh)							
PDR (Block 2 Gnd Veh)							
IBR (Block 2 Gnd Veh)	1Q						
PMR (Block 2 Gnd Veh)	1Q						
CDR (Block 2 Gnd Veh)	2Q						
Early Operational Assessment (Block 2 Gnd Veh)		4Q					
DT/OT (Block 2 Gnd Veh)			4Q				
Milestone 'C' (Block 2 Gnd Veh)				2Q			

Exhibit 4/4a, Schedule Profile/Detail		DATE: February 2004
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**

TACTICAL SATELLITE COMMUNICATION TERMINAL (LMST)



Program Funding Summary (APPN, BLI #, NOMEN)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY2008	FY2009	To Compl	Total Cost
(U) RDT&E,N	0.000	0.800	0.000	0.000	0.000	0.555	0.743	0.000	2.098
(U) PMC BLI# 463300 Radio Systems (LMST)	4.598	8.400	5.223	0.289	0.089	0.000	0.000	0.000	18.599

Exhibit 4/4a, Schedule Profile/Detail		DATE: February 2004
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**

LMST SCHEDULE DETAIL	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Terminal Deliveries								
IOC		2ndQtr						
FOC			4thQtr					
Ka-band Development			1st-4thQtr					
Ka-band Integration								
IOC				1stQtr				
FOC						4thQtr		

EXHIBIT R-2a, RDT&E Project Justification				DATE: February 2004					
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**				
COST ($ in Millions)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost To Complete	Total Program
Project Cost	**2.773**	**6.449**	**3.803**	**4.663**	**3.913**	**4.039**	**3.430**	**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). JNMS architecture includes the Marine Corps System Planning Engineering Evaluation Device (SPEED) software.

(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 Marine Air Ground Task Force (MAGTF) communications infrastructure to provide the commander an integrated data network, forming the communications backbone for Tactical Data Systems (TDS) and the Defense Messaging System (DMS). TDN consists of Gateways (AN/TSQ-222) and Data Distribution Systems (AN/TSQ-228), interconnected with one another and their subscribers via a combination of common user long-haul transmission systems, local area networks (LAN), and switched telephone systems. The TDN PIP provides a smaller and more mobile variant DDS for the Battalion, Secure Wireless LAN capability for enhanced mobility, integrates security interdiction products into the Gateway; and provides critical refresh of non-MCHS network components such as routers, switches, converters, and tactical peripherals.

(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) B. ACCOMPLISHMENTS/PLANNED PROGRAM:

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.731**	**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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**1.382**	**1.022**
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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**2.042**	**0.000**	**0.000**
RDT&E Articles Qty			

TSM: Development and testing of Engineering Development Models (EDM).

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2004
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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.971**	**1.648**
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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**4.096**	**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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.000**	**1.133**
RDT&E Articles Qty			

FICCS: Pursue miniaturization of hardware solutions, colaborate with MCTSSA SIE and conduct Interoperability Testing at JITC.

(U) Total $	**2.773**	**6.449**	**3.803**

(U) PROJECT CHANGE SUMMARY:

	FY2003	FY 2004	FY 2005
(U) FY 2004 President's Budget:	**4.513**	**6.381**	**3.815**
(U) Adjustments from the President's Budget:			
(U) Congressional/OSD Program Reductions			
(U) Congressional Rescissions			
(U) Congressional Increases			
(U) Reprogrammings	-1.627	0.152	
(U) SBIR/STTR Transfer	-0.116		
(U) Minor Affordability Adjustment	0.003	-0.084	-0.012
(U) FY 2005 President's Budget:	**2.773**	**6.449**	**3.803**

CHANGE SUMMARY EXPLANATION:
(U) Funding: See Above.
(U) Schedule: Not Applicable.
(U) Technical: Not Applicable.

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2004
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) C. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	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	5.790	5.274	1.293	1.050	0.650	0.000	0.000	14.057
FICCS	0.000	9.527	11.288	17.102	1.884	0.768	0.853	0.000	41.422
JECCS	19.970	0.000	0.000	0.000	0.000	0.000	0.000	0.000	19.970
(U)PMC BLI 468800 Transition Switch Module	0.000	22.902	9.245	47.005	52.913	19.809	2.958	Continuing	Continuing

(U) Related RDT&E: Not Applicable.

(**U) D. ACQUISITION STRATEGY JNMS:** The JNMS acquisition strategy awards a Cost Plus Fixed Fee (CPFF) contract for the development of the JNMS software, Firm Fixed Price (FFP) options for JNMS software and hardware suites, and a future Time and Materials (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 Commercail Off The Shelf (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.

(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 Low Rate Initial Production (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 Engineering Development Models (EDMs). They will then be tested prior to incorporating them into the TSM production systems.

(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 Office of Naval Research Science and Technology (ONR S&T) and $80K Extended Literal Battlespace Advanced Concept Technology Demonstration (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.

(U) E. Major Performers:

FY03 - (JNMS) NGIT, Winterpark, FL. SPEED enhancements; CECOM Monmouth, NJ, hardware test suite

FY04 - (JNMS) NGIT, Winterpark, FL. SPEED enhancements; CECOM, Momouth, NJ. USMC JNMS adapters, MCOTEA, Quantico, VA, and FMF IOT&E support, 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

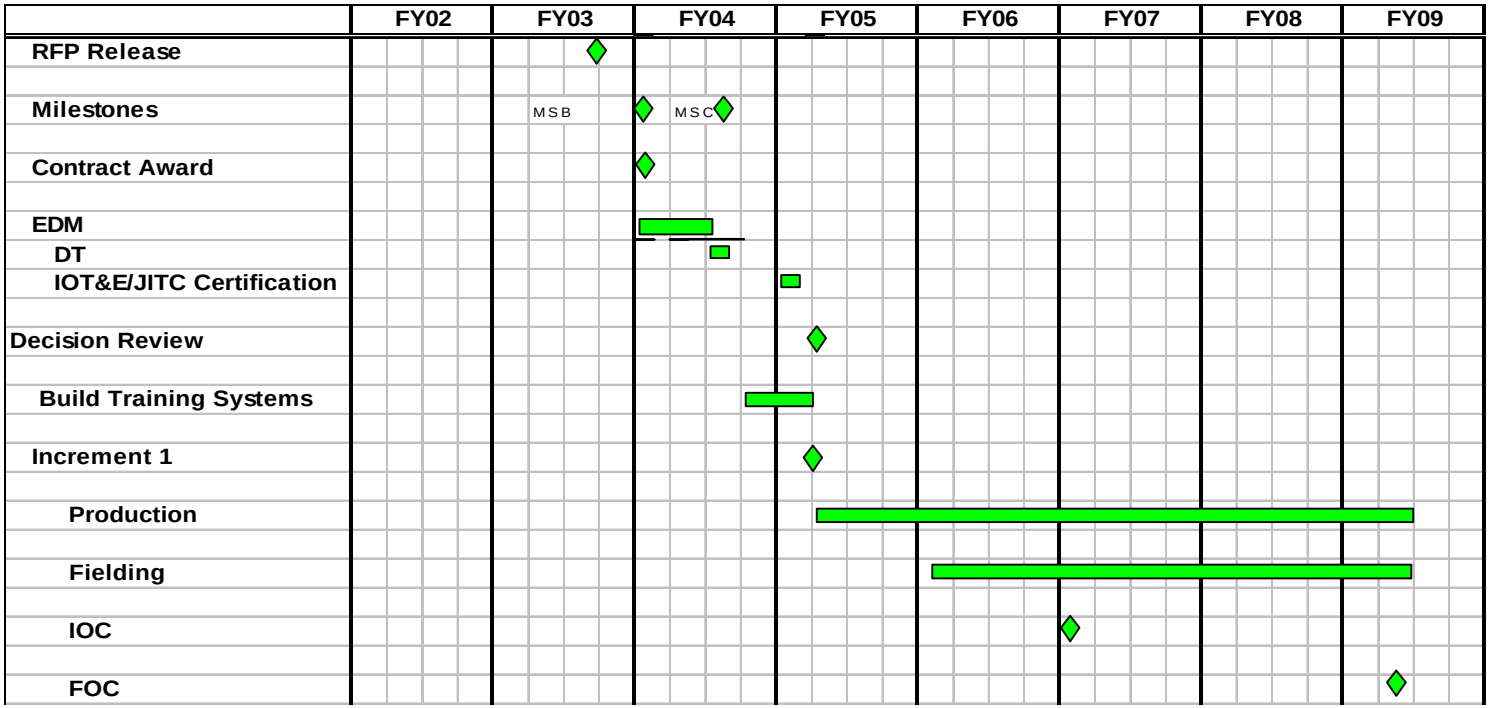
FY04 - (FICCS) Darlington, Inc., Wando, SC. Integration and test of Gigabit Ethernet and Wireless Telephone technology, OCT 04

FY05 - (FICCS) Darlington, Inc., Wando, SC. Hardware miniaturization and colaboration/testing with MCTSSA SIE & JITC, OCT 05

Exhibit R-3 Cost Analysis						DATE: **February 2004**						
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /BA 7 Operational Sys Dev**		PROGRAM ELEMENT **0206313M Marine Corps Communications Sys**				PROJECT NUMBER AND NAME **C2276 Communications Switching & Control Systems**						
Cost Categories (Tailor to WBS, or Sys/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
JNMS Development	CPFF	CECOM, Monmouth, NJ	0.000	0.114	01/03	0.199	01/04	0.154	01/05	Cont.	Cont.	
JNMS SPEED	FFP	NGIT Winterpark, FL	0.500	0.222	01/03	0.602	01/04	0.458	01/05	Cont.	Cont.	
FICCS	CPFF	GSA	0.000	0.000		3.396	01/04	0.633	10/04	Cont.	Cont.	
TSM	FFP	MCSC, Quantico, Va	0.000	0.884	07/03	0.543	10/03	0.688	10/04	Cont.	Cont.	
Subtotal Product Dev			**0.500**	**1.220**		**4.740**		**1.933**		**Cont.**	**Cont.**	
Remarks:												
Cost Categories (Tailor to WBS, or Sys/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
JNMS PO Support	WR	MCSC, Quantico, VA/MCTSSA	0.064	0.100	01/03	0.081	01/04	0.090	01/05	Cont.	Cont.	
JNMS Support Contractor	FFP	NGIT, Aquia, VA	0.125	0.230	01/03	0.300	01/04	0.320	01/05	Cont.	Cont.	
FICCS	CPFF	Support Contractor	0.000	0.000		0.500	10/03	0.300	10/04	Cont.	Cont.	
TSM	FFP	NGIT, Aquia, VA	0.000	0.716	10/02	0.304	10/03	0.285	10/04	Cont.	Cont.	
Subtotal Support			**0.189**	**1.046**		**1.185**		**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 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	0.065	01/03	0.200	12/03	0.000		Cont.	Cont.	
FICCS	WR	MCOTEA	0.000	0.000		0.200	10/03	0.200	10/04	Cont.	Cont.	
TSM	FFP	CECOM, FT Monmouth, NJ	0.000	0.243	10/02	0.000	11/03	0.450	12/04	Cont.	Cont.	
TSM	WR	MCOTEA	0.000	0.199	12/02	0.124	10/03	0.225	10/04	Cont.	Cont.	
Subtotal T&E			**0.000**	**0.507**		**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 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**	
Remarks:												
Total Cost			**0.689**	**2.773**		**6.449**		**3.803**		**Cont.**	**Cont.**	

CLASSIFICATION:		
Exhibit R-4/4a Schedule Profile/Detail		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /BA 7 Operational Sys Dev**	PROGRAM ELEMENT **0206313M Marine Corps Communications Sys**	PROJECT NUMBER AND NAME **C2276 Communications Switching & Control Systems**

TRANSITION SWITCH MODULE



Program Funding Summary (APPN, BLI #, NOMEN)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl	Total Cost
(U) RDT&E,N	2.042	0.971	1.648	1.671	1.140	0.906	0.921	0.000	9.299
(U) PMC BLI# 468800 Transition Switch Module (TSM)	0.000	22.902	9.245	47.005	52.913	19.809	2.958	Continuing	Continuing

CLASSIFICATION:

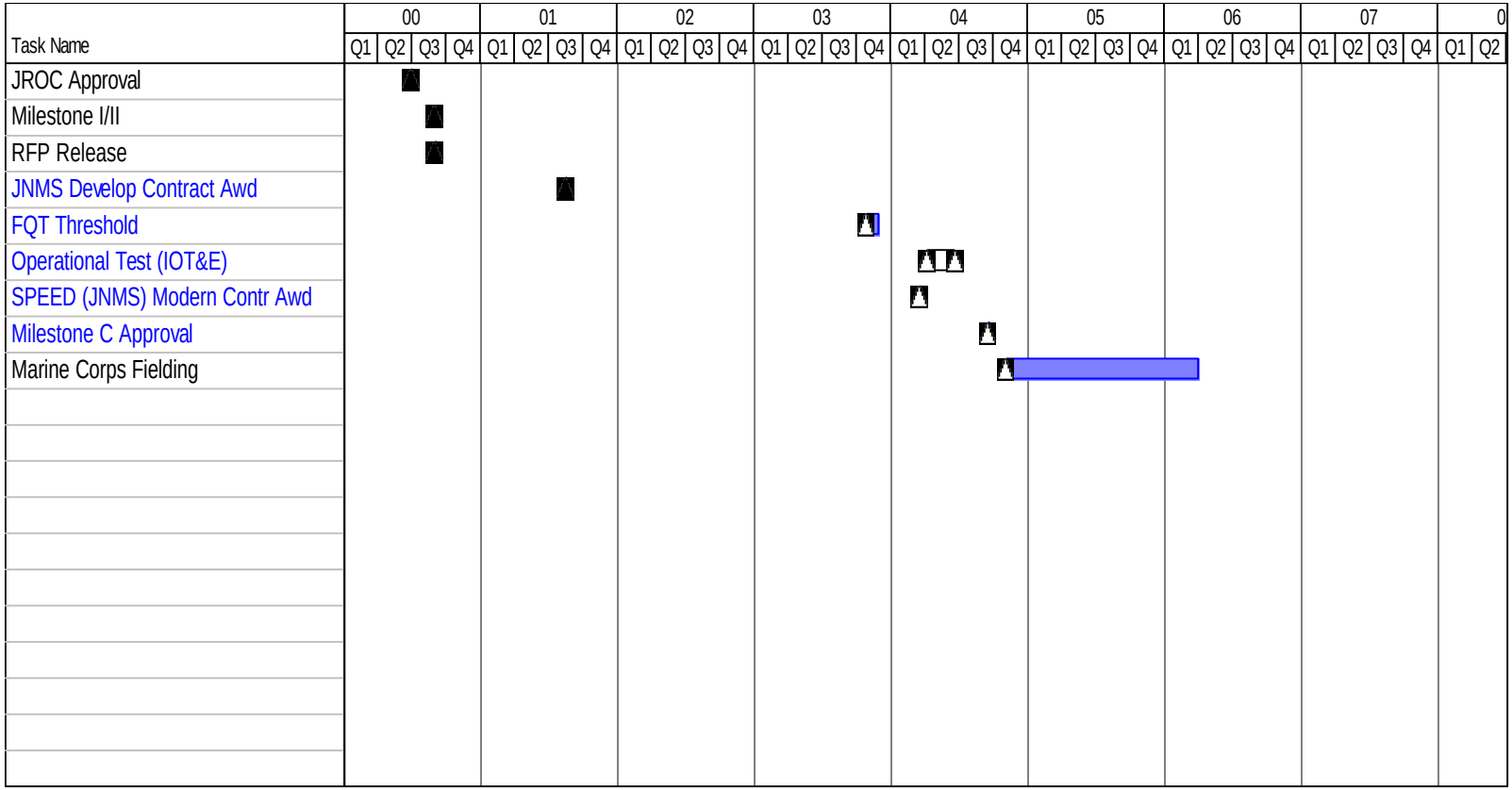
Exhibit R-4/4a Schedule Profile/Detail		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /BA 7 Operational Sys Dev**	PROGRAM ELEMENT **0206313M Marine Corps Communications Sys**	PROJECT NUMBER AND NAME **C2276 Communications Switching & Control Systems**

TSM SCHEDULE DETAIL	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Contract Award		1Q					
Engineering Develoment Model Delivery (Qty 6)		3Q					
Operational Test/Joint Interoperability Certification			1Q				
Milestone C		3Q					
Production Option Award			1Q				
Fielding Begins				1Q			
Initial Operational Capability					1Q		
Fielding Ends/Full Operational Capability							2Q

CLASSIFICATION:

Exhibit R-4/4a Schedule Profile/Detail		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /BA 7 Operational Sys Dev**	PROGRAM ELEMENT **0206313M Marine Corps Communications Sys**	PROJECT NUMBER AND NAME **C2276 Communications Switching & Control Systems**

JNMS



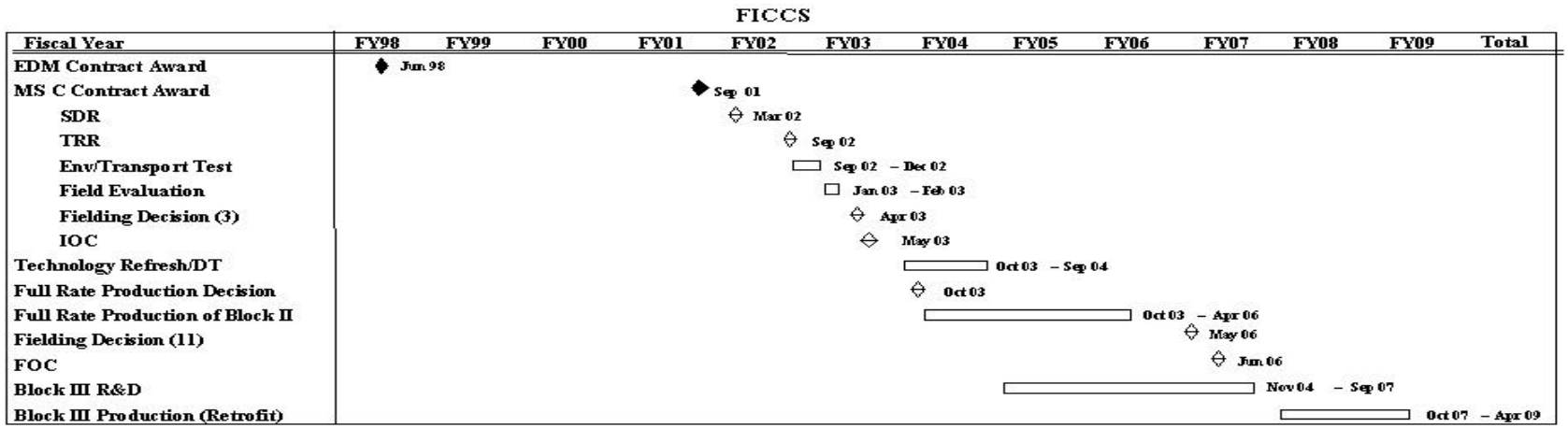
Program Funding Summary (APPN, BLI #, NOMEN)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl	Total Cost
(U) RDT&E,N	0.731	1.382	1.022	0.843	0.821	0.649	0.030	Continuing	Continuing
(U) PMC BLI# 463400 CommSwitch& Ctl Sys (JNMS)	0.000	5.790	5.274	1.293	1.050	0.650	0	0.000	14.057

CLASSIFICATION:

Exhibit R-4/4a Schedule Profile/Detail		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /BA 7 Operational Sys Dev**	PROGRAM ELEMENT **0206313M Marine Corps Communications Sys**	PROJECT NUMBER AND NAME **C2276 Communications Switching & Control Systems**

JNMS SCHEDULE DETAIL	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Software Pre-release .2							
Functional (Software) Qualification Test (FQT)	4Q						
Initial Operational Test & Evaluation (IOT&E)		2Q					
Milestone C Approval (PEO C3T)		3Q					
USMC Fielding		4Q					

CLASSIFICATION:		
Exhibit R-4/4a Schedule Profile/Detail		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /BA 7 Operational Sys Dev**	PROGRAM ELEMENT **0206313M Marine Corps Communications Sys**	PROJECT NUMBER AND NAME **C2276 Communications Switching & Control Systems**



Program Funding Summary	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl	Total Cost
(APPN, BLI #, NOMEN)									
(U) RDT&E,N	0.000	4.096	1.133	1.024	1.064	1.583	1.859	0.000	10.759
(U) PMC BLI# 463400 CommSwitch& Ctl Sys - FICCS	0.000	9.527	11.288	17.102	1.884	0.768	0.853	0.000	41.422

CLASSIFICATION:

Exhibit R-4/4a Schedule Profile/Detail		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /BA 7 Operational Sys Dev**	PROGRAM ELEMENT **0206313M Marine Corps Communications Sys**	PROJECT NUMBER AND NAME **C2276 Communications Switching & Control Systems**

FICCS SCHEDULE DETAIL	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
System Design Review							
Test Readiness Review							
Environmental/Transportation Testing	1Q						
Field Evaluation	2Q						
Fielding Decision	3Q						
Initial Operational Capability	3Q						
Technology Refresh (Block II) / Develoment and Test		1Q-4Q					
Full Rate Production Decision - Block II		1Q					
Full Rate Production of Block II		1Q---------	----------	----------3Q			
Fielding Decision - Block II				3Q			
FOC				3Q			
Block III R&D			1Q 05------	----------	4Q 07		
Block III Production (Retrofit)					1Q----------	----------	----------3Q

EXHIBIT R-2a, RDT&E Project Justification				DATE: February 2004					
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /BA-7 Operational Sys Dev**	PROGRAM ELEMENT NUMBER AND NAME **0206313M Marine Corps Communications Systems**				PROJECT NUMBER AND NAME **C2277 Systems Engineering & Integration**				
COST ($ in Millions)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	**8.918**	**8.762**	**7.960**	**9.567**	**8.744**	**9.030**	**9.204**	**Cont**	**Cont**
RDT&E Articles Qty									

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

(U) This project provides funds for engineering, test, and evaluation activity, which ensures that the systems being developed within the Program Element (PE) employ consistent standards for interoperability and, to the maximum extent feasible, use hardware, and software which is uniform across programs.

1. 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 MAGFT C4I Systems; MAGTF C4I SE&I also funds USMC participation in joint planning, technical standards development and joint exercise participation
2. Global Broadcast Service (GBS) Terminal – The 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 Morale Welfare Recreation (MWR) programming to deployed or garrison forces via small user platforms.
3. 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.
4. 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.
5. 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).
6. 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.
7. Balloon 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 commerical 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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.600**	**1.188**	**1.192**
RDT&E Articles Qty			

JWID: Participation in JWID, a JCS mandated program, to demonstrate new C4I interoperability concepts. It also supports management and planning of future JWID exercises.

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2004
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /BA-7 Operational Sys Dev**	PROGRAM ELEMENT NUMBER AND NAME **0206313M Marine Corps Communications Systems**	PROJECT NUMBER AND NAME **C2277 Systems Engineering & Integration**

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.927**	**1.712**	**1.778**
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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**4.517**	**4.242**	**3.377**
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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.382**	**1.620**	**1.613**
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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**1.333**	**0.000**	**0.000**
RDT&E Articles Qty			

Ballon Upgrade: Active testing and utilization of Aerostat Ballon to test concepts for USMC connectivity to USN Battle Groups.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.172**	**0.000**	**0.000**
RDT&E Articles Qty			

GBS: Support and Management for Confidence/User Evaluation.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.987**	**0.000**	**0.000**
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 $	**8.918**	**8.762**	**7.960**

EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2004	
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:

	FY2003	FY2004	FY2005
(U) FY 2004 President's Budget:	**10.736**	**8.907**	**7.991**
(U) Adjustments from the President's Budget:			
(U) Congressional Program Reductions			
(U) Congressional Rescissions			
(U) Congressional Increases			
(U) Reprogrammings	-1.635		
(U) SBIR/STTR Transfer	-0.183		
(U) Minor Affordability Adjustment		-0.145	-0.031
(U) FY 2005 NAVCOMPT Budget:	**8.918**	**8.762**	**7.960**

CHANGE SUMMARY EXPLANATION:
(U) Funding: See Above.
(U) Schedule: Not Applicable.
(U) Technical: Not Applicable.

(U) C. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl	Total Cost
PMC BLI 463000 CCR	30.720	61.062	61.989	70.980	87.812	88.869	103.734	Cont	Cont
PMC BLI 436600 RADIO SYSTEMS	49.231	23.658	14.476	16.351	10.694	26.827	10.340	Cont	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 - Naval Service Warfare Center/Command 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 logistics support, engineering, analytical, acquisition and program management for C4I programs in the areas of systems architectures, configuration management, interoprability and integration.

Exhibit R-3 Cost Analysis						DATE: February 2004						
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /BA 7 Operational Sys Dev**		PROGRAM ELEMENT **0206313M Marine Corps Communication Systems**				PROJECT NUMBER AND NAME **C2277 Systems Engineering & Integration**						
Cost Categories (Tailor to WBS, or Sys/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
JWID	MPR	JPO Ft Monmouth NJ	1.377	0.600	12/02	0.640	12/03	0.680	12/04	Cont.	Cont.	
JWID	WR	MCSC Quantico, VA	0.073	0.000		0.022	10/03	0.029	10/04	Cont.	Cont.	
BALLOON UPGRADE	MIPR	NSWC Crane IN	1.082	1.333	07/03						2.415	
Subtotal Product Dev			**2.532**	**1.933**		**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 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	1.176			0.526	10/03	0.483	10/04	Cont.	Cont.	
MAGTF SEI&C	MIPR	CECOM Ft Monmouth NJ	0.665	0.673	01/03					Cont.	Cont.	
MAGTF SEI&C	C/FFP	NGIT, Stafford VA	0.610	0.857	10/02	1.736	10/03	1.449	10/04		4.652	
MAGTF SEI&C	WR	MCSC, Quantico, VA	0.508	0.110	10/02	0.144	10/03	0.123	10/04	Cont.	Cont.	
MAGTF SEI&C	C/FFP	OSEC Stafford VA	0.252							0.000	0.252	
MAGTF SEI&C	WR	NSWC Crane IN	0.228	0.158	10/02					0.000	0.386	0.322
JCIET	RCP	MCSC, Quantico, VA		0.369	01/03							
JCIET	WR	MCSC, Quantico, VA	0.508	0.020	10/02							
JCIET	WR	NSWC Crane IN	0.228	0.400	10/02							
JCIET	WR	MCTSSA, Cp Pndltn, CA	0.120	0.058	04/03							
JCIET	RCP	MCTSSA, Cp Pndltn, CA		0.125	09/03							
JCIET	WR	MCSFB		0.015	09/03							
MAGTF SEI&C (JDEP)	WR	NSWC Dahlgren, VA	0.068	0.083	01/03	0.120	01/04	0.129	01/05	Cont.	Cont.	
MAGTF SEI&C (JDEP)	T&M	SENSIS Syracuse NY	0.547	0.046	05/03	1.164	05/04	1.089	05/05	Cont.	Cont.	
MAGTF SEI&C (JDEP)	MPR	DISA	0.007	0.010	02/03	0.010	02/04	0.012	02/05	Cont.	Cont.	
MAGTF SEI&C (JDEP)	WR	MCTSSA, Cp Pndltn, CA	0.120	0.243	04/03	0.326	04/04	0.380	04/05	Cont.	Cont.	
CCR	Various	Various	0.395	0.240	12/02					Cont.	Cont.	
CCR	MPR	GSA	0.802	0.411	03/03					Cont.	Cont.	
CCR	RCP	MCSC, Quantico, VA	0.037	0.037	03/03					Cont.	Cont.	
Subtotal Support			**6.271**	**3.855**		**4.026**		**3.665**		Cont	Cont	
Remarks:												
Cost Categories (Tailor to WBS, or Sys/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
MAGTF SEI&C	C/FFP	NGIT, Stafford VA		1.552	10/02	2.126	10/03	1.606	10/04	Cont.	Cont.	
JINTACCS	C/FFP	NGIT, Reston		0.909	10/02	1.507	10/03	1.570	10/04	Cont.	Cont.	
JINTACCS	WR	MCTSSA, Cp Pndltn, CA	0.364	0.018	10/02	0.205	10/03	0.208	10/04	Cont.	Cont.	
GBS	WR	MCTSSA, Cp Pndltn, CA	0.441	0.172	08/03					0.000	0.613	0.440
CCR	RCP	MCSC, Quantico, VA	2.065	0.299	02/03					Cont.	Cont.	
Subtotal T&E			**2.870**	**2.950**		**3.838**		**3.384**		**Cont.**	**Cont.**	
Remarks:												
Cost Categories (Tailor to WBS, or Sys/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
MAGTF SEI&C	C/FFP	NGIT, Stafford VA		0.180	10/02	0.236	10/03	0.202	10/04	Cont.	Cont.	
Subtotal Management				**0.180**		**0.236**		**0.202**		**Cont.**	**Cont.**	
Remarks:												
Total Cost				**8.918**		**8.762**		**7.960**		**Cont.**	**Cont.**	

EXHIBIT R-2a, RDT&E Project Justification						DATE: February 2004			
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 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	**23.238**	**23.338**	**22.765**	**6.429**	**11.075**	**10.537**	**5.798**	**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, rotary wing and fixed wing aircraft. CLAWS shall provide a rapidly deployable, mobile, high firepower, all-weather, standoff air defense system to defend Marine Expeditionary Forces and Naval Forces from attack by cruise missiles, aircraft and UAVs. It shall complement existing Short Range Air Defense (SHORAD) capabilities and shall interface with current and proposed Marine Air Command and Control Systems, 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.The AN/MPQ-62 Marine Requirements Oversight Council (MROC) Phase Out decision was approved in Jan 03, and phase out will begin in 4th Quarter FY03. 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 program provides the LAAD Battalions with the technologies/equipment required to maintain a Short Range Air Defense (SHORAD) capability in support of the Marine Air Ground Task Force (MAGTF), and provides lifecycle sustainment support, training, and integration for current/future LAAD specific equipment which includes air defense missiles, PMS, and CLAWS. The LAAD Sustainment Program supports the Stinger and AMRAAM based weapon systems by managing five separate areas: Expeditionary Air Defense Systems (EADS) hardware and software, Trainers and Simulators, Missiles, Ground Support Equipment (GSE), and targets.

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 (UAV's) 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 cuing 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.

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2004
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**

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.

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 AAAVs, 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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.211**	**0.000**	**0.000**
RDT&E Articles Qty			

CWAR: Developmental test and evaluation.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.600**	**0.000**	**0.000**
RDT&E Articles Qty			

CID: Program management support.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.374**	**0.000**	**0.000**
RDT&E Articles Qty			

CID: Requirements development.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.406**	**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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.999**	**0.000**	**0.000**
RDT&E Articles Qty			

SHORT/MEDIUM RANGE AIR DEFENSE RADAR: Developmental test and evaluation/risk reduction.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.150**	**0.000**	**0.000**
RDT&E Articles Qty			

SHORT/MEDIUM RANGE AIR DEFENSE RADAR: Development of Engineer Design Model.

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2004
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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**4.444**	**0.000**	**0.000**
RDT&E Articles Qty			

CTN: Development of Engineer Design Model.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**2.862**	**4.010**	**4.894**
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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**3.432**	**1.194**	**7.996**
RDT&E Articles Qty			

CLAWS: Developmental Testing (DT).

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**7.622**	**0.000**
RDT&E Articles Qty			

CLAWS: Operational Testing (OT).

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**3.282**	**6.199**	**5.497**
RDT&E Articles Qty			

CLAWS: Program management support.

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2004
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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.633**	**0.000**	**0.000**
RDT&E Articles Qty			

MRRS: Developmental test and evaluation/risk reduction.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.993**	**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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.198**	**0.000**	**0.000**
RDT&E Articles Qty			

MRRS: Study on the realiability of the fourth mission area - counter battery.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.917**	**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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.022**	**0.300**	**0.684**
RDT&E Articles Qty			

LAAD SUSTAINMENT: Development of replacement for Remote Terminal Unit (RTU).

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.149**	**0.000**	**0.000**
RDT&E Articles Qty			

LAAD SUSTAINMENT: Upgrades to EADS 7.4 software.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.048**	**0.000**	**0.000**
RDT&E Articles Qty			

LAAD SUSTAINMENT: Hazards of Electromagnetic Radiation to Ordnance (HERO) testing.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.828**	**1.000**
RDT&E Articles Qty			

LAAD SUSTAINMENT: Development of EADS 8.0.x - future upgrades to EADS software running on replacement RTU.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.100**	**0.100**
RDT&E Articles Qty			

LAAD SUSTAINMENT: Address obsolescence issues with Stinger Ground Support Equipment as indicated by Readiness Prediction Study.

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2004
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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.450**	**0.000**
RDT&E Articles Qty			

LAAD SUSTAINMENT: Development of Singer missile training ststem.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.200**	**0.200**
RDT&E Articles Qty			

LAAD SUSTAINMENT: Integration of High Pressure Pure Air Generator (HiPPAG) into Avenger Weapon System.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.030**	**0.029**	**0.017**
RDT&E Articles Qty			

LAAD SUSTAINMENT: Program Management Support.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.095**	**0.000**	**0.000**
RDT&E Articles Qty			

LAAD SUSTAINMENT: Stinger Missile Shelf Life Study.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**1.039**	**0.987**
RDT&E Articles Qty			

MCTIS: Program management support.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.225**	**0.300**
RDT&E Articles Qty			

MCTIS: Engineer Design Model.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.150**	**0.150**
RDT&E Articles Qty			

MCTIS: Risk reduction.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.000**	**0.250**
RDT&E Articles Qty			

MCTIS: Support software development.

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2004
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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.462**	**0.000**
RDT&E Articles Qty			

PEDESTAL MOUNTED STINGER: Test and evaluation/risk reduction of FLIR for Avenger.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.030**	**0.030**
RDT&E Articles Qty			

PEDESTAL MOUNTED STINGER: Engineering support for follow-on initiatives.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.000**	**0.160**
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 $	**23.238**	**23.338**	**22.765**

(U) PROJECT CHANGE SUMMARY:

	FY2003	FY2004	FY2005
(U) FY 2004 President's Budget:	**28.274**	**23.428**	**9.596**
(U) Adjustments from the President's Budget:			
(U) Congressional Program Reductions			
(U) Congressional Rescissions			
(U) Congressional Increases			
(U) Reprogrammings	-2.416	0.188	13.568
(U) SBIR/STTR Transfer	-0.494		
(U) Minor Affordability Adjustment	-2.126	-0.278	-0.399
(U) FY 2005 Presidents Budget:	**23.238**	**23.338**	**22.765**

CHANGE SUMMARY EXPLANATION:

(U) Funding: See Above.

(U) Schedule: Not Applicable

(U) Technical: Not Applicable.

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2004
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:

Line Item No. & Name	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl	Total Cost
(U) PMC LINE BLI 300600 LAAD SUSTAINMT	0.065	1.981	10.314	12.083	14.642	6.011	13.519	Continuing	Continuing
(U) PMC LINE BLI 462000 CWAR (EADS)	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0	1
(U) PMC LINE BLI 464000 CTN	0.000	0.000	0.000	22.477	34.840	43.993	68.803	Continuing	Continuing
(U) PMC LINE BLI 464000 MCTIDS (CID)	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	4.412	26.661	28.145	19.737	3.618	Continuing	Continuing
(U) PMC LINE BLI 305000 CLAWS MISSILES	0.000	0.000	0.000	22.611	19.251	49.209	24.410	Continuing	Continuing
(U) PMC LINE BLI 464000 SH/MED RANGE AIR	0.707	0.000	0.000	0.000	0.000	0.000	0.000	0	0.976
(U) PMC LINE BLI 464200 SH/MED RANGE AIR	0.000	1.569	1.421	0.526	0.436	0.443	0.448	Continuing	Continuing
(U) PMC LINE BLI 464200 MRRS	0.000	0.000	0.000	2.058	33.046	45.654	46.900	Continuing	Continuing
(U) PMC LINE BLI 301300 PMS	1.648	0.811	10.004	6.470	9.520	3.463	8.671	Continuing	Continuing

(U) Related RDT&E:

PE 0603216C (Ballistic Missile Defense Organization, Theater Missile Defense)

(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: CLAWS will integrate government furnished equipment (GFE), non-developmental items (NDI) and new technology to develop a surfaced launched Anti-Air launcher. CLAWS will utilize the AMRAAM (current inventory DoD missile), existing High Mobility Multi-purpose Wheeled Vehicle (HMMWV) and contractor developed missile launch platform.

(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/MPQ-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. The AN/MPQ-62 Marine Requirements Oversight Council (MROC) Phase Out decision was approved in Jan 03, and phase out will begin in the 4th Qtr of

(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 repair, sustain, or replace LAAD systems experiencing readiness degredation due to obsolescence. Examples include the replacement of RemoteTerminal Units, shelf life extensions to USMC Stinger Missiles, upgrading trainers to tactical configuration, upgradeing the 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.

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2004
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) 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 and safe, and to 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 is 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:
FY03 Raytheon,Tewkbury MA - Product development and developmental test -Nov 02
FY03 MCSC, Quantico VA - CEOSS Omnibus Contract program support - Dec 02
FY04 Raytheon, Tewsbury, MA. Product development and developmental test. Jan 04
FY05 Raytheon, Tewsbury, MA. Product development and developmental test. Jan 04

MCTIS:
Anteon Corporation, Arlington, VA. Engineering and Technical services. Jan 04

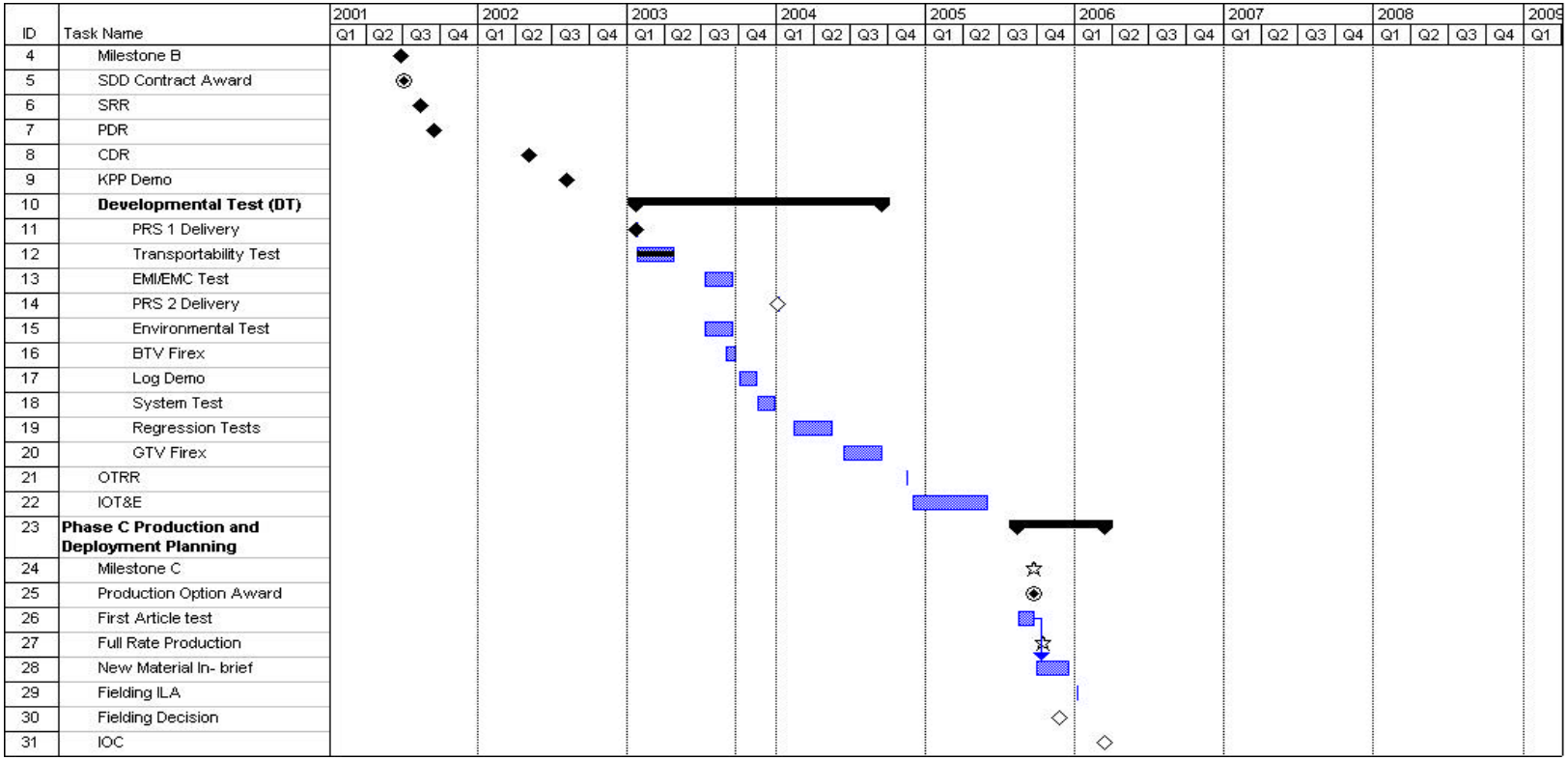
LAAD SUSTAINMENT
FY05 Raytheon, Tewksbury, MA Product development. Jan 05

Exhibit R-3 Cost Analysis					DATE: February 2004							
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**					
Cost Categories (Tailor to WBS, or Sys/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
CWAR	MIPR	Redstone Arsenal, AL	0.000	0.211	01/03					Cont.	Cont.	
S/M Range Air Defense Rdr	MIPR	Redstone Arsenal, AL	0.100	0.925	03/03					0.000	1.025	0.925
CTN	RCP	Lockheed, Syracuse NY	0.699	0.140	12/03					Cont.	Cont.	
CTN	WR	NSWC, Crane, IN	2.910	2.517	06/03					Cont.	Cont.	
CTN	RCP	Raytheon, St Ptrsbrg, FL	0.873	1.096	06/03					Cont.	Cont.	
CTN	RCP	NAWC, PaxRiver, MD	0.000	2.000	03/03					0.000	2.000	2.000
CTN	WR	SPAWAR (EMA, Inc.)	0.000	0.020	04/03					0.000	0.020	0.020
CTN	RCP	Solipsys, Laurel, MD	1.081	1.000	01/03					Cont.	Cont.	
CID/MCTIS	WR	NSWC, Crane, IN	0.000	0.176	11/03			0.213	01/05	Cont.	Cont.	
CLAWS	RCP	Raytheon, Bedford, MA	9.609	2.700	01/03	3.805	01/04	3.789	01/05	Cont.	Cont.	
CLAWS	MIPR	Pt Mugu, Ca	0.000	0.030	12/02	0.010	01/04	0.121	01/05	Cont.	Cont.	
MRRS	MIPR	Redstone Arsenal, AL	0.000	0.633	03/03					Cont.	Cont.	
MRRS	RCP	MCSC, Quantico, VA	0.000	0.250	03/03					0.000	0.250	0.250
LAAD SUSTAINMENT	WR	NSWC, Crane, IN	0.000	0.000		0.379	01/04	0.750	01/05	Cont.	Cont.	
LAAD SUSTAINMENT	RCP	MCSC, Quantico, VA	0.000	0.000		0.200	01/04	0.200	01/05	Cont.	Cont.	
LAAD SUSTAINMENT	RCP	MCSC, Quantico, VA	0.000	0.000		0.450	01/04			0.000	0.450	0.450
LAAD SUSTAINMENT	RCP	Raytheon, Tewksbury, MA	0.000	0.219	03/03	0.828	01/03	1.000	01/05	Cont.	Cont.	
PMS	WR	NSWC, Crane, IN				0.402	01/04	0.080	01/05	Cont.	Cont.	
Subtotal Product Dev			**15.272**	**11.917**		**6.074**		**6.153**		**Cont.**	**Cont.**	
Remarks:												
Cost Categories (Tailor to WBS, or Sys/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY03 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	0.090	0.060	12/02					Cont.	Cont.	
SH/Med Rng Air Def Radar	RCP	Northrup Grumman,	0.000	0.274	01/03					Cont.	Cont.	
CIDMCTIS	RCP	MCSC, Quantico, VA	0.576	0.371	06/03	0.127	01/04	0.374	01/05	0.000	1.448	0.652
CIDMCTIS	WR	NSWC, Crane, IN	0.150	0.233	02/03	0.225	10/03	0.225	01/05	0.000	0.833	
CIDMCTIS	WR	MCSC, Quantico, VA	0.000	0.030	10/03	0.030	01/04	0.030	01/05	Cont.	Cont.	
CTN	WR	MCSC, Quantico, VA	0.115	0.040	10/02					Cont.	Cont.	
CTN	MIPR	Defense Cont. Cmd	0.000	0.150	05/03					0.000	0.150	
CLAWS	WR	NSWC, Crane, IN	0.170	0.250	12/03			0.987	01/05	Cont.	Cont.	
CLAWS	WR	MCSC, Quantico, Va	0.180	0.200	01/03	0.358	12/03	1.205	01/05	Cont.	Cont.	
CLAWS	WR	MCCDC, Quantico, VA	0.000	0.200	01/03			0.900	01/05	Cont.	Cont.	
CLAWS		MCOTEA	0.000			0.666	01/04			Cont.	Cont.	
CLAWS	MIPR	JSPO, Eglin, AFB, FL	0.000			0.504	12/03			Cont.	Cont.	
CLAWS	WR	MCTSSA, Cp Pndltn,CA	0.000			0.571	01/04			Cont.	Cont.	

Exhibit R-3 Cost Analysis					DATE: February 2004							
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**					
LAAD SUSTAINMENT	WR	MCSC, Quantico, VA	0.000	0.030	12/02	0.050	12/03	0.051	12/04	Cont.	Cont.	
LAAD SUSTAINMENT	MIPR	Redstone Arsenal, AL	0.000	0.095	12/03					0.000	0.095	
MRRS	MIPR	Jnt Spectrum Ctr, Annapolis	0.000	0.202	04/03					0.000	0.202	
MRRS	RCP	MCSC, Quantico, VA	0.000	0.336	03/03					Cont.	Cont.	
MRRS	MIPR	ONR Arlington, VA	0.000	0.198	08/03					Cont.	Cont.	
MRRS	MIPR	GSA, Bremerton, WA	0.000	0.040	04/03					0.000	0.040	
MRRS	WR	NSWC, Crane IN	0.000	0.165	12/02					Cont.	Cont.	
Subtotal Support			**1.281**	**2.874**		**2.531**		**3.772**		**Cont.**	**Cont.**	
Remarks:												
Cost Categories (Tailor to WBS, or Sys/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
CID/MCTIS	WR	CECOM, Ft Monmouth	0.000	0.000		0.532	01/04	0.600	01/05	Cont.	Cont.	
CTN	WR	MCTSSA, Cp Pndltn,CA	0.035	0.005	10/02					Cont.	Cont.	
CLAWS	WR	White Sands, NM	0.100	1.000	01/03	0.969	12/03	0.798	12/04	0.000	2.867	
CLAWS		MCOTEA	0.125	0.140	10/02	0.537	12/03	0.160	12/04	Cont.	Cont.	
CLAWS	MIPR	Aberdeen, Md	0.142	0.039	02/03	0.341	12/03	0.301	12/04	Cont.	Cont.	
CLAWS	RCP	Raytheon, Tewksbury, MA	0.000	2.803	03/03	2.171	12/03	1.600	12/04	Cont.	Cont.	
CLAWS	RCP	MCTSSA, Cp Pndltn,CA	0.000	0.024	03/03			0.315	12/04	Cont.	Cont.	
CLAWS	MIPR	JSPO, Eglin, AFB, FL	0.000	0.150	12/02	1.671	12/03	2.700	12/04	Cont.	Cont.	
CLAWS	MIPR	Redstone Arsenal, AL	0.000	0.590	09/03	1.222	12/03	1.733	12/04	Cont.	Cont.	
PMS	RCP	Boeing, Huntsville, AL				0.060	01/04	0.080	01/05	Cont.	Cont.	
Subtotal T&E			**0.402**	**4.751**		**7.503**		**8.287**		**Cont.**	**Cont.**	
Remarks:												
Cost Categories (Tailor to WBS, or Sys/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
CTN	RCP	MCSC (Mevatec)	0.000	0.027	03/03					Cont.	Cont.	
CTN	RCP	NGIT, Stafford, VA	0.868	0.732	06/03					Cont.	Cont.	
CIDMCTIS	RCP	Anteon, Stafford, VA	0.000	0.570	01/03	1.000	01/04	0.745	01/05	Cont.	Cont.	
MRRS	WR	MCSC, Quantico, VA	0.000	0.156	01/03					Cont.	Cont.	
MRRS	RCP	Anteon, Stafford, VA	0.000	0.761	01/03					Cont.	Cont.	
CLAWS	RCP	NGIT, Stafford, VA	1.579	1.200	09/02	1.656	11/03	1.700	12/04	Cont.	Cont.	
CLAWS	RCP	MCSC, Quantico	0.000	0.250	09/02	2.932	12/03	2.078	12/04	Cont.	Cont.	
CLAWS	WR	NSWC Crane, IN	0.000	0.000		0.756	12/03			Cont.	Cont.	
CLAWS	WR	Redstone Arsenal, AL	0.000	0.000		0.856	12/03			Cont.	Cont.	
PMS						0.030	12/03	0.030	12/04	Cont.	Cont.	
Subtotal Management			**2.447**	**3.696**		**7.230**		**4.553**		**Cont.**	**Cont.**	
Remarks:												
Total Costs				**23.238**		**23.338**		**22.765**		**Cont.**	**Cont.**	

Exhibit R-4/4a Project Schedule/Detail		DATE: February 2004
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



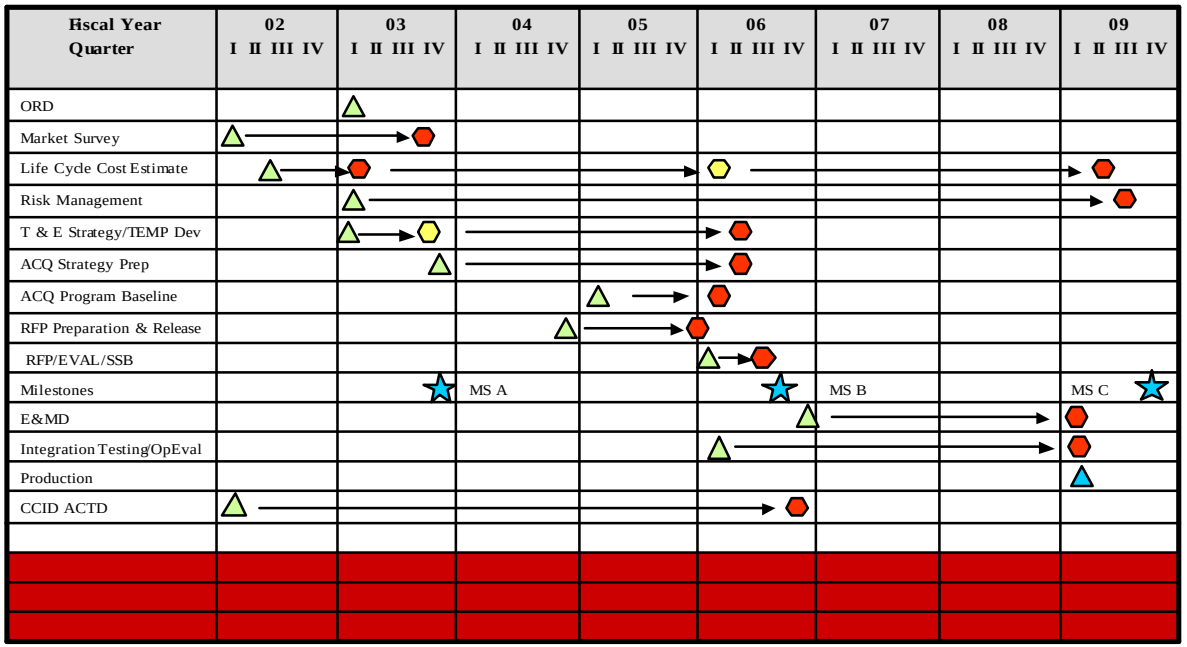
Program Funding Summary	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl	Total Cost
(APPN, BLI #, NOMEN)									
(U) RDT&E,N C2278	9.576	19.025	18.387	1.740	1.843	0.910	0.950	Continuing	Continuing
(U) PMC BLI# 489000 CLAWS	0.000	0.000	4.412	26.661	28.145	19.737	3.618	Contnuing	Continuing
(U) PMC BLI# 305000 CLAWS MISSILES	0.000	0.000	0.000	22.611	19.251	49.209	24.410	Continuing	Continuing

Exhibit R-4/4a Project Schedule/Detail		DATE: February 2004
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 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Development Testing	1Q						
Operational Testing		3Q					
Fielding Decision			3Q				
Initial Operational Capability				1Q			

Exhibit R-4/4a Project Schedule/Detail		DATE: February 2004
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /BA 7 Operational Sys Dev**	PROGRAM ELEMENT **0206313M Marine Corps Communication Sys**	PROJECT NUMBER AND NAME **C2278 Air Defense Weapons Systems**

MCTIS Program Schedule



Program Funding Summary (APPN, BLI #, NOMEN)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl	Total Cost
(U) R&D Air Def Weaps Sys (Combat ID) C2278	1.380	0.000	0.000	0.000	0.000	0.000	0.000	Contnuing	Continuing
(U) RDT&E,N ADWS (MCTIDS) C2278	0.000	1.914	2.187	2.829	6.687	7.159	2.340	Continuing	Continuing
(U) PMC BLI# 464000 Air Ops C2 Systems (MCTIDS)	0.000	0.000	0.000	0.000	0.000	0.500	15.300	Contnuing	Continuing

Exhibit R-4/4a Project Schedule/Detail		DATE: February 2004
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 SCHEDULE DETAIL	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Milestone A	4Q						
Milestone B				4Q			
Integration Testing				1stQ			4Q

EXHIBIT R-2a, RDT&E Project Justification						DATE: February 2004			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /BA-7 Operational Sys Development**	PROGRAM ELEMENT NUMBER AND NAME **0206313M Marine Corps Communication Systems**					PROJECT NUMBER AND NAME **C2315 Training Devices/Simulators**			
COST ($ in Millions)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	**7.277**	**12.278**	**4.863**	**8.267**	**5.634**	**4.284**	**4.443**	**Cont**	**Cont**
RDT&E Articles Qty									

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

(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.

B. ACCOMPLISHMENTS/PLANNED PROGRAM:

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**3.137**	**0.595**	**0.000**
RDT&E Articles Qty			

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. Completed Version Release Milestone (VRM) 1.0 in FY03.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.350**	**0.000**	**0.000**
RDT&E Articles Qty			

DVTE: Transition DVTE S&T prototype developed by TECOM/NAVSEA for USMC acquisition - Map prototype design functions to requirements and evaluate system operational maturity.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.527**	**6.534**	**0.000**
RDT&E Articles Qty			

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 (HIF) and Master Control Station (MCS) subsystems; complete closed-loop development. Complete development and integration of hardware and software; complete garrison and shipboard versions; complete prototype.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**3.263**	**4.150**	**3.125**
RDT&E Articles Qty			

CACCTUS: Research Development Test and Evaluation (RDT&E) efforts. Upgrade and enhance one site of Command Arms Staff Trainer (CAST) software.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2004
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /BA-7 Operational Sys Development**	PROGRAM ELEMENT NUMBER AND NAME **0206313M Marine Corps Communication Systems**		PROJECT NUMBER AND NAME **C2315 Training Devices/Simulators**

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.538**	**0.996**
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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.461**	**0.742**
RDT&E Articles Qty			

SESAMS: Develop and integrate SESAMS capability into MILES 2000 to create compatibility between two systems.

(U) Total $	7.277	12.278	4.863

(U) PROJECT CHANGE SUMMARY:

	FY2003	**FY2004**	**FY2005**
(U) FY 2004 President's Budget:	**8.580**	**12.423**	**8.317**
(U) Adjustments from the President's Budget:			
(U) Congressional/OSD Program Reductions			-3.432
(U) Congressional Rescissions			
(U) Congressional Increases			
(U) Reprogrammings	-1.151		
(U) SBIR/STTR Transfer	-0.177		
(U) Minor Affordability Adjustment	0.025	-0.145	-0.022
(U) FY 2005 President's Budget:	**7.277**	**12.278**	**4.863**

(U) Funding: Adjustments above include JSIMS $944K and CACCTUS $207K reprogrammings as Cost of War bill payers.
(U) Funding: Changes in FY05 are due to cancellation of CLASS program and $22K affordability adjustment.
(U) Schedule: Not Applicable.
(U) Technical: Not Applicable.

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2004
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /BA-7 Operational Sys Development**	PROGRAM ELEMENT NUMBER AND NAME **0206313M Marine Corps Communication Systems**	PROJECT NUMBER AND NAME **C2315 Training Devices/Simulators**

(U) C. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl	Total Cost
(U) PMC, BLI# 653200 Trng Dev/Sims	18.187	63.518	24.214	18.766	13.635	13.598	10.998	Continuing	Continuing

(U) Related RDT&E: Not Applicable

(U) D. ACQUISITION STRATEGY:

(U) JSIMS - Development efforts terminated on 30 Sep 03. FY04 will focus on orderly closeout of the program and inventory.
(U) CLASS - Awarded R & D to Aegis Technology, July 02 (CPFF). Program Cancelled in FY04 and out.
(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:

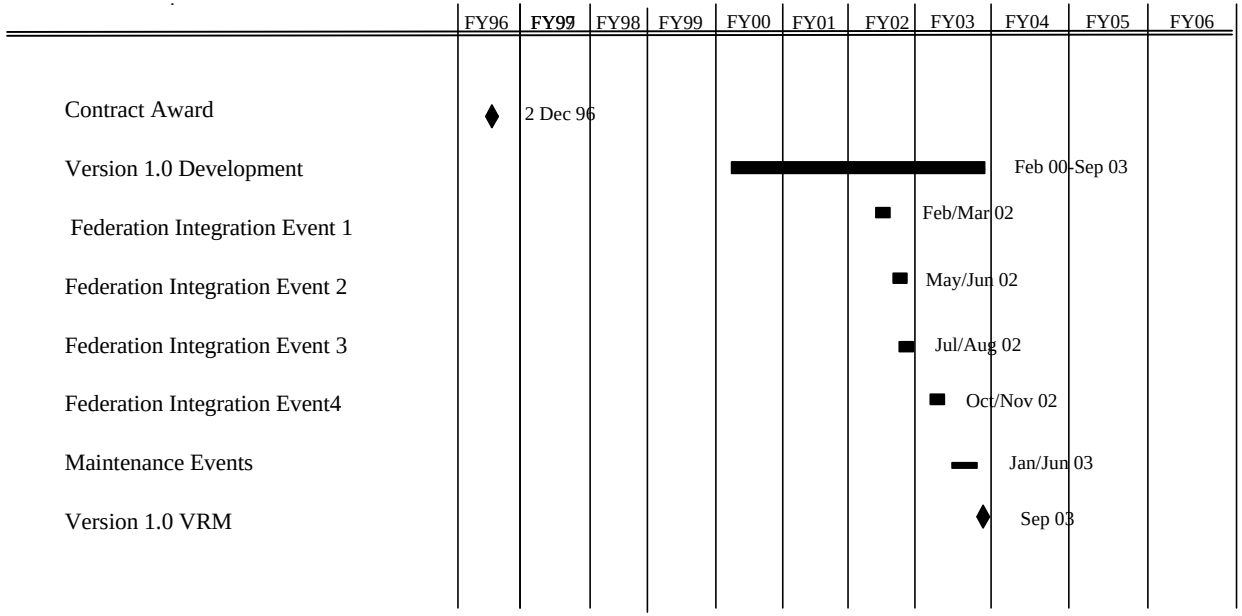
Not Applicable for any programs with Training Devices/Simulators, C2315.

Exhibit R-3 Cost Analysis					DATE: February 2004							
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**					
Cost Categories (Tailor to WBS, or Sys/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
Software Dev - JSIMS	RCP	SPAWAR, San Diego, CA	13.495	1.830	12/02	0.000		0.000		0.000	15.325	15.325
Software Dev - JSIMS	MIPR	CECOM, FT Monmouth, NJ	0.000	0.111	11/02	0.000		0.000		0.000	0.111	0.111
Software Dev - JSIMS	WR	SPAWAR, San Diego, CA	3.134	0.478	11/02	0.595	12/03	0.000		0.000	4.207	4.207
Product Dev - MILES	RCP	SAAB & RUAG, Sweden	0.000	0.000		0.233	01/04	0.402	12/04	Cont.	Cont.	
Product Dev - SESAMS	RCP	SIMUNITIONS, Sweden	0.000	0.000		0.187	01/04	0.296	12/04	Cont.	Cont.	
Software Dev- CACCTUS	RCP	MCSC, Quantico, VA	1.814	0.000		0.649	12/03	0.000		0.000	2.463	2.463
Software Dev- CACCTUS	TBD	MCSC, Quantico, VA	2.102	0.000		2.000	03/04	0.274	03/05	Cont.	Cont.	
Subtotal Product Dev			20.545	2.419		3.664		0.972		Cont.	Cont.	
Remarks:												
Cost Categories (Tailor to WBS, or Sys/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
Software Dev - JSIMS	RCP	PM TRASYS, Orlando, FL	0.000	0.614	12/02	0.000		0.000		0.000	0.614	0.614
SW Dev - Miles	RCP	SAAB & RUAG, Sweden	0.000			0.233	01/04	0.402	12/04	Cont.	Cont.	
SW Dev - SEASAMS	RCP	SIMUNITIONS, Sweden	0.000			0.187	01/04	0.297	12/04	Cont.	Cont.	
SW Dev/Sys Design -CLASS	MIPR	PEO STRI, Orlando FL	0.000	0.327	03/03	5.764	03/04	0.000		0.000	6.091	6.091
Software Devm-CACCTUS	RCP	MTS, San Diego, CA	8.853			0.646	06/04	2.851	03/05	Cont.	Cont.	
SW Dev, CACCTUS	RCP	NAWC, Orlando, FL	0.000	1.400	03/03	0.000		0.000		0.000	1.400	1.400
SW Dev, CACCTUS	MIPR	PEO STRI, Orlando FL	0.000	1.379	03/03	0.000		0.000		0.000	1.379	1.379
SW Dev, DVTE	RCP	PM TRASYS, Orlando, FL	0.000	0.280	03/03	0.000		0.000		0.000	0.280	0.280
Software Development-CACCTU	RCP	TBD	0.000			0.855	03/04	0.000		0.000	0.855	0.855
Subtotal SW Dev Support			8.853	4.000		7.685		3.550		Cont.	Cont.	
Remarks:												
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
T & E - MILES	RCP	MCSC, Quantico, VA	0.000	0.000		0.051	01/04	0.142	12/04	Cont.	Cont.	
T & E - SESAMS	RCP	MCSC, Quantico, VA	0.000	0.000		0.069	01/04	0.111	12/04	Cont.	Cont.	
Dev Test & Eval -CACCTUS	MIPR	CECOM, FT Monmouth, NJ	3.294	0.000		0.000		0.000		0.000	3.294	3.294
Subtotal Dev T&E			3.294	0.000		0.120		0.253		Cont.	Cont.	
Remarks:												

Exhibit R-3 Cost Analysis					DATE: February 2004							
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**					
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
Govt Engineering Spt-JSIMS	WR	NAWC, Orlando, FL	0.000	0.104	10/02	0.000		0.000		0.000	0.104	0.104
Program Spt - MILES	WR	MCSC, Quantico, VA	0.000			0.021	12/03	0.048	12/04	Cont.	Cont.	
Program Spt - SESAMS	WR	MCSC, Quantico, VA	0.000			0.018	12/03	0.040	12/04	Cont.	Cont.	
Govt Engineering Spt -CLASS	WR	NAWC, Orlando, FL	0.300	0.200	10/02	0.470	10/03			0.000	0.970	1.000
Contractor SW Spt-CLASS	RCP	MCSC, Quantico, VA	0.365			0.300	10/03			0.000	0.665	0.665
Contractor Engineering Suppt	WR	NAWC, Orlando, FL	0.450			0.000		0.000		0.000	0.450	0.450
Govt Engineering Suppt	WR	NAWC, Orlando, FL	1.159			0.000		0.000		0.000	1.159	1.159
Program Management Suppt	WR	NAWC, Orlando, FL	0.456			0.000		0.000		0.000	0.456	0.456
PM Spt, CACCTUS	WR	NAWC, Orlando, FL	0.000	0.484	03/03	0.000		0.000		0.000	0.484	0.484
Program Management Suppt	RCP	MCSC, Quantico, VA	1.767			0.000		0.000		0.000	1.767	1.767
PM Spt, DVTE	WR	NAWC, Orlando, FL	0.000	0.070	03/03	0.000		0.000		0.000	0.070	0.070
Subtotal Management Spt			4.497	0.858		0.809		0.088		Cont.	Cont.	
Remarks:												
Total Cost				7.277		12.278		4.863		Cont.	Cont.	

Exhibit R-4/4a Schedule Profile/Detail		DATE: February 2004
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**

JSIMS PROGRAM SCHEDULE



Other Program Funding Summary

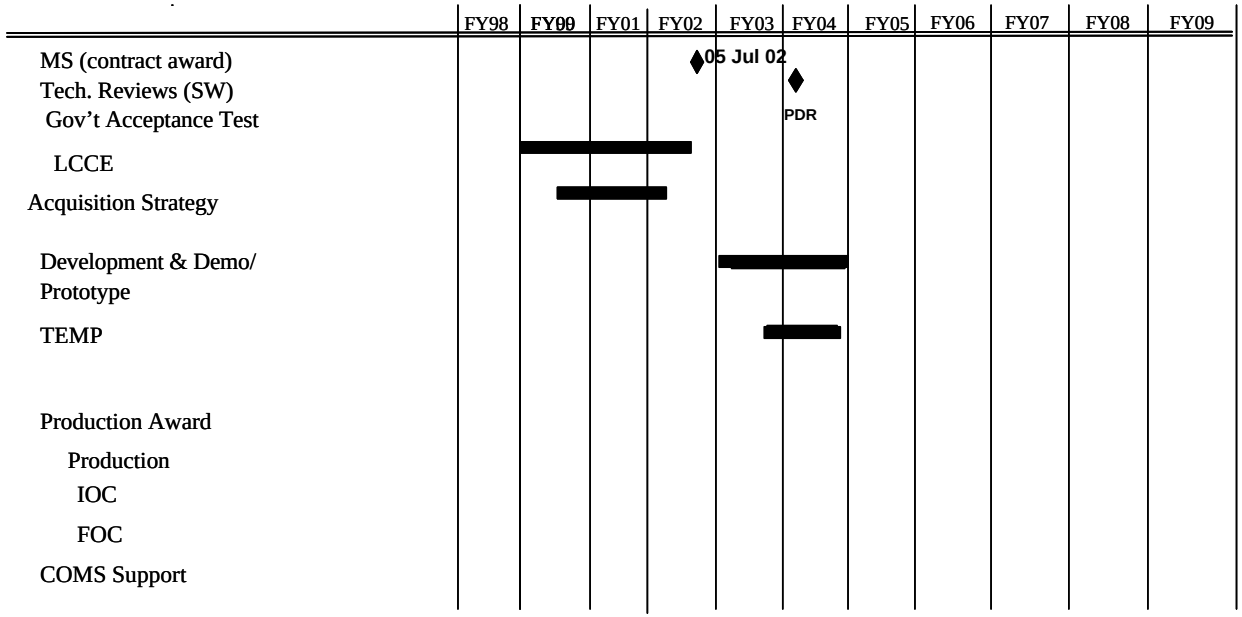
(APPN, BLI #, NOMEN)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl
(U) RDT&E,N (JSIMS)	3.137	0.595	0.000	0.000	0.000	0.000	0.000	3.732
(U) PMC, BLI# 653200 Trng Dev/Sims (JSIMS)	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.001

Exhibit R-4/4a Schedule Profile/Detail		DATE: February 2004
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**

JSIMS SCHEDULE DETAIL	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Version 1.0 Software Development	2Q						

Exhibit R-4/4a Schedule Profile/Detail		DATE: February 2004
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**

CLASS PROGRAM SCHEDULE



Other Program Funding Summary	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl
(APPN, BLI #, NOMEN)								
(U) RDT&E,N (CLASS)	0.527	6.534	0.000	0.000	0.000	0.000	0.000	7.061
(U) PMC, BLI# 653200 Trng Dev/Sims (CLASS)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Exhibit R-4/4a Schedule Profile/Detail			DATE: February 2004
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**	

CLASS SCHEDULE DETAIL	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Contract Award							
Preliminary Design Review (PDR)		1Q					
Critical Design Review (CDR)							
Development/Demonstration/Prototype							
Test & Evaluation							
Production Award							
Initial Operational Capability (IOC)							
Full Operational Capability (FOC)							

EXHIBIT R-2a, RDT&E Project Justification						DATE: February 2004			
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 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	**3.215**	**22.238**	**18.034**	**10.611**	**8.123**	**8.598**	**8.633**	**Cont**	**Cont**
RDT&E Articles Qty									

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

(U) The MAGTF Combat Service Support Element & Supporting Establishment (CSSE & SE) consists of mutually supporting Logistics Information Technology (IT) programs that support force deployment, planning, and execution; sustainment and distribution; and contribute to the Combatant Commander's Common Operating Picture (COP) to support rapid accurate decision making.

1. The ATLASS PIP program funds the improvement of the existing ATLASS 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 ATLASS PIP consolidates the total force intermediate and consumer level supply and maintenance information management functions into a single material management system. ATLASS PIP enhances ATLASS II+, retires existing mainframe legacy applications in use by the bases and stations, and improves logistic support to the operating forces. ATLASS 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. FY03 is the last year of execution for ATLASS PIP.

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 FY04. 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.

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 Enviornment (SDE), has moved from Project C2906, PE 0605013M, MC Information Technology in FY04 and beyond.

4. Common Computer Resources (CCR) Marine Common Hardware Suite (MCHS) - Centralizes and standardizes management and acquisition of all Tactical common computer hardware and infrastructure by adopting the Joint Defense Information Infrastructure (DII) Common Operating Environment (COE) with consolidated Integrated Logistics Support. Ensures the environment remains in synchronization with computer hardware technology hardware improvements. The mission supports the Commandant's Planning Guidance and the Marine Corps Master Plan. Funding for this program in FY 02 and FY03 is found under Project C2277 of this PE.

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.

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2004
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**

The ILC Analysis provided the foundation for logistics transformation within the Marine Corps and established a compliance response to Defense Reform Initiative Directive (DRID) 54, directing that logistics transformation be accomplished throughout the service components. Immediately following the guidance of DRID 54, the GCSS-Capstone Requirements Document (CRD) was approved by the JROC. The GCSS CRD requires an IOC in FY04 and FOC in FY06. Specific ILC objectives are desired by 2004. GCSS-MC is the IT solution to accomplish the transformation and GCSS objectives. GCSS-MC is an integrated set of capabilities. The capabilities will be implemented within a bottoms-up (programs of record) approach within a portfolio of systems. The portfolio of systems contributes to the primary capabilities of GCSS-MC. External portfolios will also contribute secondary to GCSS-MC capabilities through integration strategies. Primary capabilities are supply chain and combat service support oriented.

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.

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.

(U) B. ACCOMPLISHMENTS/PLANNED PROGRAM:

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.352**	**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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**2.274**	**0.000**	**0.000**
RDT&E Articles Qty			

ATLASS PIP: Incremental software development (EAI/APIs) and conduct software testing of replacement COTS packages.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**1.173**	**0.701**
RDT&E Articles Qty			

CCR/MCHS: Environmental testing of CISC/RISC workstations.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.605**	**0.580**
RDT&E Articles Qty			

CCR/MCHS: Environmental testing of CISC/RISC servers.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.299**	**0.241**
RDT&E Articles Qty			

CCR/MCHS: Technology Insertion.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2004
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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.046**	**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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**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).

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2004
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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.755**	**0.700**
RDT&E Articles Qty			

GCSS/SDE: Design and development of SDE ILC/GCSS MC Information Exchange repository.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.455**	**0.409**
RDT&E Articles Qty			

GCSS/SDE: Data analysis and Cleansing of legacy data for successive implementation of GCSS MC COTS products.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**1.000**	**0.700**
RDT&E Articles Qty			

GCSS-MC Enabler/WarPortal: Preparation of development and test servers and sytems integration, demonstration and testing.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.900**	**0.300**
RDT&E Articles Qty			

GCSS-MC Enabler/WarPortal: Integration services for data center build out, Operational Tests and establishment of production operatons.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.100**	**0.000**
RDT&E Articles Qty			

GCSS-MC Enabler/WarPortal: Conference room pilots and functional testbeds for product configuration and development planning.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**3.000**	**0.000**
RDT&E Articles Qty			

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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**2.000**	**3.395**
RDT&E Articles Qty			

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 ATLASS II+.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**1.079**	**0.697**
RDT&E Articles Qty			

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.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2004
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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**2.746**	**1.502**
RDT&E Articles Qty			

GCSS-MC Supply Chain/LSM: Inventory Control and Warehouse Management - basic functions required to replace ATLASS II+.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**2.772**	**1.944**
RDT&E Articles Qty			

GCSS-MC Supply Chain/LSM: Basic Service Fulfillment Capability, which is the ability to manage user requests for CSS services.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.500**	**0.407**
RDT&E Articles Qty			

GCSS-MC Supply Chain/LSM: Data warehouse development to meet GCSS Requirements (CINC 129 from the GCSS CRD).

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.000**	**0.250**
RDT&E Articles Qty			

GCSS-MC Supply Chain/LSM: Logistics Forecasting/Planning Capability.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.000**	**0.120**
RDT&E Articles Qty			

GCSS/TFSMS: User requested enhancements.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.277**	**0.542**	**0.000**
RDT&E Articles Qty			

TC-AIMS II: Conduct operational test and evaluation of TC-AIMS II. Blocks per JTMO schecule. 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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**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.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2004
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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.266**	**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 $	**3.215**	**22.238**	**18.034**

(U) PROJECT CHANGE SUMMARY:	**FY 2003**	**FY 2004**	**FY 2005**
(U) FY 2004 President's Budget:	**4.376**	**23.488**	**18.094**
(U) Adjustments from the President's Budget:			
(U) Congressional Program Reductions			
(U) Congressional Rescissions			
(U) Congressional Increases			
(U) Reprogrammings	-1.062	-1.000	
(U) SBIR/STTR Transfer	-0.099		
(U) Minor Affordability Adjustments		-0.250	-0.060
(U) FY 2005 OSD Budget:	**3.215**	**22.238**	**18.034**

CHANGE SUMMARY EXPLANATION:

(U) Funding: See Above.

(U) Schedule: TC-AIMS II Schedule change is due to inadequate IOT&E results, during November and December 2001.

(U) Technical: Not Applicable.

(U) C. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl	Total Cost
PMC BLI 464100 TC-AIMS II	4.185	0.000	0.679	0.000	0.000	0.000	0.000	0.000	4.864
PMC BLI 463000 CCR	30.720	61.062	61.989	70.980	87.812	88.869	103.734	0.000	505.166
PMC BLI 461400 GCSS	0.000	8.017	8.557	4.152	0.916	0.629	0.213	Cont.	Cont

(U) Related RDT&E: Not Applicable.

(U) D. ACQUISITION STRATEGY:

ATLASS PIP: The current acquisition strategy is to stay with SSC Chesapeake, the developer for ATLASS II+ for development work.

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 specfic block. All of the block/modules will be individually tested (DT and OT), and fielded incrementally until the complete integration in 4th Qtr FY08.
Common Computer Resourses (CCR): To ensure computer hardware in the operating forces keeps pace with industry computer hardware technical improvements.

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2004
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**

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.

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, e.g., WebPortal, Joint Force Requirements Generator II (JFRG II), Common Logistics Command and Control System (CLC2S), 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 asses

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.

(U) E. MAJOR PERFORMERS:

ATLASS PIP

FY03 - Stanley Associates, EV software (COTS) development and testing.

TC-AIM II

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

FY03 - Stanley Associates, Provide technical and functional expertise to develop the functionality in the GCSS MC Expanded Validation Oracle 11i Environment

CCR/MCHS

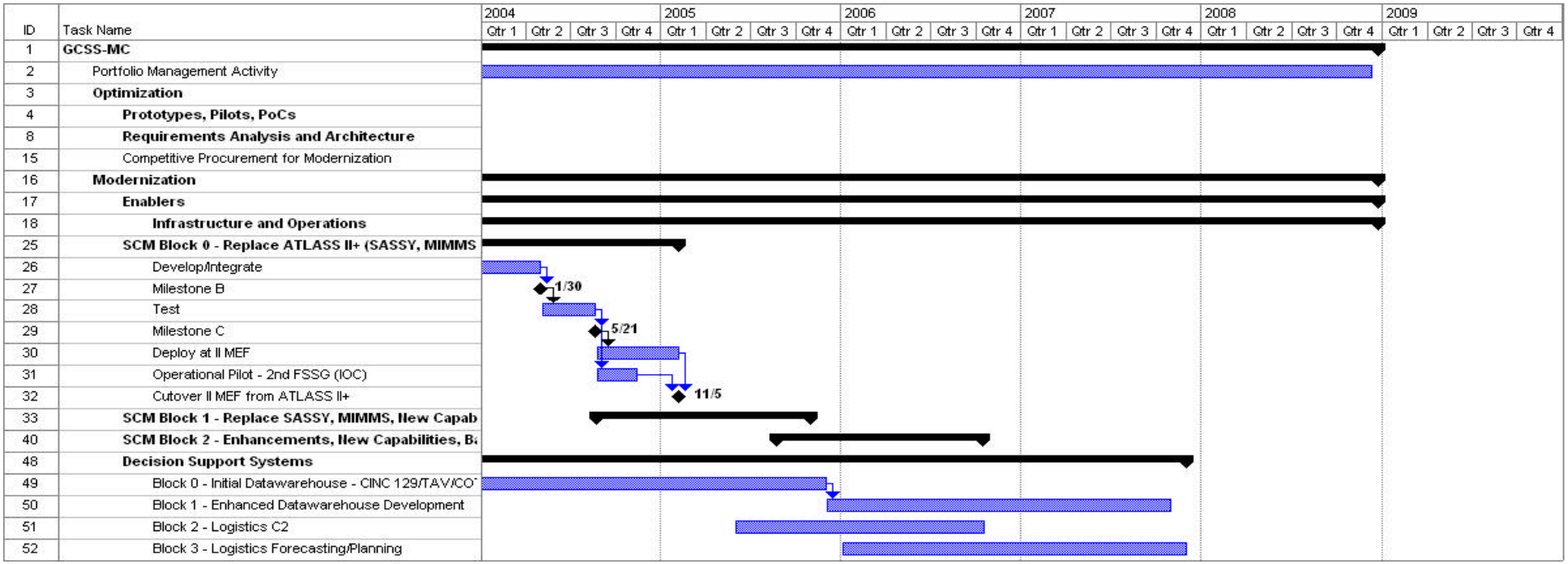
FY04 - NWSC, Crane, IN, Environment testing of servers and workstations, March 2004.
FY05 - NWSC, Crane, IN, Inserting new technology into servers and workstations, Jan 2005.

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.

Exhibit R-3 Cost Analysis						DATE: February 2004						
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /BA-7 Operational Sys Dev**		PROGRAM ELEMENT **0206313M Marine Corps Communications Systems**				PROJECT NUMBER AND NAME **C2510 MAGTF CSSE S&E**						
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
ATLASS PIP	WR	SSC Chesapeake	2.093							Cont.	Cont.	
ATLASS PIP	RCP	MCSC, Quantico, VA	2.709	0.142	02/03					Cont.	Cont.	
ATLASS PIP	RCP	MCSC, Quantico, VA		2.132	04/03					Cont.	Cont.	
TC-AIMS II	C/FFP	MCSC, Quantico, VA	0.000					1.087	01/05	Cont.	Cont.	
MAGTF CSSE & SE	C/FFP	Various	0.726	0.266	04/03	0.008	01/04			Cont.	Cont.	
CCR/MCHS	WR	NSWC, Crane, Indiana	0.000	0.000		0.904	01/04	0.821	01/05	Cont.	Cont.	
GCSS LSM	TBD	TBD	0.000			12.097	01/04	7.195	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	3.800	04/05	Cont.	Cont.	
GCSS/TFSMS	TBD	TBD						0.120	01/05	Cont.	Cont.	
Subtotal Product Dev			**5.528**	**2.540**		**18.414**		**15.324**		**Cont.**	**Cont.**	
Remarks:												
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
GCSS/SDE	TBD	Various				1.810	01/04	1.709	01/05	0.000	3.519	
GCSS/ AIT	TBD	TBD		0.046	02/03	0.299	01/04	0.300	01/05	0.000	0.645	
Subtotal Support			**0.000**	**0.046**		**2.109**		**2.009**			**4.164**	
Remarks:												
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
CCR/MCHS	WR	NSWC, Crane Indiana	0.000	0.000		1.173	03/04	0.701	03/05	Cont.	Cont.	
TC-AIMS II	WR	NSWC, Crane, Indiana	0.216	0.207	12/02	0.442	11/03			0.000	0.865	
TC-AIMS II	MIPR	CECOM	0.063	0.070	11/02	0.100	11/03			0.000	0.233	
TC-AIMS II	WR	NSWC, Crane, Indiana	0.584							0.000	0.584	
Subtotal T&E			**0.863**	**0.277**		**1.715**		**0.701**		**Cont.**	**Cont.**	
Remarks:												
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
ATLASS PIP	WR	MCSC, QUANTICO, VA	0.063	0.352	02/03					0.000	0.415	
Subtotal Management			**0.063**	**0.352**		**0.000**		**0.000**		**0.000**	0.415	
Remarks:												
Total Cost				**3.215**		**22.238**		**18.034**		**Cont.**	**Cont.**	

Exhibit R-4-4a Project Schedule/Detail		DATE: February 2004
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME
RDT&E, N /BA-7 OPERATIONAL SYS DEV	0206313M Marine Corps Communications Systems	C2510 GCSS-MC Modernization



Program Funding Summary (APPN, BLI #, NOMEN)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl	Total Cost
(U) RDT&E,N	0.000	19.611	15.436	8.498	6.183	6.386	6.524	Continuing	Continuing
(U) PMC BLI# 461400	0.000	8.017	8.557	4.152	0.916	0.629	0.213	Continuing	Continuing

Exhibit R-4-4a Project Schedule/Detail		DATE: February 2004
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME
RDT&E, N /BA-7 OPERATIONAL SYS DEV	**0206313M Marine Corps Communications Systems**	**C2510 GCSS-MC Modernization**

GCSS-MC (Modernization: SCM, Data warehouse, Log C2)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
SCM Block 0 - Replace ATLASS II+								
Develop/Integrate			2nd Qtr					
Milestone B			2nd Qtr					
Test			2nd Qtr					
Milestone C			3rd Qtr					
Deploy at II MEF			3rd Qtr +++	+++++				
Operational Pilot - 2nd FSSG (IOC)			3rd Qtr +++	+++++				
Cutover II MEF from ATLASS II+				1st Qtr				
SCM Block 1 - Replace SASSY, MIMMS at I MEF, New Capabilities and Enhancements			3rd Qtr +++	++++				
SCM Block 2 - Enhancements, New Capabilities All MEFs, Bases, Posts and Stations				3rd Qtr +++	+++++++			
Decision Support Systems								
Block 0 - Initial Datawarehouse - CINC 129/TAV/COTS			1st Qtr++++++++++++++++++					
Block 1 - Enhanced Datawarehouse Development				4th Qtr ++++++++++++++++				
Block 2 - Logistics C2				2nd Qtr +++++++++				
Block 3 - Logistics Forecasting/Planning				1st Qtr ++++++++++++++++				

EXHIBIT R-2a, RDT&E Project Justification						DATE: February 2004			
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 **C3099 RADAR SYSTEMS**			
COST ($ in Millions)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	**0.000**	**20.141**	**51.552**	**48.008**	**38.842**	**6.099**	**5.076**	**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 Air Breathing Targets (ABT) within 300 nautical miles, as well as Theater Ballistic Missiles (TBM) at ranges of 400 nautical miles for 360 degrees up to one million feet in elevation. Highly Expeditionary Long Range Air Surveillance Radar (HELRASR) is the modernization initiative to replace the AN-TPS 59 Radar. FY02 and FY03 funding are in Project C2273.

2. The Ground Weapons Locating Radar (GWLR) 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 GWLR 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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**4.628**	**4.653**
RDT&E Articles Qty			

AN/TPS-59 (Sustainment): Develop ECPs for software improvements and DMS issues.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**1.286**	**0.549**
RDT&E Articles Qty			

AN/TPS-59 (Sustainment): Contractor service support**.**

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**2.110**	**0.000**
RDT&E Articles Qty			

HELRASR (Modernization): Develop an acquisition strategy for modernization initiative.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.050**	**0.000**
RDT&E Articles Qty			

HELRASR (Modernization): Develop an Acquisition Program Baseline (APB) for modernization initiative.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2004
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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.150**	**0.000**
RDT&E Articles Qty			

HELRASR (Modernization): Develop a System Safety Authorization Agreement (SSAA) for modernization initiative.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.438**	**0.982**
RDT&E Articles Qty			

HELRASR (Modernization): In-house program management/government expense for modernization initiative.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.300**	**0.000**
RDT&E Articles Qty			

HELRASR (Modernization): Conduct a System Threat Assessment for modernization initiative**.**

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.150**	**0.000**
RDT&E Articles Qty			

HELRASR (Modernization): Develop a Test & Evaluation Master Plan (TEMP) for modernization initiative**.**

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.750**	**0.250**
RDT&E Articles Qty			

HELRASR (Modernization): Request for Proposal (RFP) development for modernization initiative.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.566**	**0.441**
RDT&E Articles Qty			

HELRASR (Modernization): Contractor service support**.**

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.000**	**9.800**
RDT&E Articles Qty			

HELRASR (Modernization): System development and demonstration for modernization initiative.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**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 and hardware improvements (FY03 $1.915); Develop AFAR Software (FY03 $1.500); Investigate Advanced Technologies (FY03 $2.100) .

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2004
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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**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) and (FY03 $0.211); Development of Engineer Design Model (FY02 $0.124); Program management support (FY02 $0.025).

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.188**	**0.201**
RDT&E Articles Qty			

GWLR: Program management support.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.000**	**0.272**
RDT&E Articles Qty			

GWLR: Development of Configuration Management Plan and ILS Plan.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**3.764**	**0.000**
RDT&E Articles Qty			

MRRS: Developmental test and evaluation/risk reduction. Funding ($0.633) in FY03 for this effort is provided under Project C2278 of this PE.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.800**	**0.000**
RDT&E Articles Qty			

MRRS: Study on the reliability of the fourth mission area - counter battery. Funding ($198K) in FY03 for this effort is provided under Project C2278 of this PE.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**2.170**	**0.865**
RDT&E Articles Qty			

MRRS: Program management support. Funding ($0.917) in FY03 for this effort is provided under Project C2278 of this PE.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.500**	**0.000**
RDT&E Articles Qty			

MRRS: Analysis of antenna alternatives, analysis of system integration solutions.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2004
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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.000**	**3.000**
RDT&E Articles Qty			

MRRS: Antenna design.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.000**	**3.500**
RDT&E Articles Qty			

MRRS: Transmitter design.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.000**	**11.000**
RDT&E Articles Qty			

MRRS: Software design and development.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.000**	**4.000**
RDT&E Articles Qty			

MRRS: Hardware design and development.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.000**	**3.000**
RDT&E Articles Qty			

MRRS: Receiver/exciter design.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.000**	**4.675**
RDT&E Articles Qty			

MRRS: Developmental testing.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.000**	**2.000**
RDT&E Articles Qty			

MRRS: System integration.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**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 ($993K).

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.135**	**0.132**
RDT&E Articles Qty			

SHORT/MEDIUM RANGE AIR DEFENSE RADAR: Program mgmt support. Funding FY02 ($110K) FY03 ($110K) for this effort is found under Project C2278 of this PE.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2004
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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**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. Developmental Test and Evaluation/Risk Reduction (FY02 $139K) and (FY03 $999K); Development of Engineer Design Model (FY02 $100K), and (FY03 $150K); Program Management Support (FY02 $110K) and (FY03 $110K) .

(U) Total $ (C3099 Radar Systems)	**0.000**	**20.141**	**51.552**

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2004
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:	**FY 2003**	**FY 2004**	**FY 2005**
(U) FY 2004 President's Budget:			
(U) Adjustments from the President's Budget:	**0.000**	**19.810**	**57.762**
(U) Congressional/OSD Program Reductions			
(U) Congressional Rescissions			
(U) Congressional Increases			
(U) Reprogrammings		0.558	
(U) SBIR/STTR Transfer			
(U) Minor Affordability Adjustment		-0.227	-6.210
(U) FY 2005 President's Budget:	**0.000**	**20.141**	**51.552**

CHANGE SUMMARY EXPLANATION:
(U) Funding: See Above.
(U) Schedule: Not Applicable.
(U) Technical: Not Applicable.

(U) C. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl	Total Cost
(U) PMC, BLI#465100, AN/TPS-59 Sustainment	0.000	18.077	24.466	7.461	11.933	0.000	0.000	Continuing	Continuing
(U) PMC, BLI#465100, HELRASR (Modernization)	0.000	0.000	0.000	0.000	0.000	38.933	50.564	Continuing	Continuing
(U) PMC, BLI#463600, AN/TPS-59 Sustainment	8.163	0.000	0.000	0.000	0.000	0.000	0.000	0.000	8.163
(U) PMC, BLI#463600, AN/TPS-59 V3	3.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.000
(U) PMC, BLI#464200, Grnd Weapon Locator Radar	0.000	0.052	0.862	0.820	28.785	0.285	0.295	Continuing	Continuing
(U) PMC, BLI#462000, AN/TPQ-46/46A Upgrade	1.954	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.954
(U) PMC, BLI#464200, Multi-Role Radar System	0.000	0.000	0.000	2.058	33.104	45.654	46.900	Continuing	Continuing
(U) PMC, BLI#464000, Short/Med Range Radar	0.707	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.707
(U) PMC, BLI#464200, Short/Med Range Radar	0.000	1.569	1.421	0.526	0.436	0.443	0.448	Continuing	Continuing

(U) Related RDT&E:
(U) PE 0206313M (Marine Corps Communication Systems), Project C2278 and Project C2273.

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2004
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) D. ACQUISITION STRATEGY:

(U) Highly Expeditionary Long Range Air Surveillance Radar (HELRASR): The modernization initiative will encompass all 11 AN/TPS-59 radar systems within the Marine Corps inventory. Due to technological advances, evolving threats, mobility issues, changes in employment concepts (OMFTS and EMW), interface requirements imposed by developing systems (CAC2S, CEC/CTN and CLAWS) and requirements outlined in the Capstone Requirements Documents (CID, TAMD, GIG, and IDM), the AN/TPS-59(V)3 must undergo modernization. The Acquisition Strategy is based on the recommendations from the Business Case Analysis and two independent modernization studies. Beginning in FY04, the program office will start R&D efforts that will incorporate the 3-D Expeditionary Long Range Radar ORD requirements into the current 11 fielded AN/TPS-59(V)3 radars. It is anticipated that this effort will require 3 years of R&D with a combined DT/OT. Forecasted IOC is FY08 with FOC for 11 systems occurring in FY13.

(U) AN/TPS-59 Radar Sustainment: 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.

(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.

(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.

(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.

(U) E. MAJOR PERFORMERS:

(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. FY05 project contract with LMC in Jan 05 to develop ECPs for software improvements and DMS issues.

(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.

(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.

(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.

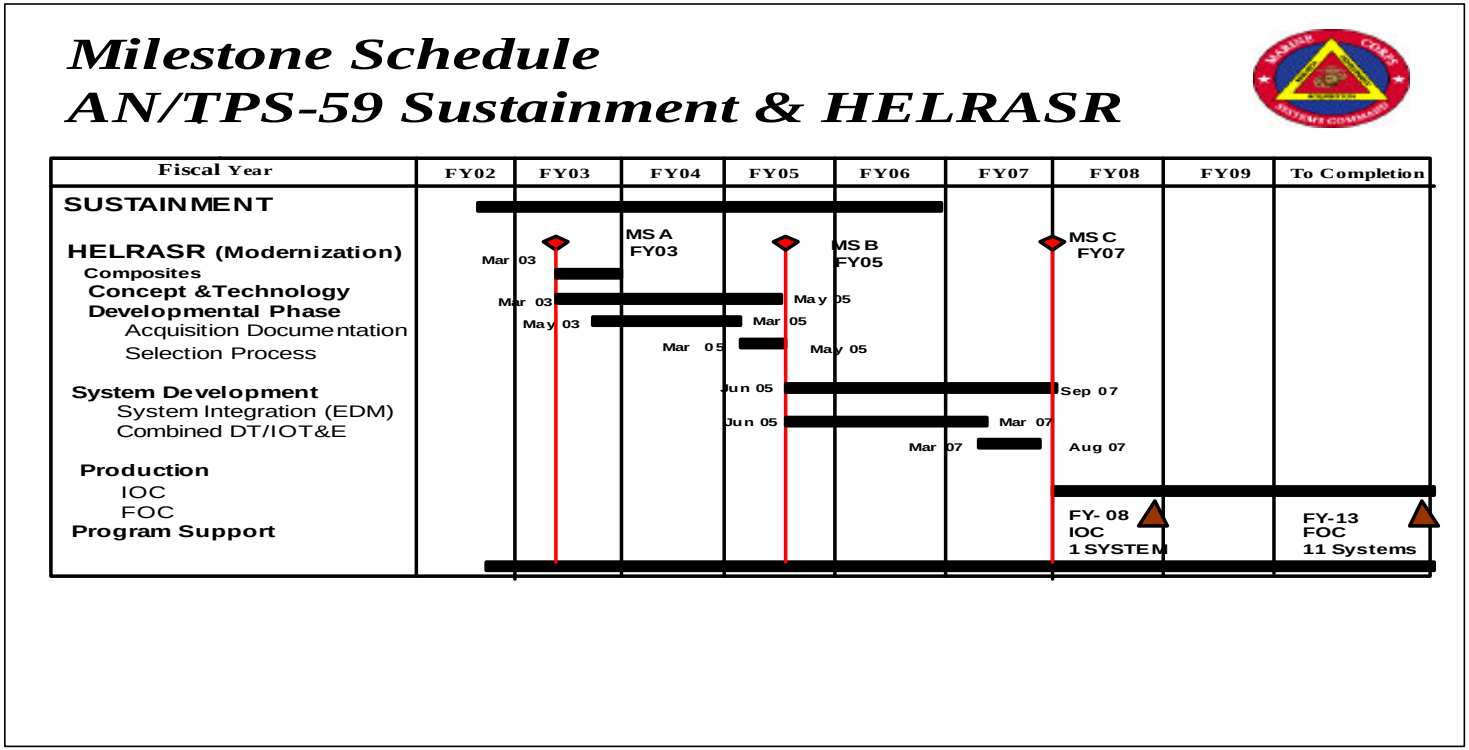
(U) Anteon Corp, Stafford, VA Contracted for in Jan 04 for writing and reviewing MRRS documentation and performing an AGBR evaluation.

(U) Contractor TBD by competitive sourcing, projected to be put on contract in Mar 05 for MRRS software design and development.

Exhibit R-3 Cost Analysis								DATE: February 2004				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /BA-7 OPERATIONAL SYS DEV**			PROGRAM ELEMENT **0206313M Marine Corps Communication Systems**					PROJECT NUMBER AND NAME **C3099 RADAR SYSTEMS**				
Cost Categories (Tailor to WBS, or Sys/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
AN/TPS-59 Sustainment	C/CPFF	Lockheed, Syracuse NY	0.000	0.000		4.628	01/04	4.653	01/05	Cont.	Cont.	
HELRASR (Modernization)	TBD	TBD	0.000	0.000		0.000		9.800	01/05	Cont.	Cont.	
HELRASR (Modernization)	TBD	TBD	0.000	0.000		3.510	11/03	0.250	11/04	Cont.	Cont.	
MRRS	MIPR	Redstone Arsenal, AL	0.000	0.000		3.764	01/04	0.000		0.000	3.764	
MRRS	RCP	Contractor TBD	0.000	0.000		0.000		3.000	01/05	Cont.	Cont.	
MRRS	RCP	Contractor TBD	0.000	0.000		0.000		3.500	01/05	Cont.	Cont.	
MRRS	RCP	Contractor TBD	0.000	0.000		0.000		11.000	03/05	Cont.	Cont.	
MRRS	RCP	Contractor TBD	0.000	0.000		0.000		4.000	01/05	Cont.	Cont.	
MRRS	RCP	Contractor TBD	0.000	0.000		0.000		3.000	01/05	Cont.	Cont.	
MRRS	RCP	Contractor TBD	0.000	0.000		0.000		2.000	01/05	Cont.	Cont.	
SHORT/MEDIUM RANGE	RCP	Northrop Grumman	0.000	0.000		0.325	03/04	0.250	03/05	Cont.	Cont.	
Subtotal Product Dev			**0.000**	**0.000**		**12.227**		**41.453**		**Cont.**	**Cont.**	
Remarks:												
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
GWLR	WR	NSWC, Dahlgren, VA	0.000	0.000		0.047	01/04	0.051	01/05	Cont.	Cont.	
GWLR	WR	Northrop Grumman	0.000	0.000		0.141	01/04	0.150	01/05	Cont.	Cont.	
MRRS	WR	NSWC, Dahlgren, VA	0.000	0.000		0.500	01/04	0.000		0.000	0.500	
MRRS	MIPR	ONR, Arlington , VA	0.000	0.000		0.800	01/04	0.000		0.000	0.800	
SHORT/MEDIUM RANGE	WR	NSWC, Crane, IN	0.000	0.000		0.135	01/04	0.132	01/05	Cont.	Cont.	
Subtotal Support			**0.000**	**0.000**		**1.623**		**0.333**		**Cont.**	**Cont.**	
Remarks:												

Exhibit R-3 Cost Analysis								DATE: February 2004				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /BA-7 OPERATIONAL SYS DEV**			PROGRAM ELEMENT **0206313M Marine Corps Communication Systems**					PROJECT NUMBER AND NAME **C3099 RADAR SYSTEMS**				
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
GWLR	RCP	Raytheon, El Segundo, CA	0.000	0.000		1.169	01/04	1.600	01/05	Cont.	Cont.	
MRRS	RCP	Contractor TBD	0.000	0.000		0.000		4.675	01/05	Cont.	Cont.	
SHORT/MEDIUM RANGE	RCP	Warner Robins AFB, GA	0.000	0.000		0.337	03/04	0.382	01/05	Cont.	Cont.	
Subtotal T&E			**0.000**	**0.000**		**1.506**		**6.657**		**Cont.**	**Cont.**	
Remarks:												
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
AN/TPS-59 Sustainment	CPFF	Anteon, Stafford, VA	1.739	0.000		1.286	01/04	0.549	01/05	Cont.	Cont.	
HELRASR (Modernization)	CPFF	Anteon, Stafford, VA	0.000	0.000		0.566	01/04	0.441	01/05	Cont.	Cont.	
HELRASR (Modernization)	WR	MCSC, Quantico, VA	0.000	0.000		0.438	01/04	0.982	01/05	Cont.	Cont.	
GWLR	MIPR	GSA, Bremerton, WA	0.000	0.000		0.325	01/04	0.272	01/05	Cont.	Cont.	
MRRS	MIPR	GSA, Bremerton, WA	0.000	0.000		1.522	01/04	0.182	01/05	Cont.	Cont.	
MRRS	RCP	MCSC, Quantico, VA	0.000	0.000		0.648	01/04	0.683	01/05	Cont.	Cont.	
Subtotal Management			**1.739**	**0.000**		**4.785**		**3.109**		**Cont.**	**Cont.**	
Remarks:												
Total Cost			**0.000**	**0.000**		**20.141**		**51.552**		**Cont.**	**Cont.**	

Exhibit R-4-4a Project Schedule/Detail		DATE: February 2004
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME
RDT&E, N /BA-7 OPERATIONAL SYS DEV	0206313M Marine Corps Communication Systems	C3099 RADAR SYSTEMS



Program Funding Summary (APPN, BLI #, NOMEN)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl	Total Cost
(U) RDT&E,N, C2273 AN/TPS-59	5.515	0.555	0.000	0.000	0.000	0.000	0.000	0.000	6.070
(U) RDT&E,N, C3099 AN/TPS-59 (Sustainment)	0.000	5.914	5.202	4.567	2.212	0.000	0.000	Continuing	Continuing
(U) RDT&E,N, C3099 HELRASR (Modernization)	0.000	4.514	11.473	21.160	19.132	4.840	3.818	Continuing	Continuing
(U) PMC, BLI#463600, AN/TPS-59 (Sustainment)	8.163	0.000	0.000	0.000	0.000	0.000	0.000	0.000	8.163
(U) PMC BLI#463600, AN/TPS-59 V3	3.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.000
(U) PMC, BLI#465100, AN/TPS-59 (Sustainment)	0.000	18.077	24.466	7.461	11.933	0.000	0	Continuing	Continuing
(U) PMC, BLI#465100, HELRASR (Modernization)	0.000	0.000	0.000	0.000	0.000	38.933	50.564	Continuing	Continuing

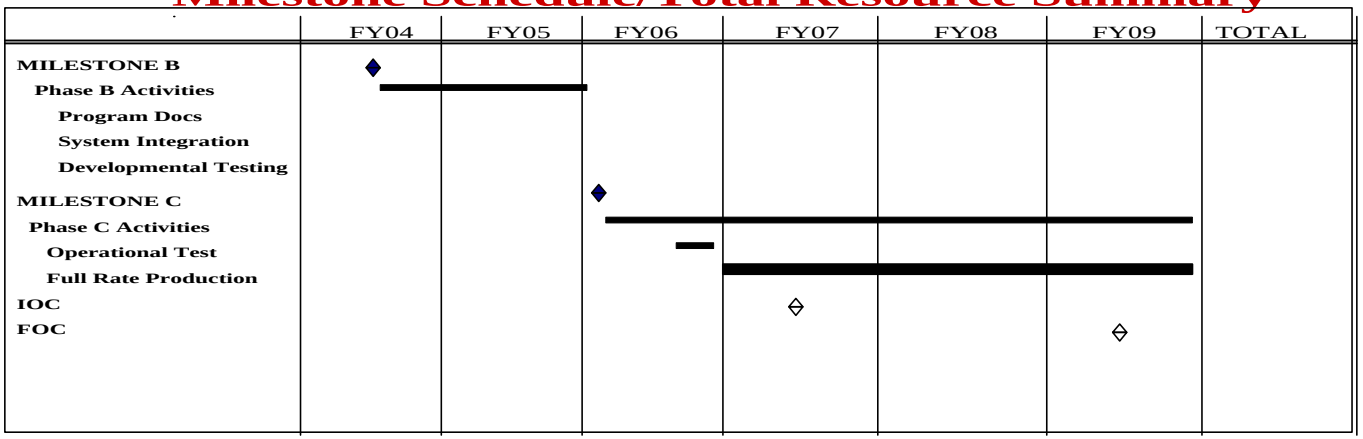
Exhibit R-4-4a Project Schedule/Detail		DATE: February 2004
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME
RDT&E, N /BA-7 OPERATIONAL SYS DEV	**0206313M Marine Corps Communication Systems**	**C3099 RADAR SYSTEMS**

	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
AN/TPS-59 Sustainment Schedule	3rd Q----------4th Q							
HELRASR (AN/TPS-59 Modernization) Schedule								
Milestone A		2nd Q						
Concept & Technology Developmental Phase		2nd Q----------3rd Q						
Acquisition Documentation		3rd 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----------							

Exhibit R-4-4a Project Schedule/Detail		DATE: February 2004
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME
RDT&E, N /BA-7 OPERATIONAL SYS DEV	0206313M Marine Corps Communication Systems	C3099 RADAR SYSTEMS

GROUND WEAPONS LOCATING RADAR SCHEDULE PROFILE

Milestone Schedule/Total Resource Summary



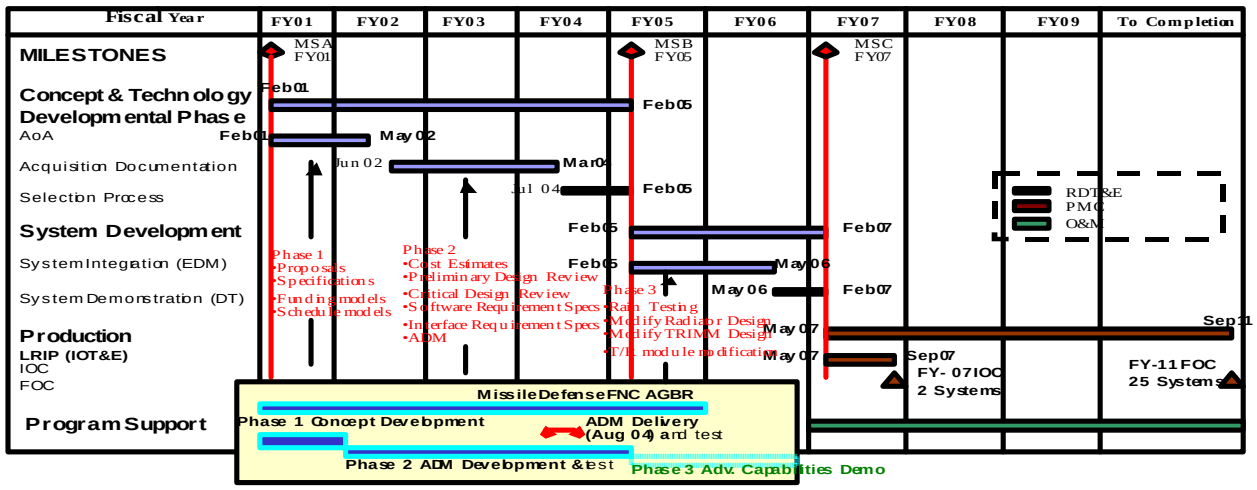
Program Funding Summary (APPN, BLI #, NOMEN)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl	Total Cost
(U) RDT&E,N, C3099, GWLR	0.000	1.682	2.073	0.986	0.314	0.000	0.000	0.000	5.055
(U) PMC, BLI#464200, GWLR	0.000	0.052	0.862	0.820	28.785	0.285	0.295	Continuing	Continuing
(U) PMC, BLI#462000, AN/TPQ-46/46A Upgrade	1.954	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.954

Exhibit R-4-4a Project Schedule/Detail		DATE: February 2004
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME
RDT&E, N /BA-7 OPERATIONAL SYS DEV	**0206313M Marine Corps Communication Systems**	**C3099 RADAR SYSTEMS**

GWLR SCHEDULE DETAIL	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Milestone B		3rd Q					
Phase B Activities		3rd Q----------1st Q					
Long Lead Items		3rd Q					
Milestone C				1st Q			
Phase C Activities				1st Q----------4th Q			
Operational Test				3rd Q-4th Q			
Full Rate Production					1st Q----------4th Q		
IOC					3rd Q		
FOC							3rd Q

Exhibit R-4-4a Project Schedule/Detail		DATE: February 2004
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME
RDT&E, N /BA-7 OPERATIONAL SYS DEV	0206313M Marine Corps Communication Systems	C3099 RADAR SYSTEMS

MRRS Milestone Schedule/Total Resource Summary



Program Funding Summary (APPN, BLI #, NOMEN)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl	Total Cost
(U) RDT&E,N, C2278, MRRS	2.741	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.741
(U) RDT&E,N, C3099, MRRS	0.000	7.234	32.040	20.942	16.930	1.008	1.005	Continuing	Continuing
(U) PMC, BLI#464200, MRRS	0.000	0.000	0.000	2.058	33.104	45.654	46.900	Continuing	Continuing

Exhibit R-4-4a Project Schedule/Detail		DATE: February 2004
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME
RDT&E, N /BA-7 OPERATIONAL SYS DEV	**0206313M Marine Corps Communication Systems**	**C3099 RADAR SYSTEMS**

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----------2nd 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			
Long Lead Items					3rd Q			
Milestone C						2nd Q		
Production						3rd Q----------		
LRIP (IOT&E)						3rd Q-4th Q		
IOC						4th Q		
Program Support						1st Q----------		

EXHIBIT R-2, RDT&E Budget Item Justification					DATE: February 2004				
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**							
COST ($ in Millions)	**FY 2003**	**FY 2004**	**FY 2005**	**FY 2006**	**FY 2007**	**FY 2008**	**FY 2009**	**Cost to Complete**	**Total Program**
Total PE Cost	**37.552**	**41.960**	**44.828**	**59.852**	**55.668**	**36.541**	**29.805**	**Cont**	**Cont**
C0021 Assault Amphibious Vehicle 7A1 (AAV7A1)	**0.351**	**0.351**	**0.367**	**1.910**	**1.928**	**0.820**	**0.840**	**Cont**	**Cont**
C1555 Light Armored Vehicle (LAV) PIP	**4.304**	**4.169**	**15.267**	**31.790**	**23.923**	**4.060**	**1.430**	**Cont**	**Cont**
C1901 Marine Corps Ground Weaponry PIP	**15.212**	**8.797**	**3.101**	**4.072**	**4.253**	**4.363**	**4.149**	**Cont**	**Cont**
C2086 Marine Enhanced Program (MEP)	**2.117**	**2.603**	**2.655**	**2.608**	**2.651**	**2.734**	**2.790**	**Cont**	**Cont**
B2237 Amphibious Vehicle Test Branch (AVTB)	**0.733**	**0.799**	**0.812**	**0.828**	**0.844**	**0.871**	**0.890**	**Cont**	**Cont**
C2503 Family of Combat Equip Support & Services	**1.070**	**3.699**	**3.959**	**7.204**	**7.509**	**9.087**	**10.143**	**Cont**	**Cont**
C2928 EIFGSWS (HIMARS)	**9.891**	**6.860**	**3.026**	**0.016**	**0.000**	**0.000**	**0.000**	**0.000**	**19.793**
C3098 Fire Support Systems	**0.000**	**11.099**	**12.201**	**10.199**	**14.008**	**14.134**	**9.077**	**Cont**	**Cont**
C4002 Family of Raid Reconnaissance	**0.000**	**2.545**	**3.440**	**1.225**	**0.552**	**0.472**	**0.486**	**Cont**	**Cont**
C9277 Target Location Designation and Handoff Sys	**1.485**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**1.485**
C9278 Integrated Digital Camera Riflescope	**1.433**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**1.433**
C9279 Body Armor Upgradera Riflescope	**0.956**	**1.038**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**1.994**
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.

EXHIBIT R-2, RDT&E Budget Item Justification	DATE: February 2004
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

	FY2003	FY2004	FY 2005
(U) FY 2004 President's Budget:	**38.850**	**35.439**	**70.564**
(U) Adjustments from the President's Budget:			
(U) Congressional/OSD Program Reductions	-0.018	-0.009	
(U) Congressional Rescissions			
(U) Congressional Increases		5.950	
(U) Reprogrammings	0.949		-25.796
(U) SBIR/STTR Transfer	-0.269	-0.004	-0.001
(U) Minor Affordability Adjustment	-1.960	0.584	0.061
(U) FY 2005 President's Budget:	**37.552**	**41.960**	**44.828**

CHANGE SUMMARY EXPLANATION:

(U) Funding: See Above.

(U) Schedule:

(U) Technical: Not Applicable.

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2004			
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		**0.733**	**0.799**	**0.812**	**0.828**	**0.844**	**0.871**	**0.890**	**Cont**	**Cont**
RDT&E Articles Qty										

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

(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.

(U) B. ACCOMPLISHMENTS/PLANNED PROGRAM:

COST ($ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost		**0.569**	**0.634**	**0.642**
RDT&E Articles Qty				

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.

COST ($ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost		**0.164**	**0.165**	**0.170**
RDT&E Articles Qty				

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).

(U) Total $	0.733	0.799	0.812

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2004
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:

	FY2003	FY2004	FY2005
(U) FY 2004 President's Budget:	**0.751**	**0.808**	**0.814**
(U) Adjustments from the President's Budget:			
(U) Congressional Program Reductions	**-0.018**	**-0.009**	
(U) Congressional Rescissions			
(U) Congressional Increases			
(U) Reprogrammings			
(U) SBIR/STTR Transfer			
(U) Inflation Change			**-0.002**
(U) FY 2005 Presidential Budget:	**0.733**	**0.799**	**0.812**

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 03, Oct 04, Oct 05

(U) SCHEDULE PROFILE:

Testing conducted at AVTD includes all aspects of Marine Corps Assault Amphibious Vehicles. Testing is planned for MK 155 Minefield Breaching System, RAM/RS (Reliability, Availability and Maintainability/Rebuild to Standard) 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 RAM/RS. AVTD will support the testing of the Advanced Amphibious Assault Vehicle (AAAV), as directed by DRPM AAA, during the phase of the AAAV Program Development.

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2004		
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)**				
COST ($ in Millions)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY2008	FY2009	Cost to Complete	Total Program
Project Cost	**0.351**	**0.351**	**0.367**	**1.910**	**1.928**	**0.820**	**0.840**	**Cont**	**Cont**
RDT&E Articles Qty									

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

(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.

(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.

B. ACCOMPLISHMENTS/ PLANNED PROGRAM:

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.351**	**0.351**	**0.367**
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:

	FY2003	**FY2004**	**FY2005**
(U) FY 2004 President's Budget:	**0.363**	**0.355**	**0.368**
(U) Adjustments from the President's Budget:			
(U) Congressional Program Reductions			
(U) Congressional Rescissions			
(U) Congressional Increases			
(U) Reprogrammings			
(U) Minor Affordability Adjustments			
(U) SBIR/STTR Transfer	-0.012	-0.004	-0.001
(U) FY 2005 President's Budget:	**0.351**	**0.351**	**0.367**

CHANGE SUMMARY EXPLANATION:

(U) Funding: See Above.

(U) Schedule: Not Applicable.

(U) Technical: Not Applicable.

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2004
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)

(U) C. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl	Total Cost
(U) PMC, 202100, AAV 7A1 PIP	117.235	104.156	58.596	10.574	17.807	44.841	44.029	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:

EXHIBIT R-2a, RDT&E Project Justification						DATE: February 2004			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /BA-7 Operational Sys Dev**	PROGRAM ELEMENT NUMBER AND NAME **0206623M Marine Corps Ground Combat/Supporting Arms Systems**					PROJECT NUMBER AND NAME **C1555 Light Armored Vehicle (LAV) PIP**			
COST ($ in Millions)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	**4.304**	**4.169**	**15.267**	**31.790**	**23.923**	**4.060**	**1.430**	**Cont**	**Cont**
RDT&E Articles Qty									

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

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. The LAV FOV provides a logistically self-contained, highly mobile, and lethal combined arms combat system to the Marine Air-Ground Task Force (MAGTF). The LAV Product Improvement Program funds the development and testing of modifications of four programs; the LAV Service Life Extension Program (SLEP) which includes the Improved Thermal Sight System (ITSS), the LAV Anti Armor System (LAV-AAS) Program, the LAV-Command & Communication (LAV-C2) Program, the LAV Expeditionary Fire Support System (LAV-EFSS), 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 EFSS consists of a 120mm Recoil Mortar System replacement for the LAV-Mortar variant's M252 81 mm Mortar System.

(U) B. ACCOMPLISHMENTS/PLANNED PROGRAM:

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**3.414**	**2.821**	**1.233**
RDT&E Articles Qty			

LAV SLEP ITSS: Develope ITSS prototypes, PMO & matrix support, PMO travel, Contracted Advisory Assistance Services (CAAS) and DT/OT of ITSS prototypes.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.890**	**1.348**	**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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.000**	**7.931**
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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**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.

0.000	4.304	4.169	15.267

(U) Total $

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2004
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**

(U) PROJECT CHANGE SUMMARY:

	FY2003	FY2004	FY2005
(U) FY 2004 President's Budget:	4.725	4.216	37.306
(U) Adjustments from the President's Budget:			
(U) Congressional/OSD Program Reductions			
(U) Congressional Rescissions			
(U) Congressional Increases			
(U) Reprogrammings			-22.201
(U) SBIR/STTR Transfer	-0.036		
(U) Minor Affordability Adjustment	-0.385	-0.047	0.162
(U) FY 2005 President's Budget:	**4.304**	**4.169**	**15.267**

CHANGE SUMMARY EXPLANATION:
(U) Funding: See Above.
(U) Schedule: Not Applicable.
(U) Technical: Not Applicable.

(U) C. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl	Total Cost
(U) PMC, 203800, LAV PIP	49.802	36.213	41.588	59.252	39.606	82.118	86.516	Continuing	Continuing

(U) Related RDT&E: Not Applicable.

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2004
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) 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.

(U) D. ACQUISITION STRATEGY: The LAV C2 Program is designed to meet and maintain the command and control requirements of the Operational Requirements Document (ORD). The LAV-C2 Upgrade will provide a hardware and software module 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.

(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.

(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 meed 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.

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2004
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**

(U) E. MAJOR PERFORMERS:

LAV ITSS

FY03	Raytheon Company, Mckinney, TX. DT/OT preparation. Oct 02.
	Metric Systems Corporation, Fort Walton Beach, FLA.
	SURVICE Engineering Company, Belcamp, MD. ITSS development & test support. Oct 02.
FY04	Raytheon Company, Mckinney, TX. DT/OT preparation.
	Metric Systems Corporation, Fort Walton Beach, FLA.
	MCCDC, Quantico, VA, DT/OT completion. Oct 04.
	TACOM, Warren, MI. PMO support. Oct 03.
	SURVICE Engineering Company, Belcamp, MD. ITSS development & test support. Oct 03.
FY05	MCCDC, Quantico, VA, DT/OT completion. Oct 04.
	TACOM, Warren, MI. PMO support. Oct 04.
	SURVICE Engineering Company, Belcamp, MD. ITSS development & test support. Oct 04.

LAV RAM

FY03	Various
FY04	Various
FY05	Various

LAV-C2 & LAV-EFSS

FY05	Major performers are not determined as of this date.

Exhibit R-3 Cost Analysis						DATE: February 2004						
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 **C1555 Light Armored Vehicle (LAV) PIP**				
Cost Categories **Product Development**	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 Spt	CPFF	GTRI/SURVICE, Bellcamp MD	1.189							0.000	1.189	1.189
Gov't Dev Engineering	MIPR	In-House Product Dev	1.560							0.000	1.560	1.560
Product Development (ITSS)	Various	Raytheon, Mckinney TX	20.332	1.702	VAR	0.238				Cont.	Cont.	
Product Development (RAM)	Various	Various	1.184	0.890	VAR	1.348	VAR	1.240	VAR	Cont.	Cont.	
Product Development (C2)	Various	TBD						7.362	1Q05	4.678	12.040	
Product Development(EFSS)	Various	TBD						3.800	1Q05	7.902	11.702	
CASS	MIPR	SURVICE, Bellcamp, MD	0.000	0.275							0.275	
Subtotal Product Dev			**24.265**	**2.867**		**1.586**		**12.402**		**Cont.**	**Cont.**	
Remarks:												
Cost Categories **Support**	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
TOW Missiles	FFP	TBD	0.000							0.000	0.000	0.590
Subtotal Support			**0.000**	**0.000**		**0.000**		**0.000**			**0.000**	**0.590**
Remarks:												
Cost Categories **Test & Evaluation**	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
Devl/Oper Test & Eval	MIPR	Yuma Prv Ground, AZ	5.133	1.022	3Q03	1.180	Various	1.233	Various	5.000	13.568	
Devl/Oper Test & Eval	MIPR	Aberdeen Test Center, MD	2.575							8.535	11.110	
Devl/Oper Test & Eval	MIPR	TACOM								0.500	0.500	
Devl/Oper Test & Eval	MIPR	MCOTEA, Quantico, VA	0.650	0.075	3Q03	0.870	Various	0.250	Various	Cont.	Cont.	
Subtotal T&E			**8.358**	**1.097**		**2.050**		**1.483**		**Cont.**	**Cont.**	
Remarks:												
Cost Categories **Program Management**	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
Program Management	VAR	TACOM, Warren, MI	2.680	0.130	1Q03	0.385	1Q04	1.023	1Q05	Cont.	Cont.	
Matrix Support	MIPR	ARDEC/NVL/TACOM, MI	0.586	0.210	1Q03	0.148	Various	0.359	Various	Cont.	Cont.	
Subtotal Management			**3.266**	**0.340**		**0.533**		**1.382**		**Cont.**	**Cont.**	
Remarks:												
Total Cost				**4.304**		**4.169**		**15.267**		**Cont.**	**Cont.**	

Exhibit R-4/4a Schedule Profile/Detail		DATE: February 2004
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME
RDT&E, N /BA 7 Operational Sys Dev	**0206623M Marine Corps Ground Combat/Supporting Arms Systems**	**C1555 Light Armored Vehicle (LAV) PIP**

(U) D. SCHEDULE PROFILE:

LAV SLEP

Milestone 0:	1st Qtr, FY 1998	Milestone III:	2nd Qtr, FY 2002
Milestone I:	2nd Qtr, FY 1999	Contract Award:	3rd Qtr, FY 2002
Milestone II:	2nd Qtr, FY 2000	IOC:	2nd Qtr, FY 2004
DT / OT:	2nd Qtr, FY 2001	FOC:	4th Qtr, FY 2009

LAV C2

Milestone A:	Ongoing	Contract Award:	1st Qtr, FY 2007
Milestone B:	3rd Qtr, FY2004	IOC:	1st Qtr, FY 2009
DT / OT:	3rd Qtr, FY 2006	FOC:	1st Qtr, FY 2010
Milestone C:	1st Qtr, FY 2007		

LAV EFSS

		Contract Award:	1st Qtr, FY 2008
Milestone B:	3rd Qtr, FY 2004	IOC:	1st Qtr, FY 2010
DT / OT:	1st Qtr, FY2007	FOC:	1st Qtr, FY 2011
Milestone C:	1st Qtr, FY2008		

Program Funding Summary (APPN, BLI #, NOMEN)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY2008	FY2009	To Compl	Total Cost
(U) RDT&E,N	4.304	4.169	15.267	31.790	23.923	4.060	1.430	Continuing	Continuing
(U) PMC, BLI# 203800 LAV	49.802	36.213	41.588	59.252	39.606	82.118	86.516	Continuing	Continuing

Exhibit R-4/4a Schedule Profile/Detail		DATE: February 2004
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 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
LAV SLEP							
Milestone III:							
Contract Award:							
IOC:		2Q					
FOC:							4Q
LAV C2							
Milestone A:							
Milestone B:		3Q					
DT / OT:				3Q			
Milestone C:					1Q		
Contract Award:					1Q		
IOC:							1Q
LAV EFSS							
Milestone A:							
Milestone B:		3Q					
DT / OT:					1Q		
Milestone C:						1Q	
Contract Award:						1Q	
IOC:							1Q10

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2004		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /BA-7 Operational Sys Dev**	PROGRAM ELEMENT NUMBER AND NAME **0206623M Marine Corps Ground Combat/Supporting Arms Systems**				**C1901 Marine Corps Ground Weaponry PIP**				
COST ($ in Millions)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	**15.212**	**8.797**	**3.101**	**4.072**	**4.253**	**4.363**	**4.149**	**Cont**	**Cont**
RDT&E Articles Qty	**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 development.

(U) B. ACCOMPLISHMENTS/PLANNED PROGRAM:

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**1.999**	**0.000**	**0.000**
RDT&E Articles Qty			

AN/GVS-5 Replacement (AEROS): Funds used for engineering support and to purchase candidate systems for use in a down select. Systems were used for developmental testing and further down select to a single Engineering/Manufacturing Development (EMD) system. This program has moved to Project C3098 within this Program Element (PE).

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.261**	**0.000**	**0.000**
RDT&E Articles Qty			

Family of Artillery Munitions (FAM): Supported a production decision for the Modular Artillery Charge System to include Weapons Systems Explosive Safety Review Board testing, program support, and travel. Continued 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.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.864**	**0.000**	**0.000**
RDT&E Articles Qty			

Family of Raids and Reconnaissance Equipment: Continued participation with Natick Labs on refinement of Full Spectrum Battle Equipment (FSBE) program and enhancement of FSBE ensemble. Integrated logistics to standardize and improve existing close quarters battle and direct action combat equipment and all Marine Corps parachute programs. Continued on-going support to existing items that meet mission requirements for Close Quarter Battle and Parachute Operations. Continued 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. Continued 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.

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2004
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /BA-7 Operational Sys Dev**	PROGRAM ELEMENT NUMBER AND NAME **0206623M Marine Corps Ground Combat/Supporting Arms Systems**	**C1901 Marine Corps Ground Weaponry PIP**

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.145**	**0.000**	**0.000**
RDT&E Articles Qty			

Family of Small Craft Mods: Continued 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.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**1.988**	**0.000**	**0.000**
RDT&E Articles Qty			

Fire Support Mods: Joint participation in artillery and fire support improvement projects. Specifically conducted life cycle analysis on the M198 Howitzer develop Global Positioning System (GPS)-Selective Anti-Spoofing Module (SASM) capability for the MMS. Conducted analyses and studies on Expeditionary Fire Support System (EFSS). 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. Researched safety concerns related to M198 Howitzer, and designed and developed material solution to those concerns. This program has moved to Project C3098 within this PE.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.705**	**0.865**	**1.000**
RDT&E Articles Qty			

Infantry Weapons Mods: Joint participation and Marine Corps unique activities for evaluation of safety, lethality, and technology improvements for Marine Corps infantry/reconnaissance individual /crew-served weapons. 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 Marine Expeditionary Unit Special Operations Capability (MEU SOC) .45 Caliber pistol efforts. Issues particularly related to safety are recurring events from year to year that require immediate attention to maintain an operational readiness posture. Likewise, we will continue to pursue potential technological advances that will significantly enhance the operational utility of both individual and crew-served weapon systems.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.579**	**0.873**	**0.757**
RDT&E Articles Qty			

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 Marine Corps Systems Command (MCSC) in the lead.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.460**	**0.000**	**0.000**
RDT&E Articles Qty			

Interim Passenger Helicopter Aircrew Breathing Device: Initiated R&D efforts in development of underwater breathing device providing limited life-saving capability. The device allows an underwater breathing capability for Marines who find themselves in a downed helicopter scenario over water.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**4.244**	**0.000**	**0.000**
RDT&E Articles Qty			

M1A1 Firepower Enhancement: Comparative assessments of competing designs and conducted system design review to finalize system performance specification. Performed EMD phase activities. Performed final integration and prove out. Procured test articles, conducted developmental test and evaluation, pre-production technical reviews/audits, logistical support, and development/planning. This program has moved to Project C2316, PE26624M, Marine Corps Combat Service Support.

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2004
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /BA-7 Operational Sys Dev**	PROGRAM ELEMENT NUMBER AND NAME **0206623M Marine Corps Ground Combat/Supporting Arms Systems**	**C1901 Marine Corps Ground Weaponry PIP**

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.236**	**0.000**	**0.000**
RDT&E Articles Qty			

M1A1 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.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**1.797**	**0.000**	**0.000**
RDT&E Articles Qty			

Mortar Ballistic Computer (MBC): Initiated 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.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.463**	**0.989**	**1.105**
RDT&E Articles Qty			

Night Vision Mod Line: Joint participation and Marine Corps unique activities for evaluation of safety, lethality and technology improvements for Marine Corps Night Vision Devices. Provides for in-service engineering agent (ISEA) support at Naval Surface Warfare Center (NSWC), Crane, IN. Participate with Army PM (Program Manager) - Night Vision at Ft. Belvoir on new enhancements for Image Intensification (I2) and fused multispectral weapon sight. Travel to support enhanced systems development and review of tests.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.064**	**0.183**
RDT&E Articles Qty			

Tactical Unmanned Vehicle (TUV): Funds will be used for developmental testing at Redstone Arsenal.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.020**	**0.056**	**0.056**
RDT&E Articles Qty			

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, and automated aimport reticle (non-mechanical, non-quadrant style, computer-driven sight).

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**1.031**	**0.000**	**0.000**
RDT&E Articles Qty	**3**		

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 were also used for support of the program management office. This program has moved to Project C4002 within this PE.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2004
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /BA-7 Operational Sys Dev**	PROGRAM ELEMENT NUMBER AND NAME **0206623M Marine Corps Ground Combat/Supporting Arms Systems**		**C1901 Marine Corps Ground Weaponry PIP**

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.036**	**0.000**	**0.000**
RDT&E Articles Qty			

Dragon Eye COW (Cost of War): Funds were used to meet urgent needs in support of the 1st Marine Division. Ten prototype Dragon Eye UAV (Unmanned Aerial Vehicle) systems were upgraded to like-new status and provided to 1st MarDiv as a temporary loan for use in Operation Iraqi Freedom (OIF).

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.384**	**0.000**	**0.000**
RDT&E Articles Qty			

MAGTF Expeditionary Family of Fighting Vehicles (MEFFV): Operational system development, contractor support and program office travel.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**5.950**	**0.000**
RDT&E Articles Qty			

MCAGCC Range Instrumentation: Integrates live and simulated training with Joint Higher Headquarters and Combatant Commander training, interoperability of service ranges and operating areas allowing Marine and other service forces to seamlessly train across range boundaries against larger coordinated Opposing Forces (OPFOR) and integration of Joint Tactical Tasks into the normal conduct of USMC component training at Marine Corps major bases and training ranges.

(U) Total $	15.212	8.797	3.101

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2004
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /BA-7 Operational Sys Dev**	PROGRAM ELEMENT NUMBER AND NAME **0206623M Marine Corps Ground Combat/Supporting Arms Systems**	**C1901 Marine Corps Ground Weaponry PIP**

(U) PROJECT CHANGE SUMMARY:

	FY2003	FY2004	FY2005
(U) FY 2004 President's Budget:	**14.245**	**2.946**	**3.112**
(U) Adjustments from the President's Budget:			
(U) Congressional Program Reductions			
(U) Congressional Rescissions			
(U) Congressional Increases		5.95	
(U) Reprogrammings	1.706		
(U) Small Business Innovation Research	-0.221		
(U) Minor Affordability Adjustment	-0.518	-0.099	-0.011
(U) FY 2005 President's Budget:	**15.212**	**8.797**	**3.101**

CHANGE SUMMARY EXPLANATION:
(U) Funding: See above.
(U) Schedule: Not Applicable.
(U) Technical: Not Applicable.

(U) C. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl	Total Cost
(U) PMC (BLI#206200) Improved Recovery Veh	3.420	3.623	0.000	0.000	0.000	0.000	0.000	0.000	7.043
(U) PMC (BLI#206300) MOD KITS AFS	3.884	15.007	11.844	10.229	11.728	11.596	10.294	Continuing	Continuing
(U) PMC (BLI#220900) Mod Kits IWS	4.102	3.281	3.248	3.467	2.967	2.936	3.005	Continuing	Continuing
(U) PMC (BLI#222000) Under $5 Million	3.181	14.122	4.888	5.711	4.897	4.814	2.551	Continuing	Continuing
(U) PMC (BLI#233400) Modular Weapon System	24.645	13.611	10.051	9.939	0.052	0.000	0.000	0.000	58.298
(U) PMC (BLI#462000) Items <$5M	22.613	0.460	0.461	0.460	0.460	0.000	0.000	Continuing	Continuing
(U) PMC (BLI#473300) Fire Support Systems	33.376	28.235	10.215	2.193	0.000	0.000	0.000	Continuing	Continuing
(U) PMC (BLI#475000) Items Under $5M (Intel)	4.154	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
(U) PMC (BLI#493000) Night Vision Equipment	24.403	30.006	26.100	27.655	37.352	12.851	19.199	Continuing	Continuing
(U) PMC (BLI#643400) Amphibious Raid Equip	18.625	21.247	15.771	16.105	6.658	3.429	3.497	Continuing	Continuing
(U) PMC (BLI#667000) Items Less Than $5M	0.000	13.955	5.713	4.687	6.238	6.688	6.690	Continuing	Continuing
(U) PMC (BLI#209500) M1A1 Firepower	0.000	4.191	36.873	33.168	17.802	22.980	0.000	Continuing	Continuing
(U) PMC (BLI#473400) SURSS	0.000	2.043	8.866	11.730	0.927	0.954	0.971	Continuing	Continuing

(U) Related RDT&E:

(U) All Ground Weapons and Ground Ammunition Systems: Army, Navy, Air Force, Coast Guard, and Special Operations Command

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2004
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /BA-7 Operational Sys Dev**	PROGRAM ELEMENT NUMBER AND NAME **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. Target Location Designation and Hand-off System (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 Non-Developmental Item (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.

Exhibit R-3 Cost Analysis						DATE: February 2004						
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /BA 7 Operational Sys Dev**		PROGRAM ELEMENT **0206623M Marine Corps Ground Combat/Supporting Arms**				PROJECT NUMBER AND NAME **C1901 Marine Corps Ground Weaponry 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
PRODUCT DEVELOPMENT		**SEE BELOW**										
AN/GVS5 REPLACEMENT	WR	MCLB, Barstow, CA	0.034	0.100	2Q03					Cont.	Cont.	
AN/GVS5 REPLACEMENT	RCP	Synetics, Inc. King George, VA		0.136	2Q03					Cont.	Cont.	
AN/GVS5 REPLACEMENT	RCP	MKI Woodbridge, VA	0.098	0.050	2Q03					Cont.	Cont.	
DRAGON EYE COW	RCP	NASC, Pax River, MD		0.036	3Q03					Cont.	Cont.	
Fam Raid and Recon	RCP	NSWDG, Va Beach, VA		0.196	1Q03					Cont.	Cont.	
Fam Raid and Recon	MIPR	NATICK Labs, Natick, MA		0.163	1Q03					Cont.	Cont.	
Fam Raid and Recon	WR	CSS, Panama City, FL		0.253	1Q03					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	0.047	2Q03					Cont.	Cont.	
Fire Spt Mods	MIPR	TACOM, Rock Island, IL	0.070	0.085	2Q03					Cont.	Cont.	
Fire Spt Mods	RCP	Tallahassee Tech, FL	0.019	0.600	3Q03					Cont.	Cont.	
Fire Spt Mods	RCP	Mandus Group, San Diego, CA	0.004	0.666	3Q03					Cont.	Cont.	
Fire Spt Mods	WR	MCLB, Barstow, CA	0.115	0.092	2Q03					Cont.	Cont.	
Fire Spt Mods	VAR	VARIOUS	0.295	0.050	2Q03					Cont.	Cont.	
Inf Weapon Mods	WR/RCP	MCCDC, Quantico, VA	0.817	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	0.385	2Q03	0.280	2Q04	0.286	2Q05	Cont.	Cont.	
MBC	RCP	Picatinny Arsenal, Picatinny, NJ		0.553	2Q03					Cont.	Cont.	
M1A1 Firepower	RCP	RAYTHEON/DRS Torrance, CA	14.494	3.811	2Q03					Cont.	Cont.	
M1A1 Mods	RCP	Booz-Allen Hamilton, McLean, VA	0.284	0.166	2Q03					Cont.	Cont.	
M1A1 Mods	MIPR	US Army CECOM, Ft Monmouth NJ		0.009	2Q03					Cont.	Cont.	
Nt. Vision Mod	WR/RCP	NSWC, Crane, IN	0.136	0.278	1Q03	0.685	1Q04	0.698	1Q05	Cont.	Cont.	
Nt. Vision Mod	MIPR	Night Vision Lab, Ft Belvoir, VA	0.493	0.094	1Q03	0.100	1Q04	0.105	1Q05	Cont.	Cont.	
TWS	MIPR	Night Vision Lab, Ft Belvoir, VA	0.242	0.020	1Q03	0.044	1Q04	0.044	1Q05	Cont.	Cont.	
IPHABD	MIPR	NATICK, Natick, MA		0.460	1Q03					Cont.	Cont.	
Underwater Recon (URC)	WR	CSS, Panama City, FL		0.320	2Q03					Cont.	Cont.	
Underwater Recon (URC)	RCP	CSS, Panama City, FL		0.243	2Q03					Cont.	Cont.	
TUV	WR	Redstone Arsenal, AL				0.064	1Q04	0.183	1Q05	Cont.	Cont.	
MCAGCC Range Inst	RCP	NSWC Corona Div, Corona, CA				2.925	2Q04					
MCAGCC Range Inst	TBD	TBD				2.900	3Q04					
Subtotal Product Dev			**17.974**	**9.153**		**7.259**		**1.583**		**Cont.**	**Cont.**	

Remarks:

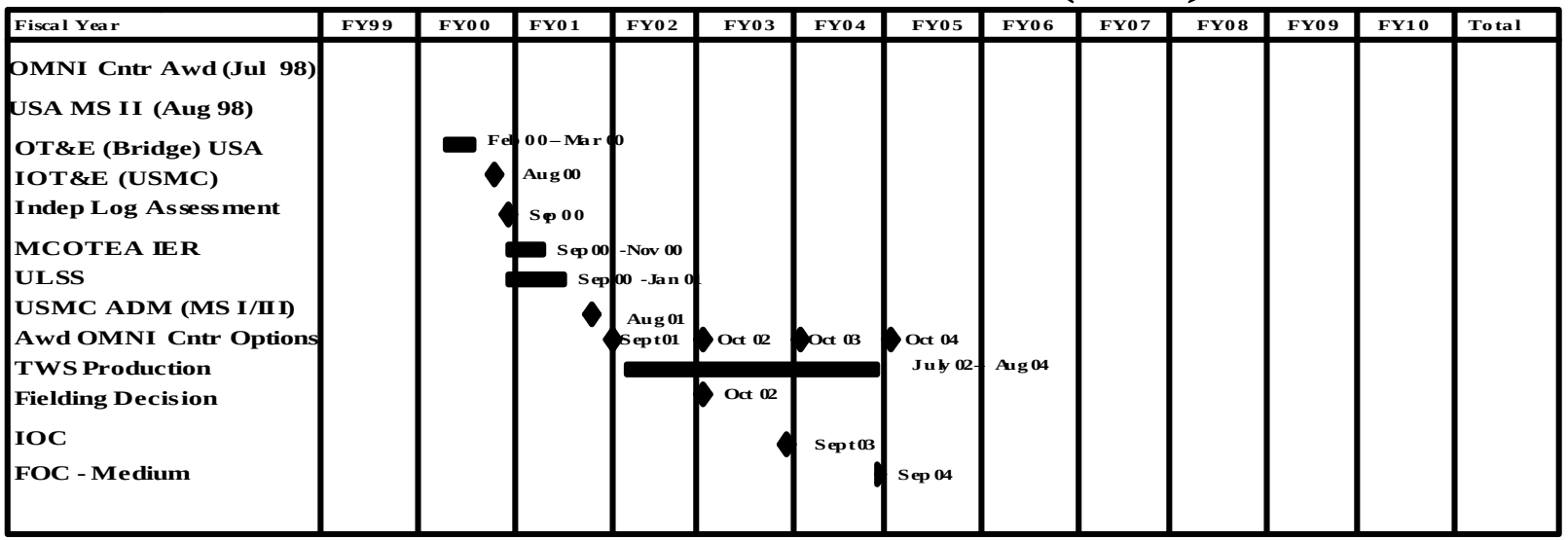
Exhibit R-3 Cost Analysis												DATE: February 2004
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /BA 7 Operational Sys Dev**		PROGRAM ELEMENT **0206623M Marine Corps Ground Combat/Supporting Arms**				PROJECT NUMBER AND NAME **C1901 Marine Corps Ground Weaponry PIP**						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 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	0.280	1Q03					Cont.	Cont.	
AN/GVS-5	RCP	BAEST, Stafford, VA	0.395	0.786	1Q03					Cont.	Cont.	
AN/GVS-5	MIPR	Marine Det, Ft Sill, OK	0.005	0.010	2Q03					Cont.	Cont.	
AN/GVS-5	WR	NSWC, Dahlgren, VA	0.095	0.200	2Q03					Cont.	Cont.	
Fam Artillery Munitions	WR/RCP	BAEST, Stafford, VA	0.188	0.039	1Q03					Cont.	Cont.	
Fam of Raid and Recon	RCP	Quantico, VA		0.302	1Q03					Cont.	Cont.	
Fam of Raid and Recon	WR	MCSC, Quantico, VA		0.031	1Q03					Cont.	Cont.	
Fire Supt Mods	WR/RCP	BAEST, Stafford, VA	1.349	0.191	1Q03					Cont.	Cont.	
Inf Wpns Mods	WR	MCSC, Quantico, VA	0.577	0.100	1Q03	0.135	1Q04	0.150	1Q05	Cont.	Cont.	
Inf Wpns Mods	RCP	BAEST, Stafford, VA	0.470	0.269	1Q03	0.352	1Q04	0.386	1Q05	Cont.	Cont.	
INF Wpns Mods	WR/RCP	TBD						0.013	1Q05	Cont.	Cont.	
ISURSS	RCP	BAEST, Stafford, VA	0.179	0.179	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	0.015	1Q03	0.020	1Q04	0.020	1Q05	Cont.	Cont.	
ISURSS	RCP	TBD				0.204	2Q04	0.082	2Q05	Cont.	Cont.	
ISURSS (Analysis)	RCP	TBD				0.050	2Q04	0.050	1Q05	Cont.	Cont.	
M1A1 Firepower	MIPR	GDLS, Warren, MI/ARDEC/NVL	0.972	0.049	2Q03					Cont.	Cont.	
M1A1 Firepower	WR	MCSC, Quantico, VA		0.334	1Q03					Cont.	Cont.	
M1A1 Mods	WR	MCSC, Quantico, VA	0.196	0.061	1Q03					Cont.	Cont.	
MBC	WR	MCSC, Quantico, VA	0.075	0.572	1Q03					Cont.	Cont.	
Nt Vision Mod	WR	MCSC, Quantico, VA	0.113	0.066	1Q03	0.126	1Q04	0.137	1Q05	Cont.	Cont.	
Nt Vision Mod	RCP	BAEST, Stafford, VA	0.297	0.000	2Q03	0.053	2Q04	0.140	2Q05	Cont.	Cont.	
TWS	RCP	BAEST, Stafford, VA	0.037			0.012	2Q04	0.012	2Q05	Cont.	Cont.	
Underwater Recon (URC)	WR	MCSC, Quantico, VA		0.073	2Q03					Cont.	Cont.	
MEFFV	RCP	BAEST, Stafford, VA	0.100	0.384	1Q03					0.000	0.484	
Subtotal Support			**5.277**	**3.941**		**1.271**		**1.309**		**Cont.**	**Cont.**	

Remarks:

Exhibit R-3 Cost Analysis						DATE: February 2004						
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /BA 7 Operational Sys Dev**		PROGRAM ELEMENT **0206623M Marine Corps Ground Combat/Supporting Arms**				PROJECT NUMBER AND NAME **C1901 Marine Corps Ground Weaponry PIP**						
Cost Categories (Tailor to WBS, or System/Iten 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
T&E		**SEE BELOW**										
AN/GVS-5 Replacement	WR	MCOTEA, Quantico, VA	0.095	0.145	2Q03					Cont.	Cont.	
AN/GVS-5 Replacement	RCP	Asbury Int., Sterling, VA	0.023	0.192	2Q03					Cont.	Cont.	
Fam Artillery Munitions	WR/RCP	NSWC, Crane, IN	0.182	0.222	1Q03					Cont.	Cont.	
Family Small Craft Mods	WR	NSWC, Crane, IN	0.323	0.020	1Q03					Cont.	Cont.	
Family Small Craft Mods	WR	Carderock, MD		0.044	1Q03					Cont.	Cont.	
Fire Spt Mods	WR	MCOTEA, Quantico, VA	0.025	0.063	2Q03					Cont.	Cont.	
Inf Wpn Mods	WR	MCOTEA, Quantico, VA	0.080	0.060	2Q03	0.067	2Q04	0.099	2Q05	Cont.	Cont.	
Inf Wpn Mods	WR	MCCDC, Quantico, VA	0.235	0.050	2Q03	0.050	2Q04	0.085	2Q05	Cont.	Cont.	
MBC	WR	NSWC, Crane, IN/ Ft Monmouth, NJ		0.412	2Q03					Cont.	Cont.	
M1A1 Firepower	MIPR	ARDEC, Rock Island, IL	0.095	0.025	2Q03					Cont.	Cont.	
Nt Vision Mods	WR	MCOTEA, Quantico, VA	0.100	0.025	2Q03	0.025	2Q04	0.025	2Q05	Cont.	Cont.	
Subtotal T&E			**1.158**	**1.258**		**0.142**		**0.209**		**Cont.**	**Cont.**	
Remarks:												
Cost Categories (Tailor to WBS, or System/Iten 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
MANAGEMENT		**SEE BELOW**										
AN/GVS-5 REPLACEMENT	RCP	BAEST, Stafford, VA	0.095	0.100	1Q03					Cont.	Cont.	
Fire Supt Mods	WR	MCSC, Quantico, VA	0.731	0.080	1Q03					Cont.	Cont.	
MBC	RCP	BAEST, Stafford, VA		0.260	1Q03					Cont.	Cont.	
M1A1 Firepower	RCP	BAEST, Stafford, VA	0.080	0.025	2Q03					Cont.	Cont.	
Underwater Recon (URC)	RCP	BAEST, Stafford, VA		0.395	2Q03					Cont.	Cont.	
MCAGCC Range Inst	WR	NSWC Corona Div, Corona, CA				0.125	2Q04					
Subtotal Management			**0.906**	**0.860**		**0.125**		**0.000**		**Cont.**	**Cont.**	
Remarks:												
Total Cost				**15.212**		**8.797**		**3.101**		**Cont.**	**Cont.**	

Exhibit R-4/4a Schedule Profile/Detail		DATE: February 2004
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)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl	Total Cost
(U) RDT&E,N	0.020	0.056	0.056	0.000	0.000	0.000	0.000	0.000	0.132
(U) PMC, BLI# 493000 Night Vision Equip	17.393	18.911	13.924	0.000	0.000	0.000	0.000	0.000	50.228

Exhibit R-4/4a Schedule Profile/Detail		DATE: February 2004
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 SCHEDULE DETAIL	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Fielding Decision	1st QTR						
IOC	4th QTR						
FOC		4th QTR					

EXHIBIT R-2a, RDT&E Project Justification						DATE: February 2004			
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 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	**2.117**	**2.603**	**2.655**	**2.608**	**2.651**	**2.734**	**2.790**	**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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.750**	**0.873**	**0.854**
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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.722**	**0.864**	**0.898**
RDT&E Articles Qty			

Explore clothing and individual equipment NDI categories.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.645**	**0.866**	**0.903**
RDT&E Articles Qty			

Explore ground weapons, communications and command and control equipment NDI categories.

(U) Total $	2.117	2.603	2.655

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2004
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)**

(U) Project Change Summary:	**FY2003**	**FY2004**	**FY2005**
(U) FY 2004 President's Budget:	**2.335**	**2.632**	**2.669**
(U) Adjustments from the President's Budget:			
(U) Congressional/OSD Program Reductions			
(U) Congressional Rescissions			
(U) Congressional Increases			
(U) Reprogrammings	0.150		
(U) SBIR/STTR Transfer			
(U) Minor Affordability Adjustment		-0.029	-0.014
(U) FY03 Update	-0.368		
(U) FY 2005 Presbud:	**2.117**	**2.603**	**2.655**

CHANGE SUMMARY EXPLANATION:

(U) Funding: See Above

(U) Schedule: Not Applicable.

(U) Technical: Not Applicable.

(U) C. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl	Total Cost
(U) PMC (BLI #221100) MEP	7.131	6.847	4.024	3.827	3.822	3.956	4.037	Continuing	Continuing

(U) Related RDT&E: PE 0604713A (Combat Feeding, Clothing and Equipment)

(U) D. ACQUISITION STRATEGY: NDI/COTS

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2004
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)**

(U) E. MAJOR PERFORMERS:

Performer	Effort	FY	Award Date	($000) Amt
USA, SBCCOM, Natick Mass	Product Development	2003	Dec-02	183
USA, SBCCOM, Natick Mass	DT&E	2003	Mar-03	290
NSWC, Crane Indiana	Product Development	2003	Dec-02	52
NSWC, Crane Indiana	DT&E	2003	Dec-02	249
NAWC, Pax River, Maryland	Product Development	2003	Dec-02	63
NAWC, Pax River, Maryland	DT&E	2003	Dec-02	276
USA, SBCCOM, Natick Mass	Product Development	2004	Dec-03	142
USA, SBCCOM, Natick Mass	DT&E	2004	Jan-04	299
USA, SBCCOM, Natick Mass	Product Development	2005	Dec-04	144
USA, SBCCOM, Natick Mass	DT&E	2005	Dec-04	308
NSWC, Crane Indiana	Product Development	2005	Dec-04	97
NSWC, Crane Indiana	DT&E	2005	Dec-04	100
NAWC, Pax River, Maryland	Product Development	2005	Dec-04	72
NAWC, Pax River, Maryland	DT&E	2005	Dec-04	373

Exhibit R-3 Cost Analysis			DATE: February 2004									
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /BA 7 Operational Sys Dev**		PROGRAM ELEMENT **Ground Combat Arms Systems**			PROJECT NUMBER AND NAME **C2086 Marine Enhanced Program (MEP)**							
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	WR	Lexington-Bluegrass, Lex, KY	2.499	0.049	1Q03	0.051	1Q04	0.053	1Q05	Cont.	Cont.	
Product Development	WR	NOC PacDiv, Fallbrook, CA	0.278	0.036	1Q03	0.038	1Q04	0.041	1Q05	Cont.	Cont.	
Product Development	WR/RCP	MCTSSA, CamPen, CA	0.631	0.006	1Q03	0.056	1Q04	0.056	1Q05	Cont.	Cont.	
Product Development	WR/RCP	NCTRF, Aberdeen, MD	0.533	0.081	1Q03	0.114	1Q04	0.115	1Q05	Cont.	Cont.	
Product Development	MIPR	NATICK, Natick, MA	1.559	0.183	1Q03	0.142	1Q04	0.144	1Q05	Cont.	Cont.	
Product Development	MIPR	ARL/APG Aberdeen, MD	0.284	0.010	2Q03	0.017	1Q04	0.017	1Q05	Cont.	Cont.	
Product Development	MIPR	NSMA, Washington DC	0.382	0.020	1Q03	0.020	1Q04	0.020	1Q05	Cont.	Cont.	
Product Development	MIPR	TACOM, Warren MI	0.100	0.012	2Q03	0.012	1Q04	0.013	1Q05	Cont.	Cont.	
Product Development	MIPR	2nd MARDIV, CamLej, NC	0.465	0.030	2Q03	0.036	1Q04	0.036	1Q05	Cont.	Cont.	
Product Development	WR	2nd MARDIV, CamLej, NC	0.080	0.005	1Q03	0.008	1Q04	0.008	1Q05	Cont.	Cont.	
Product Development	WR	NCCOSC, San Diego, CA	0.269	0.014	2Q03	0.020	1Q04	0.020	1Q05	Cont.	Cont.	
Product Development	WR	NCSS, Panama City, FL	1.935	0.030	1Q03	0.033	1Q04	0.034	1Q05	Cont.	Cont.	
Product Development	WR	NSWC, Crane, IN	2.169	0.050	1Q03	0.067	1Q04	0.097	1Q05	Cont.	Cont.	
Product Development	WR	NAWC Air Div, Pax River, MD	0.407	0.063	1Q03	0.071	1Q04	0.057	1Q05	Cont.	Cont.	
Product Development	WR	II MEF, CamLej, NC	0.100	0.007	1Q03	0.018	1Q04	0.019	1Q05	Cont.	Cont.	
Subtotal Product Dev			11.691	0.596		0.703		0.730		Cont.	Cont.	
Remarks:												

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
Integrated Logistics Support	WR	MCCDC, Quantico, VA	2.208	0.050	1Q03	0.098	1Q04	0.099	1Q05	Cont.	Cont.	
Integrated Logistics Support	Various	MISC	4.679	0.060	Various	0.070	Various	0.076	Various	Cont.	Cont.	
Subtotal Support			6.887	0.110		0.168		0.175				
Remarks:												

Exhibit R-3 Cost Analysis			DATE: February 2004									
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /BA 7 Operational Sys Dev**		PROGRAM ELEMENT **Ground Combat Arms Systems**			PROJECT NUMBER AND NAME **C2086 Marine Enhanced Program (MEP)**							
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 & Eval	WR/RCP	MCTSSA, CamPen, CA	1.920	0.055	1Q03	0.055	1Q04	0.057	1Q05	Cont.	Cont.	
Developmental Test & Eval	WR/RCP	NCTRF, Aberdeen, MD	0.879	0.020	1Q03	0.022	1Q04	0.023	1Q05	Cont.	Cont.	
Developmental Test & Eval	MIPR	NATICK, Natick, MA	3.070	0.290	2Q03	0.299	1Q04	0.308	1Q05	Cont.	Cont.	
Developmental Test & Eval	MIPR	ARL/APG Aberdeen, MD	0.862	0.180	2Q03	0.038	1Q04	0.040	1Q05	Cont.	Cont.	
Developmental Test & Eval	MIPR	PPSC, Phjladelphia, PA	0.079	0.026	3Q03	0.027	1Q04	0.028	1Q05	Cont.	Cont.	
Developmental Test & Eval	WR/RCP	MCAGCC 29 Palms, CA	0.389	0.019	2Q03	0.032	1Q04	0.033	1Q05	Cont.	Cont.	
Developmental Test & Eval	MIPR	NSMA, Washington DC	0.616	0.035	1Q03	0.038	1Q04	0.038	1Q05	Cont.	Cont.	
Developmental Test & Eval	MIPR	TACOM, Warren MI	0.272	0.033	1Q03	0.034	1Q04	0.034	1Q05	Cont.	Cont.	
Developmental Test & Eval	MIPR	NHRC, Crane, IN	2.270	0.100	2Q03	0.238	1Q04	0.239	1Q05	Cont.	Cont.	
Developmental Test & Eval	WR	2nd MARDIV, CamLej, NC	0.273	0.026	1Q03	0.027	1Q04	0.028	1Q05	Cont.	Cont.	
Developmental Test & Eval	WR	NCCOSC, San Diego, CA	0.792	0.045	2Q03	0.057	1Q04	0.057	1Q05	Cont.	Cont.	
Developmental Test & Eval	WR	NCSS, Panama City, FL	6.249	0.030	1Q03	0.028	1Q04	0.029	1Q05	Cont.	Cont.	
Developmental Test & Eval	WR	NSWC, Crane, IN	7.034	0.135	1Q03	0.247	1Q04	0.347	1Q05	Cont.	Cont.	
Developmental Test & Eval	WR	NAWC Air Div, Pax River, MD	1.357	0.276	1Q03	0.274	1Q04	0.373	1Q05	Cont.	Cont.	
Developmental Test & Eval	WR	NSWC, Indian Head, MD	0.596	0.021	3Q03	0.02	1Q04	0.021	1Q05	Cont.	Cont.	
Developmental Test & Eval	Various	MISC	9.431	0.120	Various	0.296	Various	0.095	Various	Cont.	Cont.	
Subtotal T&E			36.089	1.411		1.732		1.750		Cont.	Cont.	
Remarks: 36,089.000												
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 Management			0.000	0.000		0.000		0.000		Cont.	Cont.	
Remarks:												
Total Cost			54.667	2.117		2.603		2.655		Cont.	Cont.	

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2004		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /BA-7 Operational Sys Development**	PROGRAM ELEMENT NUMBER AND NAME **0206623M Marine Corps Ground Combat/Supporting Arms Systems**				PROJECT NUMBER AND NAME **C2503 FAMILY OF COMBAT EQUIPMENT SUPPORT AND SERVICES**				
COST ($ in Millions)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	**1.070**	**3.699**	**3.959**	**7.204**	**7.509**	**9.087**	**10.143**	**Cont**	**Cont**
RDT&E Articles Qty									

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

The Family of Combat Equipment Support and Services provides research, development, test and evaluation on low cost items with emphasis on non-developmental/commercially available items. 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.

(U) B. ACCOMPLISHMENTS/PLANNED PROGRAM:

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.835**	**1.027**	**1.058**
RDT&E Articles Qty			

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.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.845**	**1.361**
RDT&E Articles Qty			

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.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.116**	**0.718**	**0.533**
RDT&E Articles Qty			

Family of Field Medical Equipment: Testing of Commerical-off-the-shelf/Non-developmental item (COTS/NDI), medical equipment for the enroute care to evaluate functionality of the patient transportation.

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2004
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /BA-7 Operational Sys Development**	PROGRAM ELEMENT NUMBER AND NAME **0206623M Marine Corps Ground Combat/Supporting Arms Systems**	PROJECT NUMBER AND NAME **C2503 FAMILY OF COMBAT EQUIPMENT SUPPORT AND SERVICES**

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.119**	**0.436**	**0.434**
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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**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	1.070	3.699	3.959

(U) PROJECT CHANGE SUMMARY

	FY2003	**FY2004**	**FY2005**
(U) FY 2004 President's Budget:	**1.087**	**3.741**	**3.976**
(U) Adjustments from the President's Budget:			
(U) Congressional/OSD Program Reductions			
(U) Congressional Rescissions			
(U) Congressional Increases			
(U) Reprogrammings			
(U) SBIR/STTR Transfer	-0.022		
(U) Minor Affordability Adjustment		-0.042	-0.017
(U) FY03 Update	0.005		
(U) FY 2005 OSD Budget:	**1.070**	**3.699**	**3.959**

CHANGE SUMMARY EXPLANATION:

(U) Funding: See Above.

(U) Schedule: Not Applicable.

(U) Technical: Not Applicable.

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2004
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /BA-7 Operational Sys Development**	PROGRAM ELEMENT NUMBER AND NAME **0206623M Marine Corps Ground Combat/Supporting Arms Systems**	PROJECT NUMBER AND NAME **C2503 FAMILY OF COMBAT EQUIPMENT SUPPORT AND SERVICES**

(U) C. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	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	11.671	4.144	6.027	2.432	3.179	3.188	3.265	Cont	Cont

** FY 02/FY 03 Forward Resuscitative Surgery System, Enroute Care 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-04-FY05.

FAMILY OF FIELD MEDICAL EQUIPMENT: TBD base on current technology being pursued in FY04-FY05.

(U) SCHEDULE PROFILE: **Not Applicable.**

Exhibit R-3 Cost Analysis					DATE: February 2004							
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /BA 7 Operational Sys Development**			PROGRAM ELEMENT **0206623M Marine Corps Ground Combat/Supporting Arms Systems**				PROJECT NUMBER AND NAME **C2503 Initial Issue**					
Cost Categories (Tailor to WBS, or Sys/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
Development/Tech Insertion	MIPR	USASSCOM Natick, MA	2.967	0.527	1Q/03	0.553	1Q/04	0.717	1Q/05	Cont.	Cont.	
Development/Tech Insertion	FFP	TBD				1.397	2Q/04	1.246	2Q/05	Cont.	Cont.	
Subtotal Product Dev			2.967	0.527		1.950		1.963		Cont.	Cont.	
Remarks:												
Cost Categories (Tailor to WBS, or System/Iter 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
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Cost Categories (Tailor to WBS, or System/Iter 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
Operational Test & Eval	MIPR	USASSCOM Natick, MA	0.939	0.248	2Q/03	0.269	2Q/04	0.359	2Q/05	Cont.	Cont.	
Field User Evaluations	WR	FMF	0.625	0.142	2Q/03	1.300	2Q/04	1.452	2Q/05	0.000	3.519	
Subtotal T&E			1.564	0.390		1.569		1.811		Cont.	Cont.	
Remarks:												
Cost Categories (Tailor to WBS, or System/Iter 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
Contractor Eng Suppt	FFP/O	QUANTICO, VA	0.275	0.039	1Q/03	0.051	1Q/04	0.064	1Q/05	Cont.	Cont.	
Travel	WR	MCSC	0.102	0.041	1Q/03	0.046	1Q/04	0.038	1Q/05	Cont.	Cont.	
Labor	WR	MCSC		0.073	1Q/03	0.083	1Q/04	0.083	1Q/05	Cont.	Cont.	
Subtotal Management			0.377	0.153		0.180		0.185		Cont.	Cont.	
Remarks:												
Total Cost			4.908	1.070		3.699		3.959		Cont.	Cont.	

EXHIBIT R-2a, RDT&E Project Justification				DATE: February 2004					
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)**				
COST ($ in Millions)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	**9.891**	**6.860**	**3.026**	**0.016**	**0.000**	**0.000**	**0.000**	**0.000**	**19.793**
RDT&E Articles Qty									

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

HIMARS is a C-130 aircraft 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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**3.251**	**1.853**	**0.546**
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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**1.451**	**1.782**	**0.175**
RDT&E Articles Qty			

Develop Support Equipment, Army program office support, contractor provided logistics support

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**2.195**	**1.119**	**1.333**
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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**2.994**	**2.106**	**0.972**
RDT&E Articles Qty			

Program Management at Quantico, USMC Liason Office at Army Progam, USMC Test Unit at Ft Sill, and contractor support.

(U) Total $	9.891	6.860	3.026

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2004
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

	FY2003	FY2004	FY2005
(U) FY 2004 President's Budget:	**11.624**	**6.943**	**3.038**
(U) Adjustments from the President's Budget:			
(U) Congressional Program Reductions			
(U) Congressional Rescissions			
(U) Congressional Increases			
(U) Reprogrammings	-1.044		
(U) SBIR/STTR Transfer			
(U) Minor Affordability Adjustment	-0.689	-0.083	-0.012
(U) FY 2005 President's Budget:	**9.891**	**6.860**	**3.026**

CHANGE SUMMARY EXPLANATION:
(U) Funding: See Above.
(U) Schedule: Not Applicable.
(U) Technical: Not Applicable.

(U) C. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl	Total Cost
(U) PMC, 205001,EIFGSWS (HIMARS)	7.791	17.822	16.340	136.953	190.233	0.000	0.000	0.000	369.139
(U) PMC, 304001,HIMARS ROCKETS	0.000	0.000	1.325	32.731	54.967	69.381	54.640	CONT	CONT

(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.

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2004
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)**

(U) E. MAJOR PERFORMERS:

FY-03-Lockheed Martin Missile, Dallas, TX. Modifications to Launcher May 03

FY-03- Lockheed Martin Missile, Dallas, TX Systems Engineering Support for Development and testing Jan 03

FY-03-Lockheed Martin Missile, Dallas, TX Develop and provide Launcher training, Contract Award Dec 02

FY-03-Lockheed Martin Missile, Dallas, TX Contractor Logisitics Support, Contract Option Jun 03

FY-03-Oshkosh Truck Corporation (OTC), Oshkosh, WI Re-Supply System (RSS) Development, Testing and Support Oct 02

FY-03-OTC, Oshkosh, WI Modifications to RSS Jun 03

FY-04-Lockheed Martin Missile, Dallas, TX. Modifications to Launcher Apr 04

FY-04- Lockheed Martin Missile, Dallas, TX Systems Engineering Support for Development and testing OCT 03

FY-04-Lockheed Martin Missile, Dallas, TX Develop and provide Launcher training, Contract Award Oct 03

FY-04-Lockheed Martin Missile, Dallas, TX Contractor Logisitics Support, Contract Option Jun 04

FY-04-OTC, Oshkosh, WI Upgrade to RSS Production Representative articles with Field Service Support Oct 03

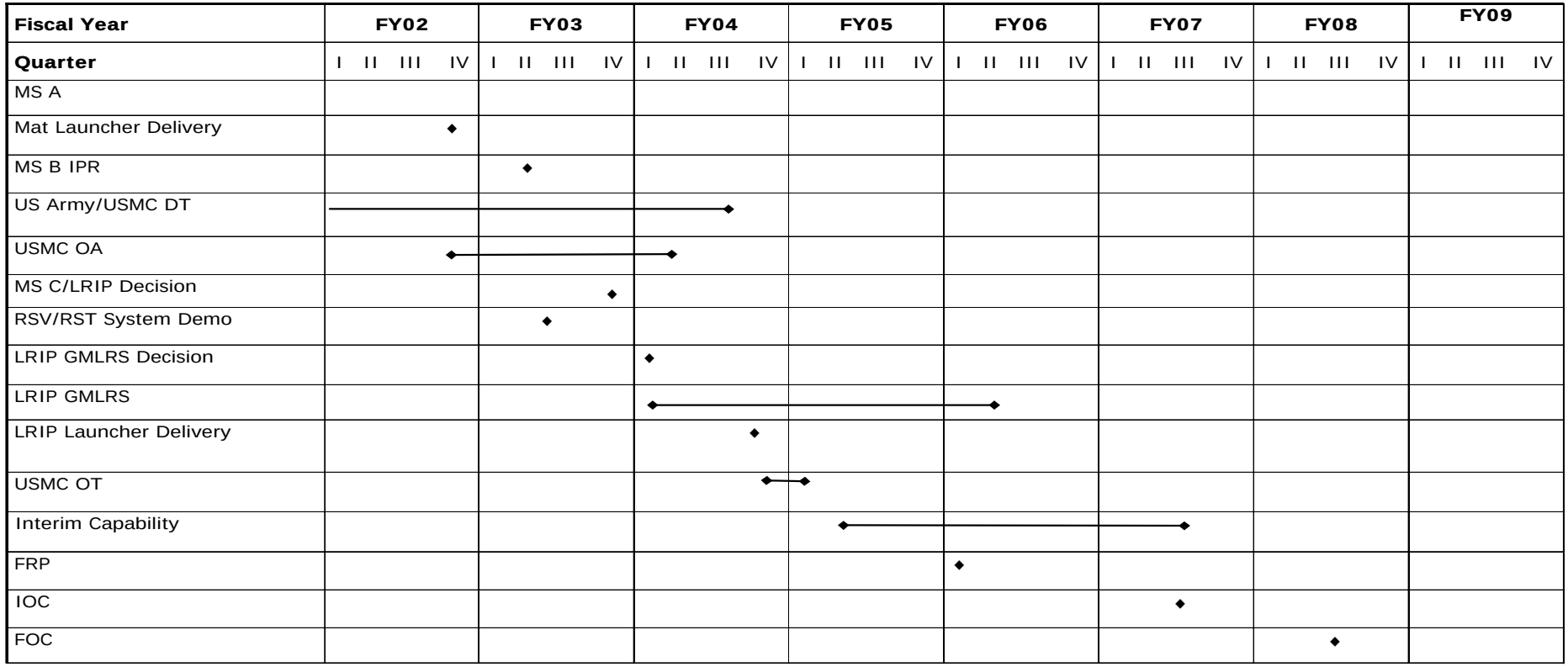
Exhibit R-3 Cost Analysis				DATE: February 2004								
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /BA-7 Operational Sys Development**		PROGRAM ELEMENT **0206623M Marine Corps Ground Combat/Supt Arms**			PROJECT NUMBER AND NAME **C2928 HIGH MOBILITY ARTILLERY ROCKET SYSTEM (HIMARS)**							
Cost Categories	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	SS/CPAF	Lockheed Martin, Dallas, TX	10.003	1.051	05/03	0.400	04/04			0.000	11.454	11.454
Primary Hardware Dev	FFP	TACOM, Warren, MI	0.000	0.100						0.000	0.100	0.100
Ancillary Hardware Dev	SS/CPAF	Lockheed Martin, Dallas, TX	0.300	0.362	06/03					0.000	0.662	0.662
Primary Hardware Dev	SS/CPAF	Oshkosh Truck Corp, Oshkosh,WI	2.054	0.810	10/02	0.600	01/03			0.000	3.464	3.464
Systems Engineering	WR	NSWC-Carderock,MD	0.028	0.062	10/02	0.030	10/03			0.000	0.120	0.120
Systems Engineering	WR	NSWC-Dahlgren, VA	0.311	0.271	10/02	0.503	10/03	0.146	10/04	0.016	1.247	1.247
Systems Engineering	WR	NSWC-Earle, NJ		0.250	03/03	0.150	10/03			0.000	0.400	0.400
Systems Engineering	FFP	John J. McMullen Assocs,Pittsb.,PA	0.129	0.037	04/03					0.000	0.166	0.166
Systems Engineering	CPAF	Lockheed Martin, Dallas, TX		0.270	01/03	0.080	04/03	0.400	10/04	0.000	0.750	0.750
Systems Engineering	WR	SPAWAR, Charleston, SC								0.000	0.000	0.000
Systems Engineering	FFP	NAVSEA, Wash., DC									0.000	0.000
Systems Engineering	MIPR	TARDEC, Detroit, MI		0.038	10/02					0.000	0.038	0.038
Systems Engineering	WR	NAVAIR, Point McGu, CA				0.090	10/03				0.090	0.090
Subtotal Product Dev			12.825	3.251		1.853		0.546		0.016	18.491	
Remarks:												

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	WR	MARCORSYSCOM,Quantico, VA	0.699	0.138	10/02	0.100	10/03			0.000	0.937	0.937
Dev Support Equip	WR	MCCDC, Quantico, VA	0.945							0.000	0.945	0.945
Dev Support Equip	WR	NSWC_Carderock, MD		0.104	10/02					0.000	0.104	0.104
Program Support	MIPR	US Army-MSL,Huntsville, AL	0.995	0.095	10/02	0.214	10/03			0.000	1.304	1.304
Launcher Training	FFP	Lockheed Martin, Dallas TX	1.261	0.078	12/02	0.163	10/03			0.000	1.502	1.502
Integ Logistics Support	FFP	BAE Systems, Stafford, VA	0.368	0.250	10/02	0.180	10/03	0.175	10/04	0.000	0.973	0.973
Integ Logistics Support	CPAF	Lockheed Martin, Dallas TX	1.606	0.786	06/03	0.991	05/03				3.383	3.383
Integ Logistics Support	WR	Logistics Base-Albany, GA	0.027			0.034	10/03				0.061	0.061
Integ Logistics Support	FFP	Oshkosh Truck Corp, Oshkosh,WI		0.000	10/02	0.100	10/03				0.100	0.100
Integ Logistics Support	FFP	SAIC, McLean, VA	0.105								0.105	0.105
											0.000	0.000
Subtotal Support			6.006	1.451		1.782		0.175		0.000	9.414	
Remarks:												

Exhibit R-3 Cost Analysis			DATE: **February 2004**									
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /BA-7 Operational Sys Development**		PROGRAM ELEMENT **0206623M Marine Corps Ground Combat/Supt Arms**			PROJECT NUMBER AND NAME **C2928 HIGH MOBILITY ARTILLERY ROCKET SYSTEM (HIMARS)**							
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	WR	NSWC-Dahlgren, VA	0.216	0.900	10/02					0.000	1.116	1.116
Dev Test & Eval	FFP	KTR Spt TMI, Wash., DC	0.190							0.000	0.190	0.190
Dev Test & Eval	WR	Redstone Tech Test Ctr,Huntsville,AL	0.043	0.170	10/02	0.080	10/03	0.100	10/04	0.000	0.393	0.393
Dev Test & Eval	FFP	AMRDEC, Huntsville, VA	0.546							0.000	0.546	0.546
Dev Test & Eval	WR	Logistics Base, Albany, GA	0.162								0.162	0.162
Dev Test & Eval	MIPR	TACOM, Detroit, MI	0.085								0.085	0.085
Dev Test & Eval	WR	Aberdeen Proving Grd,Aberdeen,MD	0.063	0.790	10/02	0.400	10/03	0.100	10/04	0.000	1.353	1.353
Dev Test & Eval	WR	NSWC-Carderock, MD		0.015	10/02	0.045	10/03			0.000	0.060	0.060
Dev Test & Eval	FFP	NATC, Silver Springs,NV		0.070	03/03					0.000	0.070	0.070
Dev Test & Eval	MIPR	DAC, McAlester, OK				0.142	12/03			0.000	0.142	0.142
Operational Test & Eval	WR	MCOTEA, Quantico, VA	0.136	0.180	10/02	0.402	10/03	0.550	10/04	0.000	1.268	1.268
Operational Test & Eval	MIPR	MARFORRES, New Orleans, LA	0.026	0.070	10/02	0.050	10/03	0.250	10/04	0.000	0.396	0.396
Operational Test & Eval	WR	OT Test Conduct, Ft. Sill, OK						0.333	10/04	0.000	0.333	0.333
Subtotal T&E			1.467	2.195		1.119		1.333		0.000	6.114	
Remarks:												

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
Program Mngmnt	WR	MCSC, Quantico, VA	0.801	0.193	10/02	0.075	10/03				1.069	1.069
Program Mngmnt	MIPR	US ARMY Huntsville, AL	0.166	0.876	10/02	0.648	10/03	0.300	10/04	0.000	1.990	1.990
Program Mngmnt	MIPR	TRNG Unit, Fort Sill, OK	0.050	0.179	10/02	0.163	10/03				0.392	0.392
Program Mngmnt	FFP	BAE Systems, Stafford, VA	1.127	1.200	10/02						2.327	2.327
Program Mngmnt	FFP	WBS-IMS	0.024	0.044		0.020	11/03				0.088	0.088
Program Mngmnt	FFP	MITRE-McLean,VA		0.120	11/02						0.120	0.120
Program Mngmnt	BPA	CEOSS		0.382	05/03	1.200	11/03	0.672	11/04		2.254	2.254
Subtotal Management			2.168	2.994		2.106		0.972		0.000	8.240	
Remarks:												
Total Cost				9.891		6.860		3.026		0.016	19.793	

Exhibit R-4/4a Schedule Profile/Detail		DATE: February 2004
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)**



Program Funding Summary	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl	Total Cost
(U) RDT&E,N, 026623M, HIMARS	9.891	6.860	3.026	0.016	0.000	0.000	0.000	0.000	19.793
(U) PMC, 205001, Expeditionary Indirect Fire Ground Support Weapons System (EIFGSWS) (HIMARS)	7.791	17.822	16.340	136.953	190.233	0.000	0.000	0.000	369.139
(U) PMC, 304001, HIMARS ROCKETS	0.000	0.000	1.325	32.731	54.967	69.381	54.640	CONT	213.044

Exhibit R-4/4a Schedule Profile/Detail		DATE: February 2004
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)**

HIMARS SCHEDULE DETAIL	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Maturation Launcher Delivery							
Milestone B IPR	2Q						
US Army/ USMC Developmental Testing	----------	----3Q					
USMC Operational Assesment	----------	-----2Q					
Milestone C/ Low Rate Initial Production Decision	4Q						
US Army/USMC Developmental Testing	2Q						
Resupply Vehicle/Resupply Trailer System Demonstration	2Q						
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	

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2004		
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 **C3098 Fire Support Systems**				
COST ($ in Millions)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	**0.000**	**11.099**	**12.201**	**10.199**	**14.008**	**14.134**	**9.077**	**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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.276**	**0.277**
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 ($266K) and FY03 ($261K) was provided under Project C1901 within this PE.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**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 and upgrade of MET processing computer for the Meteorological Measuring System (MMS) and develop Electronic Meteorological Theodolite (EMT) capability . Funding for this program in FY02 ($1.065M) and FY03 ($2.634M) was provided under Project C1901 within this PE.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**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.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**1.673**	**1.187**
RDT&E Articles Qty			

Mortar Ballistic Computer (MBC): Integration effort of Government-Furnished Equipment (GFE) software with CHS 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. Requirements review to determine evolution to future block upgrades. Funding for this program in FY03 ($1.845M) was provided under Project C1901 within this PE.

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2004
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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.944**	**0.000**
RDT&E Articles Qty			

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 ($823K) and FY03 ($1.638M) was provided under Project C1901 within this PE. Additionally, integration of a P3I Enhanced Target Acquisition and Location System (ETALS) will begin.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.000**	**0.360**
RDT&E Articles Qty			

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 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.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**3.554**	**0.000**
RDT&E Articles Qty			

Expeditionary Fire Support System (EFSS): Conduct Analysis of Alternatives (AOA) and related concept studies necessary to identify potential EFSS solutions that meet the capability of the Mission Need Statement (MNS). Evaluate the continuum of potential solutions that are identified. Program is planned for a three phase acquisition based on current and near term technologies.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.000**	**7.213**
RDT&E Articles Qty			

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. Evaluate Commercial Off the Shelf (COTS)/Government Off the Shelf (GOTS) system/components for consideration to meet Milestone C and subsequent IOC.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**2.777**	**0.278**
RDT&E Articles Qty			

Improved Position Azimuth Determination System (IPADS): Program support, contractor design effort, and the procurement of systems for developmental/operational testing and system integration. Development effort in support of the Milestone C decision.

(U) Total $	0.000	0.000	11.099	12.201

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2004
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:	**FY 2003**	**FY 2004**	**FY 2005**
(U) FY 2004 President's Budget:	**0.000**	**11.224**	**15.828**
(U) Adjustments from the President's Budget:			
(U) Congressional Program Reductions			
(U) Congressional Rescissions			
(U) Congressional Increases			
(U) Reprogrammings			-3.578
(U) SBIR/STTR Transfer			
(U) Minor Affordability Adjustment		-0.125	-0.049
(U) FY 2005 President's Budget:	**0.000**	**11.099**	**12.201**

CHANGE SUMMARY EXPLANATION:
(U) Funding: See above.
(U) Schedule: Not Applicable.
(U) Technical: Not Applicable.

(U) C. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl	Total Cost
PMC BLI#493000 Night Vision Eq (AEROS)	0.000	0.000	4.960	19.957	25.584	0.360	0.000	0.000	50.861
PMC BLI# 473300 Fire Supp Sys (IPADS)	0.000	0.000	6.647	0.308	0.000	0.000	0.000	0.000	6.955
PMC BLI# 473300 FSS (Mortar Ballistic Computer)	0.000	0.000	3.568	1.885	0.000	0.000	0.000	0.000	5.453
PMC BLI# 206400 Expeditionary Fire Support Sys	0.000	0.000	0.000	2.710	6.346	6.361	0.000	0.000	15.417
PMC BLI# 220900 Mod Kits IWS (Fire Supp Mod Line)	0.929	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.929
PMC BLI# 206300 Mod Kits AFS (Fire Supp Mod Line)	0.000	2.073	2.465	2.596	4.236	4.344	4.459	Continuing	Continuing
PMC BLI#646800 First Dest Transp (AEROS)	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)	0.952	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.952
PMC BLI# 206300 Mod Kits AFS (PIAFS)	0.000	0.000	2.403	0.409	0.199	0.000	0.000	0.000	3.011

(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:

Exhibit R-3 Cost Analysis											DATE: February 2004		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-7 Operational Sys Dev		PROGRAM ELEMENT 0206623M Marine Corps Ground Combat/Supporting Arms Systems				PROJECT NUMBER AND NAME C3098 Fire Support Systems							
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		**SEE BELOW**										
AN/GVS-5 Replacement	RCP	MKI Woodbridge, VA	0.000			0.050	1Q04			Cont.	Cont.	
EFSS	RCP	TBD	0.000					1.909	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	VAR	VARIOUS				1.674	TBD			Cont.	Cont.	
MBC	VAR	VARIOUS	0.000			0.250		0.200		Cont.	Cont.	
Subtotal Product Dev			**0.403**	**0.000**		**2.574**		**4.052**		**Cont.**	Cont.	

Remarks:

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**
PROGRAM SUPPORT		**SEE BELOW**								**Cont.**	**Cont.**	
AN/GVS-5 Replacement	WR	MCSC, Quantico, VA	0.000			0.244	2Q04			Cont.	Cont.	
AN/GVS-5 Replacement	RCP	CEOSS	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			1.554	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	VAR	VARIOUS				0.157	2Q04			Cont.	Cont.	
MBC	VAR	VARIOUS	0.000			0.676	TBD	0.700	TBD	Cont.	Cont.	
Subtotal Support			**1.046**	**0.000**		**3.711**		**3.450**		**Cont.**	**Cont.**	

Remarks:

Exhibit R-3 Cost Analysis			DATE: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-7 Operational Sys Dev	PROGRAM ELEMENT 0206623M Marine Corps Ground Combat/Supporting Arms Systems	PROJECT NUMBER AND NAME C3098 Fire Support Systems	

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
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	0.217	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	VARIOUS				0.151	2Q04			Cont.	Cont.	
MBC	WR	VARIOUS	0.000			0.497	TBD	0.287	TBD	Cont.	Cont.	
Subtotal T&E			**0.025**	**0.000**		**1.225**		**1.955**		**Cont.**	**Cont.**	

Remarks:

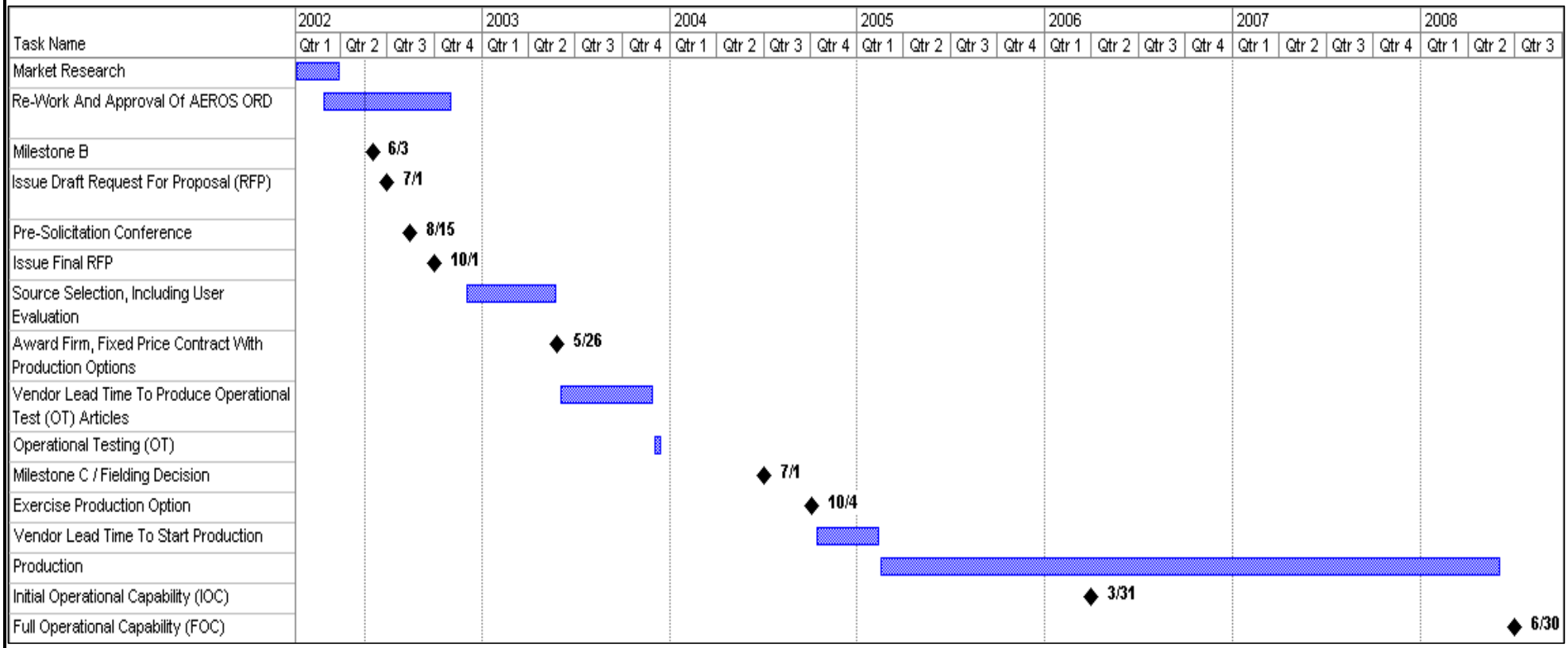
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
MANAGEMENT		**SEE BELOW**								Cont.	Cont.	
EFSS	VAR	TBD				2.000	TBD	0.900	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			Cont.	Cont.	
Subtotal Management			**0.582**	**0.000**		**3.589**		**2.744**		**Cont.**	**Cont.**	

Remarks:

Total Cost			**2.056**	**0.000**		**11.099**		**12.201**		**Cont.**	**Cont.**	

Exhibit R-4/4a Schedule Profile/Detail		DATE: February 2004
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /BA-7 Operational Sys Dev**	PROGRAM ELEMENT **0206623M Marine Corps Ground Combat/Supporting Arms Systems**	PROJECT NUMBER AND NAME **C3098 Fire Support Systems**

AEROS PROGRAM
AN/GVS-5 Replacement



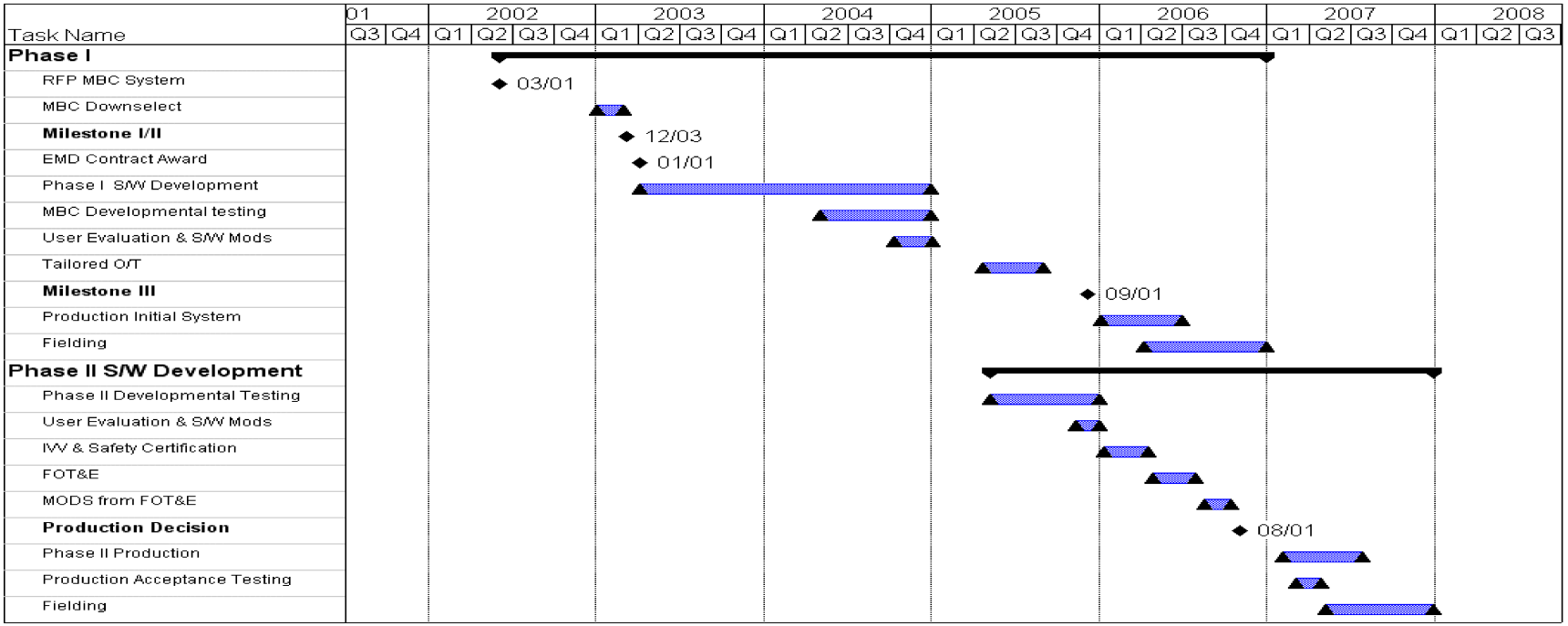
Program Funding Summary	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl	Total Cost
(APPN, BLI #, NOMEN)									
(U) RDT&E,N (C1901)	1.999	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.999
(U) RDT&E,N (C3098)	0.000	0.944	0.360	0.181	0.000	0.000	0.000	0.000	1.485
(U) PMC, BLI# 493000 Nt Vision Eq	0.000	0.000	4.960	19.957	25.584	0.360	0.000	0.000	50.861
(U) PMC, BLI# 646800 1st Destination Transport.	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	0.354	0.922	0.937	0.000	0.000	0.000	2.213

Exhibit R-4/4a Schedule Profile/Detail		DATE: February 2004
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /BA-7 Operational Sys Dev**	PROGRAM ELEMENT **0206623M Marine Corps Ground Combat/Supporting Arms Systems**	PROJECT NUMBER AND NAME **C3098 Fire Support Systems**

AEROS SCHEDULE DETAIL	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Market Research							
Re-Work and Approval of AEROS ORD							
Milestone B							
Issue Draft Request for Proposal (RFP)							
Pre-Solicitation Conference							
Issue Final RFP	1Q						
Source Selection, Including User Evaluation	3Q						
Award Firm Fixed Price Contract with Production Options	4Q						
Vendor Lead Time to Produce Operational Test (OT) Articles	4Q						
Operational Testing (OT)		2Q					
Milestone C / Fielding Decision		3Q					
Exercise Production Option			1Q				
Vendor Lead Time to Start Production			1Q				
Production			1Q				
Initial Operational Capability (IOC)				4Q			
Full Operational Capability (FOC)						3Q	

Exhibit R-4/4a Schedule Profile/Detail		DATE: February 2004
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME
RDT&E, N /BA-7 Operational Sys Dev	0206623M Marine Corps Ground Combat/Supporting Arms Systems	C3098 Fire Support Systems

MORTAR BALLISTIC COMPUTER



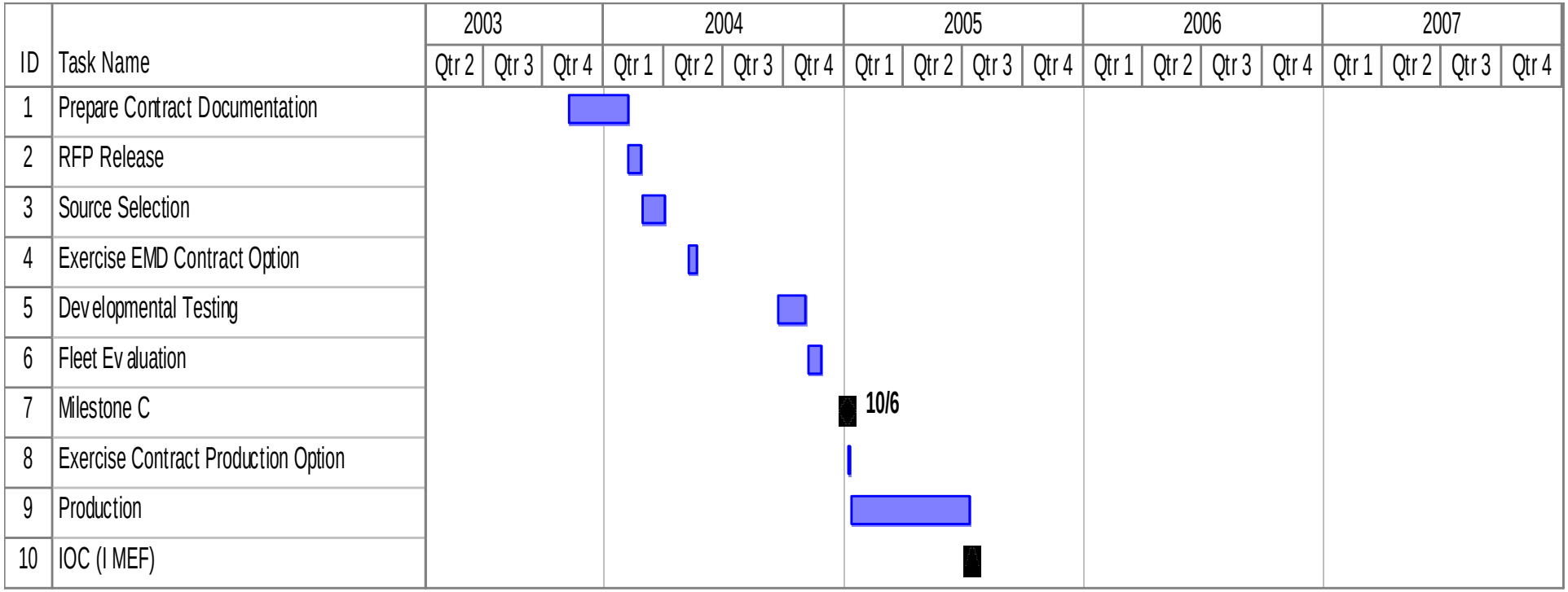
Program Funding Summary (APPN, BLI #, NOMEN)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl	Total Cost
(U) RDT&E,N (C1901)	1.797	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.797
(U) RDT&E,N (C3098)	0.000	1.673	1.187	0.713	0.308	0.000	0.000	0.000	3.881
(U) PMC BLI# 473300 Fire Support Systems	0.000	0.000	3.568	1.885	0.000	0.000	0.000	0.000	5.453

Exhibit R-4/4a Schedule Profile/Detail		DATE: February 2004
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /BA-7 Operational Sys Dev**	PROGRAM ELEMENT **0206623M Marine Corps Ground Combat/Supporting Arms Systems**	PROJECT NUMBER AND NAME **C3098 Fire Support Systems**

MBC SCHEDULE DETAIL	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Phase I							
RFP Mortar Ballistic Computer (MBC)System							
MBC Down Select							
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)		3Q					
Milestone III			1Q				
Production Initial System			1Q				
Fielding			3Q				
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		

Exhibit R-4/4a Schedule Profile/Detail		DATE: February 2004
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



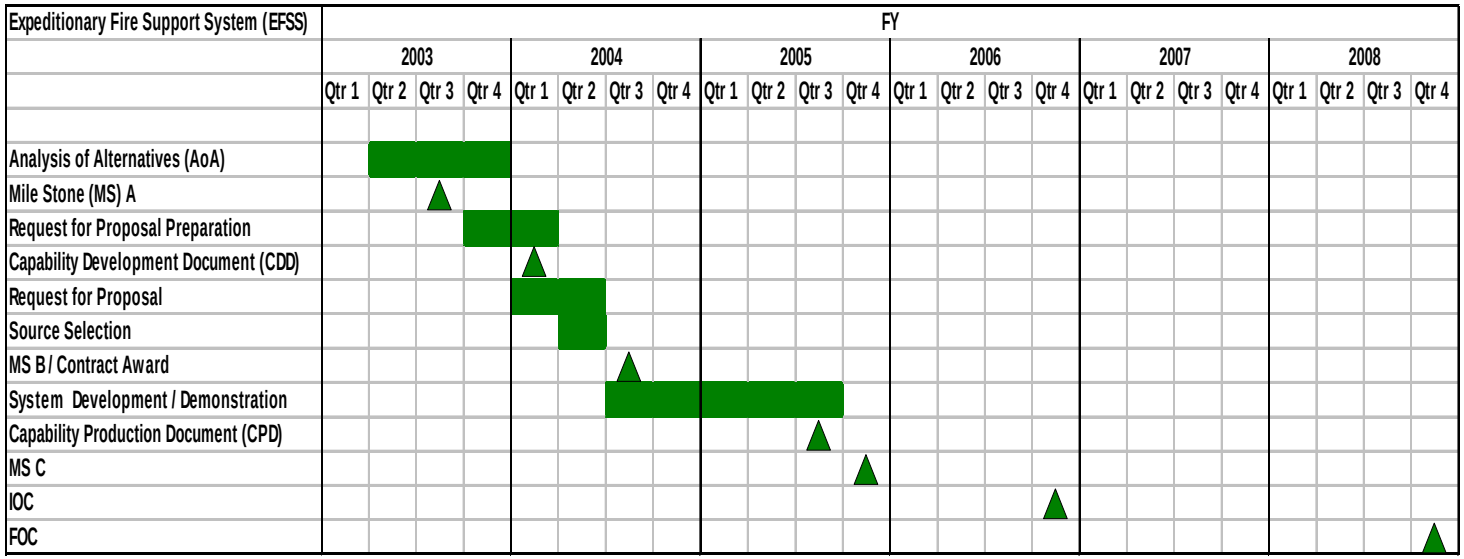
Program Funding Summary (APPN, BLI #, NOMEN)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl	Total Cost
(U) RDT&E,N (C3098)	0.000	2.777	0.278	0.011	0.000	0.000	0.000	0.000	3.066
(U) PMC BLI# 473300	0.000	0.000	6.647	0.308	0.000	0.000	0.000	0.000	6.955
(U) PMC Spares BLI# 700000 IPADS	0.000	0.000	0.143	0.516	0.000	0.000	0.000	0.000	0.659

Exhibit R-4/4a Schedule Profile/Detail		DATE: February 2004
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /BA-7 Operational Sys Dev**	PROGRAM ELEMENT **0206623M Marine Corps Ground Combat/Supporting Arms Systems**	PROJECT NUMBER AND NAME **C3098 Fire Support Systems**

IPADS SCHEDULE DETAIL	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Prepare Contract Documentation							
RFP Release	1Q						
Source Selection	3Q						
Exercise EMD Contract Option							
Developmental Testing/OT		1Q					
Fleet Evaluation		4Q					
Milestone C			1Q				
Exercise Contract Production Option							
Production			1Q				
Initial Operational Capability (I MEF)			3Q				

Exhibit R-4/4a Schedule Profile/Detail		DATE: February 2004
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME
RDT&E, N /BA-7 Operational Sys Dev	**0206623M Marine Corps Ground Combat/Supporting Arms Systems**	**C3098 Fire Support Systems**

Expeditionary Fire Support System



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 (C3098)	0.000	0.000	3.554	7.213	6.488	11.221	11.596	6.521	Continuing	Continuing
(U) PMC BLI# 206400 EFSS	0.000	0.000	0.000	0.000	2.710	6.346	6.361	0.000	0.000	15.417

Exhibit R-4/4a Schedule Profile/Detail		DATE: February 2004
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /BA-7 Operational Sys Dev**	PROGRAM ELEMENT **0206623M Marine Corps Ground Combat/Supporting Arms Systems**	PROJECT NUMBER AND NAME **C3098 Fire Support Systems**

EFSS SCHEDULE DETAIL	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Milestone A		1Q					
Milestone B			1Q				
Milestone C (Phase 1)				1Q			
Milestone C (Phase 2)							1Q
Initial Operational Capability (Phase 1)						2Q	
Full Operational Capability (Phase 1)							4Q

EXHIBIT R-2a, RDT&E Project Justification						DATE: February 2004			
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 **C4002 Family of Raid and Reconnaissance Equipment**				
COST ($ in Millions)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	**0.000**	**2.545**	**3.440**	**1.225**	**0.552**	**0.472**	**0.486**	**Cont**	**Cont**
RDT&E Articles Qty									

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

The Family of Raid and Reconnaissance Equipment program supports the research, development, and procurement actions for multiple airborne/parachuting and specialized reconnaissance related programs. This line focuses on immediate capability enhancements to numerous insertion and personnel equipment shortfalls currently existing in reconnaissance units throughout the operating forces. This will include improving airborne capability equipment and items for direct action missions that use this specialized raid equipment.

(U) B. ACCOMPLISHMENTS/PLANNED PROGRAM:

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.395**	**0.360**
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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.244**	**0.249**
RDT&E Articles Qty			

Family of Small Craft: Conduct engineering analysis and exploration of enhancements for modifications of the Family of Small Craft programs. The Small Unit Riverine Craft (SURC), Small Unit Riverine Craft Escort (SURC-E), Raid Open Water Safety Craft (ROWSC), Combat Rubber Reconnaissance Craft (CRRC), Non-Gasoline Burning Outboard Engines (NBOE), and other small craft items will be supported in the future as new craft and engines are fielding. Funding for this program in FY03 is provided under Project C1901 within this PE.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**1.906**	**2.831**
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 2.545 3.440

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2004
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 Family of Raid and Reconnaissance Equipment**

(U) PROJECT CHANGE SUMMARY:	**FY 2003**	**FY 2004**	**FY 2005**
(U) FY 2004 President's Budget:	**0.000**	**2.574**	**3.453**
(U) Adjustments from the President's Budget:			
(U) Congressional Program Reductions			
(U) Congressional Rescissions			
(U) Congressional Increases			
(U) Reprogrammings			
(U) Small Business Innovation Research Transfer			
(U) Minor Affordability Adjustment		-0.029	-0.013
(U) FY 2005 President's Budget:	**0.000**	**2.545**	**3.440**

CHANGE SUMMARY EXPLANATION:
(U) Funding: Not Applicable.
(U) Schedule: Not Applicable.
(U) Technical: Not Applicable.

(U) C. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl	Total Cost
PMC BLI #643400 Amphibious Raid Equipment	18.625	21.247	15.771	16.105	6.658	3.429	3.497	0.000	85.332

(U) Related RDT&E: Not Applicable.

(U) D. ACQUISITION STRATEGY:
The acquisition strategy consists of market surveys to identify off-the-shelf/non-developmental item baseline competitors. This will be followed by a release of desired capabilities/specifications and establishment of the trade space parameters. Project dependent, expect to down-select to best value. Follow-on testing/evaluations as required to be conducted.

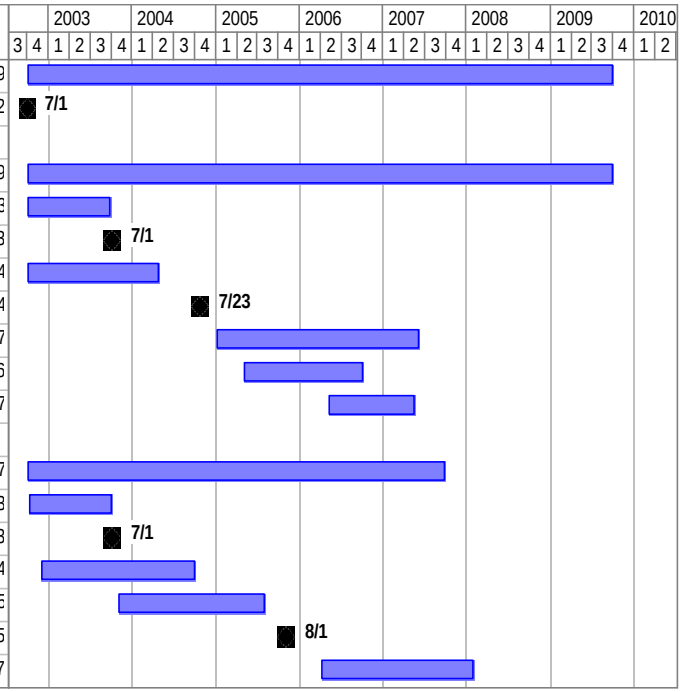
(U) E. MAJOR PERFORMERS:

Oct 03, Oct 04	Panama City, FL	Coastal Systems Station (CSS), system engineering in support of underwater reconnaissance
Nov 03, Nov 04	Natick, MA	Natick Labs, system engineering
Dec 03, Dec 04	Quantico, VA	Hardware Development

Exhibit R-3 Cost Analysis											DATE: February 2004		
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 **C4002 Family of Raid and Reconnaissance Equipment**								
Cost Categories (Tailor to WBS, or Sys/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
Hardware development	RCP	MARCORSYSCOM, Quantico, VA				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		.		0.407	11/03	0.419	11/04	Cont.	Cont.	
Subtotal Product Development			0.000	0.000		1.945		2.748		Cont.	Cont.	
Remarks: Funding for this program in FY03 is provided under Project C1901 within this PE.												
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 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	0.199	10/04	Cont.	Cont.	
Subtotal Support			0.000	0.000		0.200		0.199		Cont.	Cont.	
Remarks: Funding for this program in FY03 is provided under Project C1901 within this PE.												
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 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	WR	NSWC Carderock Div, Bethesda, MD				0.150	12/03	0.150	12/04	Cont.	Cont.	
Operational T&E	WR	MCOTEA, Quantico, VA				0.100	11/03	0.100	12/04	Cont.	Cont.	
Subtotal T&E			0.000	0.000		0.250		0.250		Cont.	Cont.	
Remarks: Funding for this program in FY03 is provided under Project C1901 within this PE.												
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 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	RCP	MARCORSYSCOM, Quantico, VA				0.150	12/03	0.243	12/04	Cont.	Cont.	
Subtotal Management				0.000		0.150		0.243		Cont.	Cont.	
Remarks: Funding for this program in FY03 is provided under Project C1901 within this PE.												
Total Cost			0.000	0.000		2.545		3.440		Cont.	Cont.	

Exhibit R-4/4a Schedule Profile/Detail		DATE: February 2004
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME
RDT&E, N /BA-7 Operational Sys Dev	0206623M Marine Corps Ground Combat/Supporting Arms Systems	C4002 Family of Raid and Reconnaissance Equipment

ID	Task Name	Duration	Start	Finish
1	**Underwater Reconnaissance Capability**	1827 days	Mon 7/1/02	Tue 6/30/09
2	Program Initiation	0 days	Mon 7/1/02	Mon 7/1/02
3				
4	**Diver Propulsion Device**	1827 days	Mon 7/1/02	Tue 6/30/09
5	Pre Milestone B	260 days	Mon 7/1/02	Fri 6/27/03
6	Milestone B	0 days	Tue 7/1/03	Tue 7/1/03
7	R&D	410 days	Mon 7/1/02	Fri 1/23/04
8	Milestone C Decision	0 days	Fri 7/23/04	Fri 7/23/04
9	PMC	636 days	Fri 10/1/04	Fri 3/9/07
10	Production of 62 units	370 days	Tue 2/1/05	Mon 7/3/06
11	Production of 62 units	273 days	Wed 2/1/06	Fri 2/16/07
12				
13	**Tactical Hydrographic Survey Equipment**	1305 days	Mon 7/1/02	Fri 6/29/07
14	Pre Milestone B	260 days	Tue 7/2/02	Mon 6/30/03
15	Milestone B	0 days	Tue 7/1/03	Tue 7/1/03
16	R&D	480 days	Thu 8/29/02	Wed 6/30/04
17	Operational Testing	456 days	Fri 8/1/03	Fri 4/29/05
18	Milestone C Decision	0 days	Mon 8/1/05	Mon 8/1/05
19	Production	477 days	Mon 1/2/06	Tue 10/30/07



Program Funding Summary (APPN, BLI #, NOMEN)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl	Total Cost
(U) RDT&E,N C4002 URC	0.000	1.906	2.831	0.723	0.055	0	0	0.000	5.515
(U) PMC, BLI# 643400 URC	0.000	0.000	4.790	7.692	3.211	0	0	0.000	15.693

Exhibit R-4/4a Schedule Profile/Detail			DATE: February 2004
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME	
RDT&E, N /BA-7 Operational Sys Dev	0206623M Marine Corps Ground Combat/Supporting Arms Systems	C4002 Family of Raid and Reconnaissance Equipment	

URC SCHEDULE DETAIL	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Diver Propulsion Device							
Milestone B	4Q						
Milestone C		4Q					
Tactical Hydrographic Survey Equipment							
Milestone B	4Q						
OT	4Q	1Q-4Q	1Q-3Q				
Milestone C			4Q				

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification					DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /BA-7 Operational Sys Dev**		PROGRAM ELEMENT (PE) NAME AND NO. **0206624M Marine Corps Combat Services Support**							
COST ($ in Millions)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Total PE Cost	**16.682**	**20.493**	**10.731**	**9.380**	**6.636**	**3.528**	**3.315**	**Cont**	**Cont**
C0076 Medium Tactical Vehicle Replacement (MTVR)	**0.727**	**1.313**	**2.460**	**0.702**	**0.000**	**0.000**	**0.000**	**0.000**	**5.202**
C0201 Logistical Vehicle System Replacement (LVSR)	**4.771**	**8.872**	**4.767**	**6.201**	**4.415**	**0.397**	**0.173**	**0.000**	**29.596**
C2316 Combat Service Support Engineering Equipment	**8.708**	**7.660**	**1.984**	**0.513**	**0.531**	**0.543**	**0.553**	**0.000**	**20.492**
C2509 Motor Transport Modernization	**2.169**	**0.439**	**0.445**	**0.450**	**0.551**	**0.570**	**0.582**	**Cont**	**Cont**
C2929 Testing Measuring Diagnostic Equip (TMDE) & SE	**0.307**	**2.209**	**1.075**	**1.514**	**1.139**	**2.018**	**2.007**	**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

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /BA-7 Operational Sys Dev**		PROGRAM ELEMENT (PE) NAME AND NO. **0206624M Marine Corps Combat Services Support**

B. PROGRAM CHANGE SUMMARY

	FY2003	FY2004	FY2005
(U) FY 2004 President's Budget:	20.516	19.723	10.132
(U) Adjustments from the President's Budget:			
(U) Congressional/OSD Program Reductions			
(U) Congressional Rescissions			
(U) Congressional Increases			
(U) Reprogrammings	-3.411	1.000	0.636
(U) SBIR/STTR Transfer	-0.413	-0.086	-0.006
(U) Minor Affordability Adjustment	-0.010	-0.144	-0.031
(U) FY 2005 President's Budget:	16.682	20.493	10.731

CHANGE SUMMARY EXPLANATION:

(U) Funding: See Above.

(U) Schedule: Not Applicable.

(U) Technical: Not Applicable.

EXHIBIT R-2a, RDT&E Project Justification					DATE: Februrary 2004				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /BA-7 Operational Sys Dev**	PROGRAM ELEMENT NUMBER AND NAME **0206624M Marine Corps Combat Services Support**				PROJECT NUMBER AND NAME **C0076 Medium Tactical Vehicle Replacement (MTVR)**				
COST ($ in Millions)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY2008	FY2009	Cost to Complete	Total Program
Project Cost	**0.727**	**1.313**	**2.460**	**0.702**	**0.000**	**0.000**	**0.000**	**0.000**	**5.202**
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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.727**	**0.000**	**0.000**
RDT&E Articles Qty			

MTVR: Variant prototype development and Operational Testing.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.186**	**0.000**
RDT&E Articles Qty			

FTT: Development of tactical trailers.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**1.127**	**2.460**
RDT&E Articles Qty		**18**	

MTVR TRAILER: Development of the MTVR Trailers and Developmental Testing.

(U) Total $	**0.727**	**1.313**	**2.460**

EXHIBIT R-2a, RDT&E Project Justification		DATE: Februrary 2004
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)

	FY2003	FY 2004	FY 2005
(U) FY2004 President's Budget	**0.967**	**1.327**	**1.966**
(U) Adjustments from the FY 2004 President's Budget:			
(U) Congressional/OSD Program Reductions			
(U) Congressional Rescissions			
(U) Congressional Increases			
(U) Reprogrammings	-0.215		0.500
(U) SBIR/STTR Transfer	-0.025		
(U) Minor Affordability Adjustment		-0.014	-0.006
(U) FY 2005 President's Budget:	**0.727**	**1.313**	**2.460**

CHANGE SUMMARY EXPLANATION:

(U) Funding: Changes in FY 03 are due to SBIR reduction of $25K and Marine Corps realignment of funds for $215K. Changes in FY04 are due to minor affordability adjustment. Changes in FY05 are due to $500K Marine Corps realignment of funds and $6K minor affordability

(U) Schedule: Not Applicable.

(U) Technical: Not Applicable.

(U) C. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl	Total Cost
(U) PMC Line (BLI# 509700) Fam of Tac Trlrs	0.000	0.000	0.942	2.781	3.332	3.560	3.312	Continuing	Continuing
(U) PMC Line (BLI# 509700) MTVR Trailers	0.000	0.000	0.000	9.779	21.623	26.190	17.812	Continuing	Continuing
(U) PMC Line (BLI# 508800) MTVR	328.313	4.577	0.000	0.000	0.000	0.000	0.000	0.000	332.890

(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:

MTVR Vehicles: The MTVR production program is a multi-year, fixed price contract with an economic price adjustment. The program has both an Acquisition Strategy and an 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).

EXHIBIT R-2a, RDT&E Project Justification		DATE: Februrary 2004
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)**

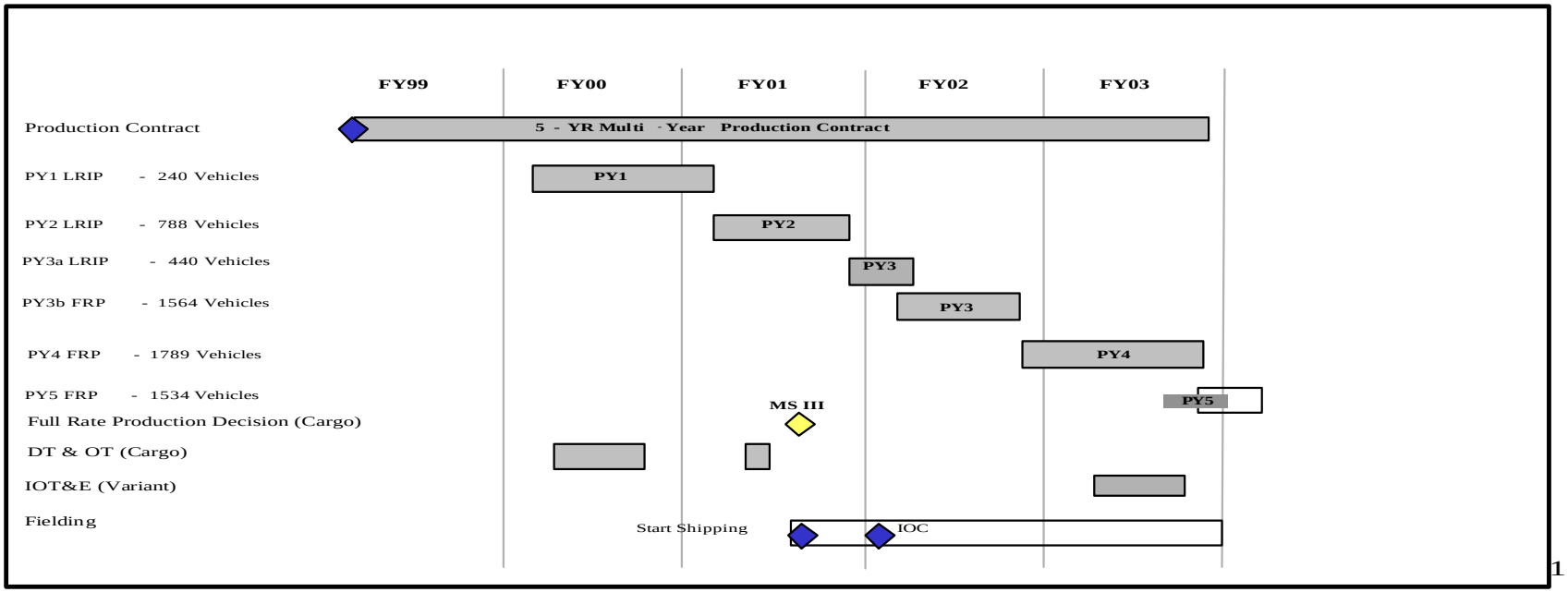
(U) E. MAJOR PERFORMERS:

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 - TBD (Competitive contract)

Exhibit R-3 Cost Analysis							DATE: February 2004					
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /BA 7 Operational Sys Dev**		PROGRAM ELEMENT **0206624M Marine Corps Combat Servic**			PROJECT NUMBER AND NAME **C0076 Medium Tactical Veh Replacement (MTVR)**							
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	RCP	MCSC, Quantico, VA	0.164			0.950	12/03	1.400	12/04	0.123	2.637	2.637
Product development	RCP	NSWC, Carderock, MD	0.355			0.187	12/03			0.000	0.542	0.542
Subtotal Product Dev			0.519			1.137		1.400		0.123	3.179	
Remarks:												
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 Support												
Remarks:												
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 & Eval	MIPR	Aberdeen Test Center, MD	0.106							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	0.000	0.249	12/02					0.000	0.249	0.249
Developmental Test & Eval	WR/RCP	MCOTEA, Quantico, VA	0.000	0.478	06/03					0.000	0.478	0.478
Operational Test & Eval	WR/RCP	MCOTEA, Quantico, VA	0.000							0.486	0.486	0.486
Subtotal T&E			0.106	0.727				0.958		0.486	2.277	
Remarks:												
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
Program Mngmnt	WR	MCSC Quantico, VA	1.159			0.117	12/03	0.102	10/04	0.093	1.471	1.471
Program Mngmnt Suppt	RCP	MCSC Quantico, VA	0.000			0.059	12/03			0.000	0.059	0.059
Subtotal Management			1.159			0.176		0.102		0.093	1.530	
Remarks:												
Total Cost				0.727		1.313		2.460		0.702	5.202	

Exhibit R-4/4a Schedule Profile/Detail		DATE: February 2004
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



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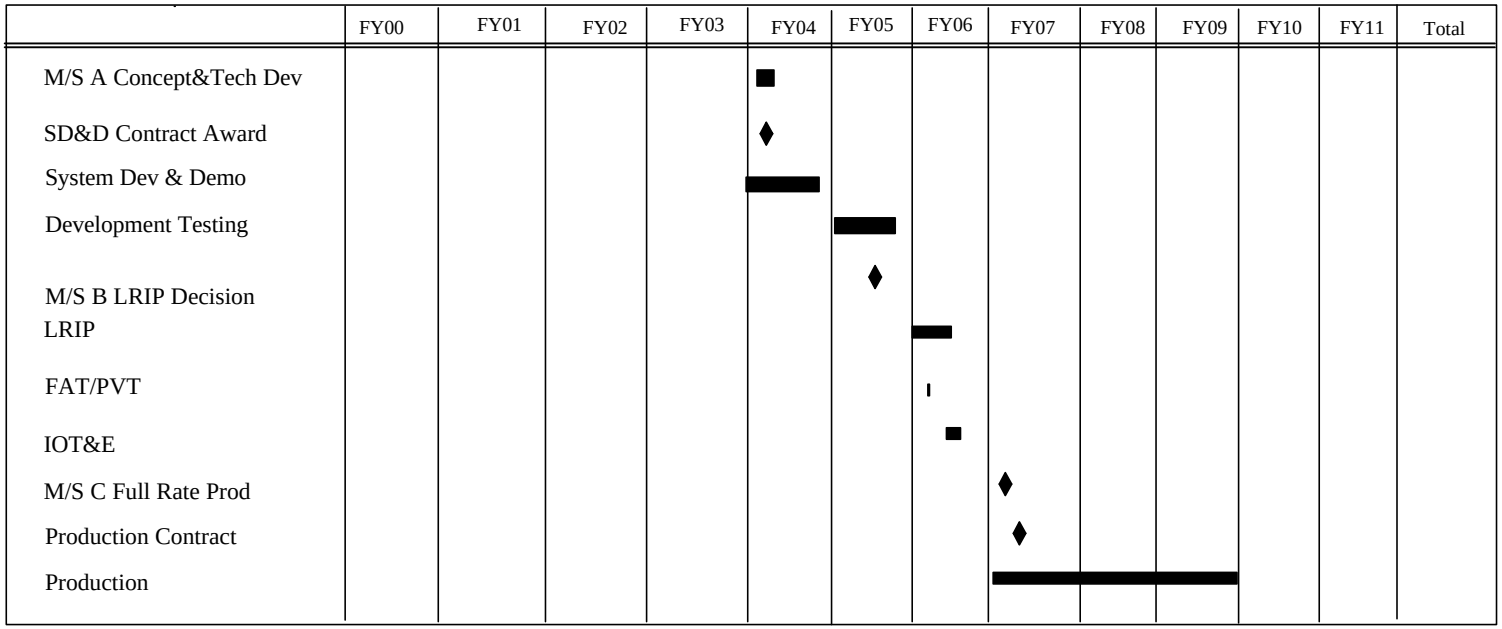
Program Funding Summary (APPN, BLI #, NOMEN)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl	Total Cost
(U) RDT&E,N	0.727	1.313	2.460	0.702	0.000	0.000	0.000	0.000	5.202
(U) PMC, BLI# 508800 MTVR	328.313	4.577	0.000	0.000	0.000	0.000	0.000	0.000	332.890

Exhibit R-4/4a Schedule Profile/Detail		DATE: February 2004
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)**

MTVR SCHEDULE DETAIL	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
PY4 Full rate production (FRP)		2Q					
PY5 Full rate production (FRP)		2Q					
IOT&E	3Q						

Exhibit R-4/4a Schedule Profile/Detail		DATE: February 2004
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)**

MTVR Trailer Program Schedule



Program (APPN, BLI	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl	Total Cost
(U) RDT&E,N - MTVR Trailers	0.000	1.140	1.966	0.704	0.000	0.000	0.000	0.000	3.810
(U) RDT&E,N - Family of Tactical Trailers	0.000	0.187	0.000	0.000	0.000	0.000	0.000	0.000	0.187
(U) PMC, BLI# 509700 Fam of Tact Trailers	0.000	0.000	2.445	2.781	3.332	3.560	3.312	Continuing	Continuing
(U) PMC, BLI# 509700 MTVR Trailers	0.000	0.000	0.000	9.810	21.661	26.176	17.762	Continuing	Continuing

Exhibit R-4/4a Schedule Profile/Detail			DATE: February 2004
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)**	

MTVR Trailers SCHEDULE DETAIL	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
M/S A Concept & Tech Dev		1Q					
Sys Dev & Demo Contract Award		2Q					
Developmental testing			1Q				
M/S B LRIP Decision				1Q			
FAT/PVT				2Q			
IOT&E				4Q			
M/S C Full rate production					2Q		

EXHIBIT R-2a, RDT&E Project Justification					DATE: February 2004				
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 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY2009	Cost to Complete	Total Program
Project Cost	**4.771**	**8.872**	**4.767**	**6.201**	**4.415**	**0.397**	**0.173**	**0.000**	**29.596**
RDT&E Articles Qty		**9**							

(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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.205**	**0.000**	**0.000**
RDT&E Articles Qty			

LVSR: Modeling and Simulation.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.523**	**0.000**	**0.000**
RDT&E Articles Qty			

LVSR: Engineering and Technical support for base and variant development.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.384**	**0.100**	**0.000**
RDT&E Articles Qty			

LVSR: Source Selection and Contracting costs.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**3.659**	**0.050**	**0.100**
RDT&E Articles Qty			

LVSR: Program management and support.

LVSR: FY03 funding forward finances FY04 LVSR Prototype development.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**8.324**	**0.000**
RDT&E Articles Qty		6	

LVSR: Obtain prototypes. Conduct system development and demonstration.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2004
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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.000**	**4.667**
RDT&E Articles Qty			

LVSR: Initiate Developmental Test and Evaluation.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.393**	**0.000**
RDT&E Articles Qty		3	

FRC: Acquire Prototypes

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.005**	**0.000**
RDT&E Articles Qty			

FRC: Provide Program Management and support.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.000**	**0.000**
RDT&E Articles Qty			

FRC: Initiate system Development and Demonstration.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.000**	**0.000**
RDT&E Articles Qty			

FRC: Initiate Operational Test and Evaluation.

(U) Total $	0.000	4.771	8.872	4.767

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2004
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	**FY2003**	**FY2004**	**FY2005**
(U) FY2004 President's Budget	**6.764**	**8.972**	**6.146**
(U) Adjustments from the President's Budget:			
(U) Congressional/OSD Program Reductions			
(U) Congressional Rescissions			
(U) Congressional Increases			
(U) Reprogrammings	-1.719		-1.359
(U) SBIR/STTR Transfer	-0.274		
(U) Minor Affordability Adjustment		-0.100	-0.020
(U) FY 2005 President's Budget:	**4.771**	**8.872**	**4.767**

CHANGE SUMMARY EXPLANATION:

(U) Funding: Change in FY03 funding is due to a $274K SBIR reduction and a $1,518K addition for realignment within Marine Corps. Change in FY04 funding is due to minor affordability adjustments. Change in FY05 funding is due to $1,359K realignment within Marine Corps and $20K reduction due to affordability adjustments.

(U) Schedule: Not Applicable.

(U) Technical: Not Applicable.

(U) C. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY2008	FY2009	To Compl	Total Cost
(U) PMC Line (BLI# 509300) FlatRack	0.000	0.000	0.000	0.000	22.066	22.200	0.000	0.000	44.266
(U) PMC Line (BLI# 509300) LVSR	0.000	0.000	0.000	26.918	57.849	96.670	57.033	Cont	Cont

(U) Related RDT&E:

(U) PE 0206623M Marine Corps Ground Combat Supporting Arms Systems

(U) PE 0603640M Marine Corps Advanced Technology Demonstration

(U) PE 0604804A Logistics and Engineering Equip/Engr Development

(U) PE 0206313M Marine Corps Communications

(U) D. ACQUISITION STRATEGY: The Logistics Vehicle System Replacement (LVSR) program will consist of two separate phases. During the first phase, the System Development and Demonstration (SD&D) phase up to two contracts will be awarded to procure prototypes for developmental testing. The winner of the SD&D phase will be awarded a production contract to produce LRIP vehicles for operational testing.

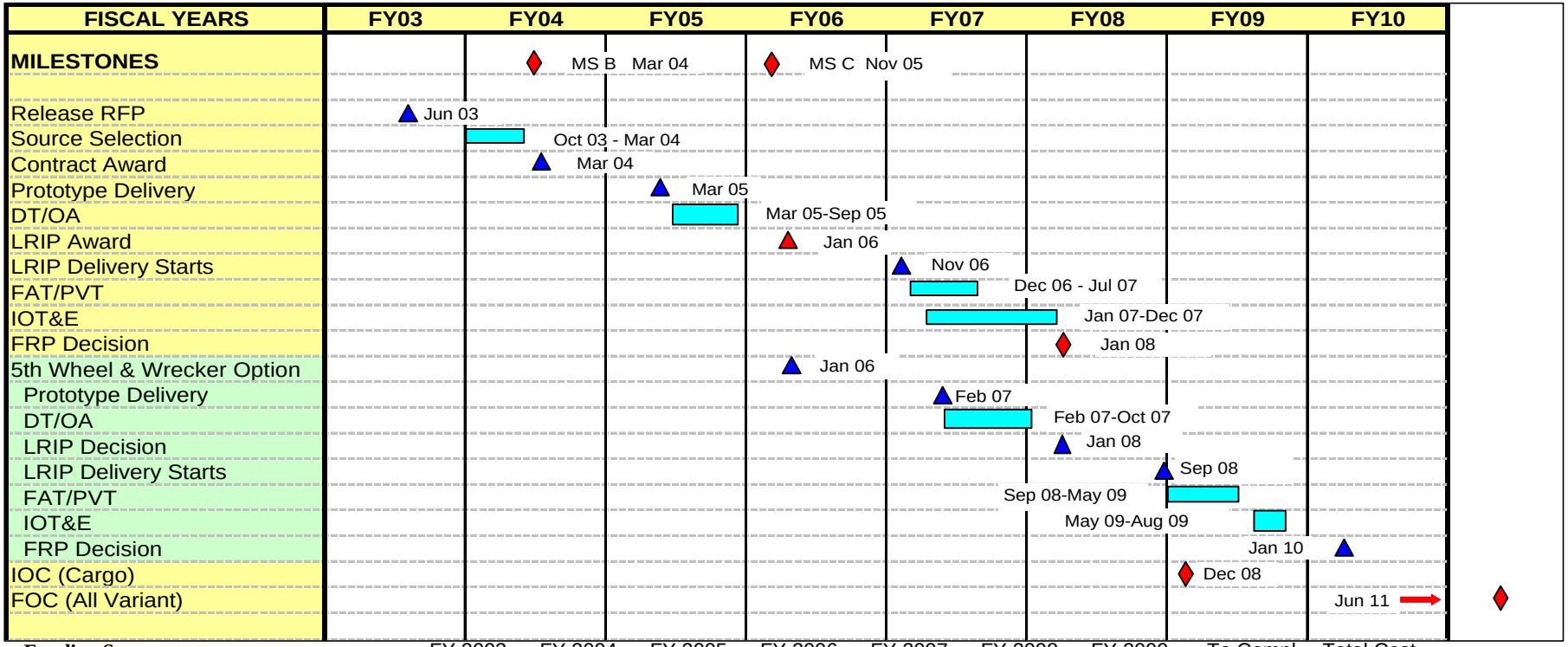
(U) E. MAJOR PERFORMERS:

Jul '03	Nevada Automotive Test Center (NATC)	Modeling and Simulation
Mar '04	TBD	6 Vehicle Prototypes

Exhibit R-3 Cost Analysis							DATE: February 2004					
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /BA 7 Operational Sys Dev**		PROGRAM ELEMENT **0206624M Marine Corps Combat Services Spt**					PROJECT NUMBER AND NAME **C0201 Logistical Vehicle System Replacement (LVSR)**					
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
Source Selection	RCP	MCSC Quantico, VA	0.000	0.240	07/03	0.100	10/03			0.000	0.340	0.340
LVSR Prototypes	RCP	TBD	0.000			8.324	12/03			Cont.	Cont.	
FRC Prototypes	RCP	NATC Carson City, NV	0.000			0.393	01/04			0.000	0.393	0.393
Subtotal Product Dev			0.000	0.240		8.817		0.000		0.000	9.057	
Remarks:												
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
Modeling & Simulation	RCP	NSWC, Carderock	0.000	0.205	11/02					0.000	0.205	0.205
Subtotal Support			0.000	0.205						0.000	0.205	
Remarks:												
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
LVSR Operational T&E	TBD	TBD	0.000					4.667	03/05	Cont.	Cont.	
Subtotal T&E			0.000	0.000				4.667		0.000	4.667	
Remarks:												
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
Engineer & Tech Support	RCP	MCSC Quantico, VA	0.000	0.667	04/03					0.000	0.667	0.667
Subtotal Support				0.667		0.000		0.000		0.000	0.667	
Remarks:												
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
LVSR Contractor Suppt	RCP	Sverdrup, Dumfries, VA.	0.000	3.579	11/02			0.050	10/04	Cont.	Cont.	
LVSR Prgrm Mgmnt Spt	WR	MCSC Quantico, VA	0.000	0.080	11/02	0.050	10/03	0.050	10/04	Cont.	Cont.	
FRC Prgrm Mgmnt Spt	WR	MCSC Quantico, VA	0.000	0.000		0.005	10/03	0.000	10/04	Cont.	Cont.	
Subtotal Management				3.659		0.055		0.100		0.000	3.814	
Remarks:												
Total Cost				4.771		8.872		4.767		0.000	18.410	

Exhibit R-4/4a Schedule Profile/Detail		DATE: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA 7 Operational Sys D	PROGRAM ELEMENT 0206624M Marine Corps Combat Services Spt	PROJECT NUMBER AND NAME C0201 Logistical Vehicle System Replacement (LVSR)

Logistical Vehicle System Replacement



Program Funding Summary (APPN, BLI #, NOMEN)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl	Total Cost
(U) RDT&E,N (LVSR)	4.771	8.474	4.767	4.986	4.415	0.397	0.173	0.000	27.983
(U) RDT&E,N (Flatrack)	0.000	0.398	0.000	1.215	0.000	0.000	0.000	0.000	1.613
(U) PMC, BLI# 509300 LVSR	0.000	0.000	0.000	26.918	57.849	96.670	57.033	Continuing	Continuing
(U) PMC, BLI# 509300 FLATRACK	0.000	0.000	0.000	0.000	22.066	22.200	0.000	0.000	44.266

Exhibit R-4/4a Schedule Profile/Detail			DATE: February 2004
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME	
RDT&E, N /BA 7 Operational Sys D	0206624M Marine Corps Combat Services Spt	C0201 Logistical Vehicle System Replacement (LVSR)	

LVSR SCHEDULE DETAIL	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Release RFP	3rd qtr						
Source Selection		1st-2nd qtr					
Contract Award		2nd qtr					
Prototype Delivery			2nd qtr				
DT/OA			2nd-4th qtr				
LRIP Delivery					1st qtr		
FAT					1st-3rd qtr		
IOT&E					2nd qtr	1st qtr	
FRP Decision						2nd qtr	
5th Wheel/Wrecker Option				2nd qtr			
Prototype Delivery					2nd qtr		
DT/OA					2nd qtr	1st qtr	
LRIP Delivery						4th qtr	
FAT						4th qtr	2nd qtr
FRP Decision 2nd FY10							
FOC 3rd FY11							

EXHIBIT R-2a, RDT&E Project Justification						DATE: February 2004			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /BA-7 Operational Sys Dev**	**0206624M Marine Corps Combat Services Spt**				PROJECT NUMBER AND NAME **C2316 Combat Services Support Engineering Equipment**				
COST ($ in Millions)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY2008	FY2009	Cost to Complete	Total Program
Project Cost	**8.708**	**7.660**	**1.984**	**0.513**	**0.531**	**0.543**	**0.553**	**0.000**	**20.492**
RDT&E Articles Qty	**4**								

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

A. This project includes improvements in all areas of Combat Service Support Engineering Equipment. The Assault Breacher Vehicle (ABV) will be a fully tracked, armored combat engineer vehicle capable of keeping pace with the maneuver force. It will breach minefields with Marine Corps integrated items to include a full width mine plow, two line charges, remote control kit, weapons station and lane marking system. The ABV is a survivable combat system which will enhance the combat breaching capabilities of the ground combat elements. The overall system is integrated on the ABRAMS tank chassis to provide commonality with the tank fleet while providing the latest technology in armor protection. It will provide capabilities to breach minefields and complex obstacles.

(U) B. ACCOMPLISHMENTS/PLANNED PROGRAM:

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**1.275**	**0.000**	**0.000**
RDT&E Articles Qty			

ABV: Management support, travel, technical manuals and drawings. Support and management including obtaining safety certification from the Weapons Systems Safety Explosive Review Board (WSSERB).

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.000**	**0.000**
RDT&E Articles Qty			

ABV: Developmental testing.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**6.319**	**0.000**	**0.000**
RDT&E Articles Qty			

ABV: Integration of the line charges, lane-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.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**1.114**	**1.000**	
RDT&E Articles Qty			

ABV: Operational testing, vulnerability/survivability testing, and Reliability, Availability and Maintainability (RAM) testing of the ABV.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.320**	**1.489**
RDT&E Articles Qty			

ABV: Conduct a Limited User Test and Operational Test & Evaluation.

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2004
APPROPRIATION/BUDGET ACTIVITY		PROJECT NUMBER AND NAME
RDT&E, N /BA-7 Operational Sys Dev	**0206624M Marine Corps Combat Services Spt**	**C2316 Combat Services Support Engineering Equipment**

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**5.886**	**0.000**
RDT&E Articles Qty			

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 in planning for production. Funding for this effort in FY02 ($274K) and FY03 ($236K) is provided under Project C1901, PE 0206623M, MC Ground Combat/Support Arms Systems.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.454**	**0.495**
RDT&E Articles Qty			

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.

(U) Total $	0.000	8.708	7.660	1.984

(U) PROJECT CHANGE SUMMARY:

	FY2003	**FY2004**	**FY2005**
(U) FY 2004 President's Budget:	**10.004**	**6.746**	**0.495**
(U) Adjustments from the President's Budget:			
(U) Congressional/OSD Program Reductions			
(U) Congressional Rescissions			
(U) Congressional Increases			
(U) Reprogrammings	-1.191	1.000	1.495
(U) SBIR/STTR Transfer	-0.105	-0.086	-0.006
(U) FY 2005 President's Budget:	**8.708**	**7.660**	**1.984**

CHANGE SUMMARY EXPLANATION:
(U) Funding: See Above.
(U) Schedule: Not Applicable.
(U) Technical: Not Applicable.

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2004
APPROPRIATION/BUDGET ACTIVITY		PROJECT NUMBER AND NAME
RDT&E, N /BA-7 Operational Sys Dev	**0206624M Marine Corps Combat Services Spt**	**C2316 Combat Services Support Engineering Equipment**

(U) C. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl	Total Cost
(U) PMC Line (BLI# 613300) ABV	0.000	0.000	4.621	47.782	47.884	0.000	0.000	0.000	100.287
(U) PMC (BLI#206300) Mod Kits (Trcked Veh)	3..228	2.753	3.864	3.941	4.023	4.111	4.202	Continuing	Continuing
(U) PMC (BLI#206300) Safety Mods	0.000	0.993	3.112	3.283	3.270	3.141	1.633	Continuing	Continuing
(U) PMC (BLI#209500) M1A1 FEP	0.000	4.191	36.873	33.168	17.802	22.980	0.000	0.000	115.014

(U) Related RDT&E:

(U) PE 0206623M Marine Corps Ground Combat Supporting Arms Systems
(U) PE 0603640M Marine Corps Advanced Technology Demonstration
(U) PE 0604804A Logistics and Engineering Equip/Engr Development
(U) PE 0206313M Marine Corps Communications

(U) D. ACQUISITION STRATEGY:

(U) The **M1A1 MOD** and **Safety Mods** 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 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. **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.

(U) **ABV**: SYSTEM DEVELOPMENT & DEMONSTRATION PHASE: Conduct modeling to support vehicle platform selection and trade studies for line charge integration. Modeling applications to support Analysis of Alternatives/Testing & Evaluation Alternatives (AOA/TEA). Establish Statement of Work (SOW) with Anniston Army Depot to build demonstrator vehicle and integrate full width mine plow, lane marking system, line charges, weapons systems & remote control system to the M1 Tank Chassis. Conduct plow tests with the demonstrator vehicle. Conduct developmental testing to include live mine testing and survivability/vulnerability analysis. Conduct trade study (examining capabilities and cost to down select). Select a systems integrator for the production of the LRIP and production vehicles.

(U) E. MAJOR PERFORMERS:

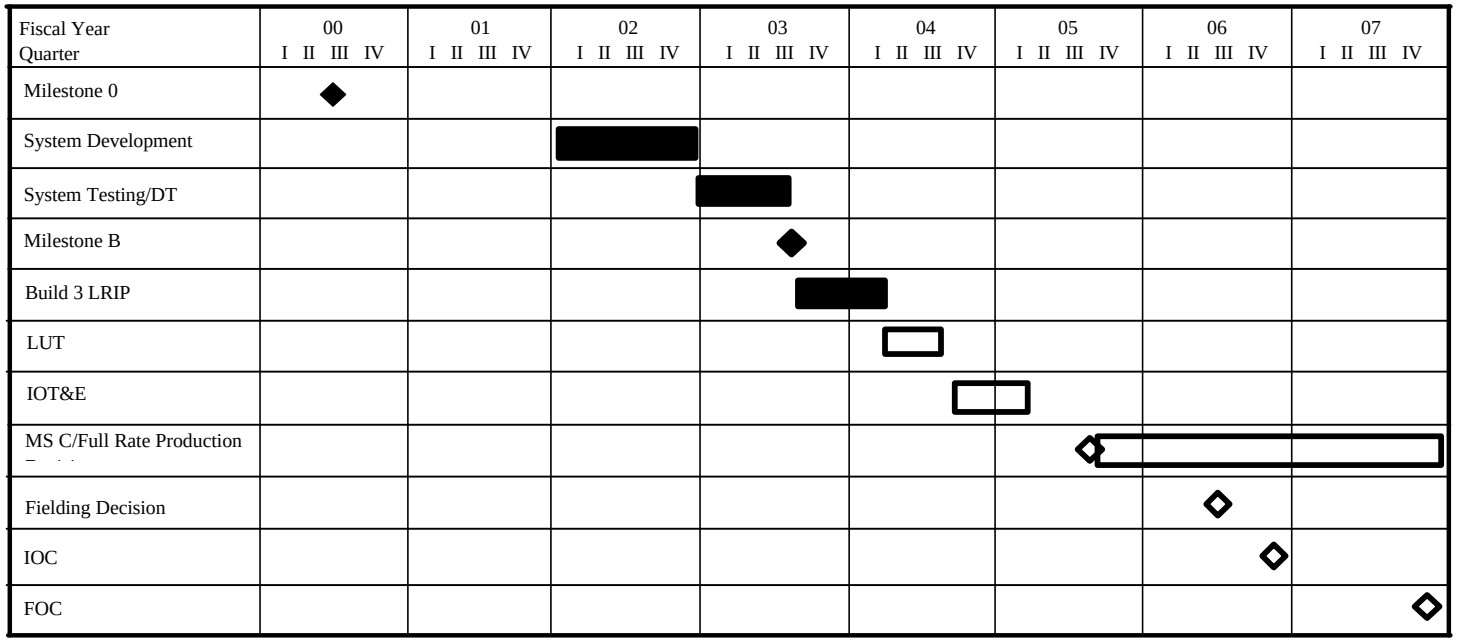
FY02 - 09/02 TACOM/PM ABRAMS, Warren, MI-Integrate components onto the modified M1 Chassis to build the ABV Demonstrator
FY03 - 06/03 Anniston Army Depot-Build three ABV's through a SOW
FY04 - 02/03 ATC, Aberdeen, MD-Test activity for the ABV during DT

Exhibit R-3 Cost Analysis						DATE: February 2004						
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**						
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 -ABV	Various	Various	4.073	3.439	07/03	0.000		0.000		0.000	7.512	8.073
Systems Engineering -ABV	Various	Various	1.588	1.830	07/03	0.000		0.000		0.000	3.418	3.418
Systems Engineering -ABV	MIPR	NSWC, Crane, IN	0.345	0.150	07/03	0.000		0.000		0.000	0.495	0.825
Engineering/Design	MIPR	PM Unmanned Grd Vehicles	0.900	0.900	07/03	0.000		0.000		0.000	1.800	0.900
Prod Dev - M1A1 Firepower	RCP	Raytheon, McKinney, TX	0.000	0.000		3.334	1Q/04	0.000		0.000	3.334	
PROD DEV - M1A1 Mods	RCP	TBD	0.000	0.000		0.217	1Q/04	0.182	1Q/05	Cont.	Cont.	
Subtotal Product Dev			**6.006**	**6.319**		**3.551**		**0.182**		**Cont.**	**Cont.**	
Remarks:												
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**
Program Support - ABV	RCP	BAE	1.484	0.495	07/03	0.000		0.000		0.301	2.280	2.280
Program Support - ABV	RCP	MCSC, Quantico, VA	1.013	0.280	07/03	0.000		0.000		0.225	1.518	1.518
Program Support - ABV	RCP	SVERDRUP	0.200	0.000		0.000		0.000		0.000	0.200	0.000
Program Support - ABV	MIPR	NAVFAC	0.440	0.500	07/03	0.000		0.000		0.000	0.940	0.800
Program Supp-M1A1 Mods	WR	MCSC, Quantico, VA	0.000	0.000		0.207	1Q/04	0.313	1Q/05	Cont.	Cont.	
Program Supp-M1A1 FEP	MIPR	Tacom, ARDEC Warren, MI	0.000	0.000		0.150	1Q/04	0.000		0.000	0.150	0.150
Subtotal Support			**2.697**	**1.275**		**0.357**		**0.313**		**Cont.**	**Cont.**	
Remarks:												
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 - ABV	MIPR	WES, Vicksburg, MS	0.995	0.314	07/03	0.000		0.000		0.000	1.309	1.309
DT&E - ABV	WR	MCOTEA, Quantico, VA	0.000	0.500	07/03	0.000		0.000		Cont.	Cont.	
DT&E - ABV	MIPR	NSWC, Crane, IN	0.860	0.300	07/03	0.000		0.000		0.000	1.160	1.160
OT&E - ABV	MIPR	APG, MD	0.000	0.000		1.000	TBD	1.489	TBD	Cont.	Cont.	
Engineering/Design	MIPR	PM Unmanned Grd Vehicles	0.000	0.000		0.320	TBD	0.000		0.000	0.320	0.340
M1A1 Firepower	WR	FMF	0.000	0.000		0.300	1Q/04	0.000		0.000	0.300	0.300
M1A1 Firepower	RCP	TBD	0.000	0.000		1.502	TBD	0.000		0.000	1.502	1.502
M1A1 Firepower	MIPR	APG, MD	0.000	0.000		0.500	1Q/04	0.000		0.000	0.500	0.500
M1A1Firepower	MIPR	YUMA, AZ	0.000	0.000		0.100	1Q/04	0.000		0.000	0.100	0.100
Subtotal T&E			**1.855**	**1.114**		**3.722**		**1.489**		**Cont.**	**Cont.**	
Remarks:												

Exhibit R-3 Cost Analysis						DATE: February 2004						
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**						
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**
M1A1 MOD KIT	RCP	BAEST, Inc, Stafford, VA	0.000	0.000		0.030	1Q/04			0.000	0.030	0.030
Subtotal Management			**0.000**	**0.000**		**0.030**		**0.000**		**Cont.**	**Cont.**	
Remarks:												
Total Cost				**8.708**		**7.660**		**1.984**		**Cont.**	**Cont.**	

Exhibit R-4/4a Schedule Profile Detail		DATE: February 2004
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**

ASSAULT BREACHER VEHICLE



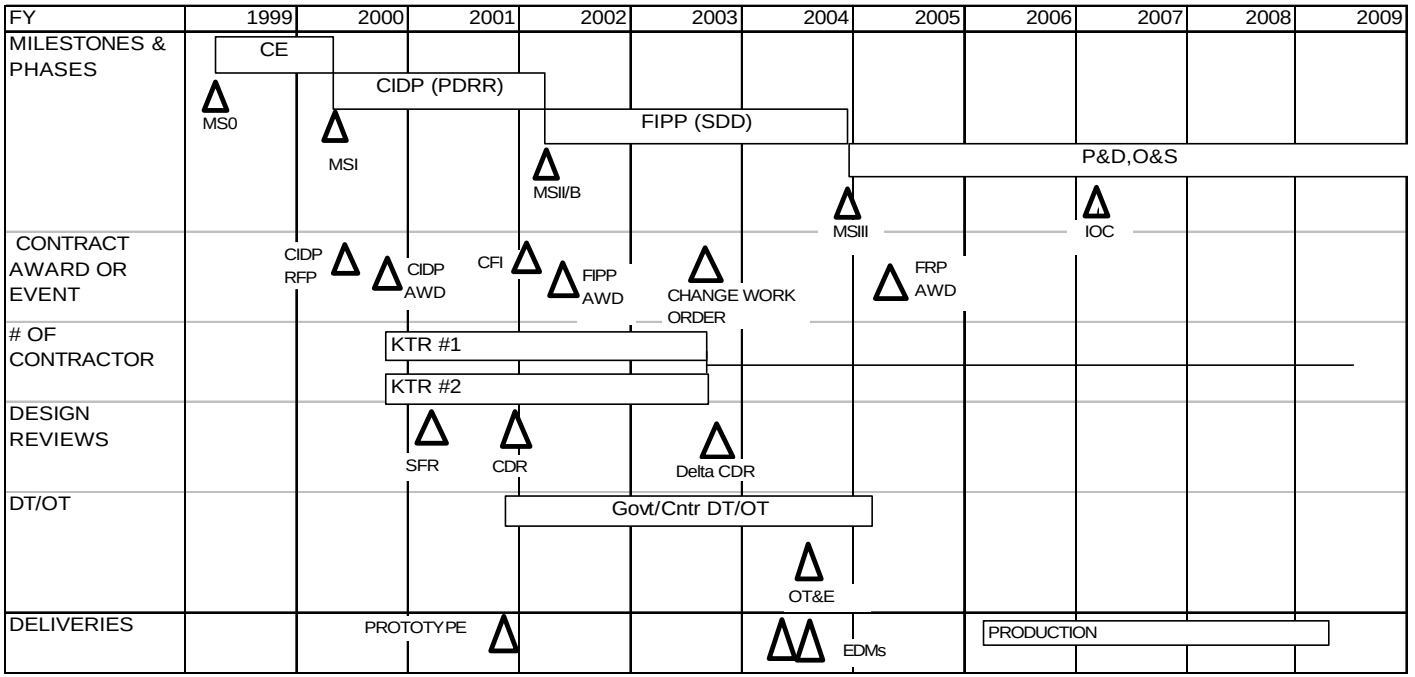
Program Funding Summary (APPN, BLI #, NOMEN)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl	Total Cost
(U) RDT&E,N	8.708	1.320	1.489	0.000	0.000	0.000	0.000	0.000	11.517
(U) PMC, BLI# 613300 ABV	0.000	0.000	4.621	47.782	47.884	0.000	0.000	0.000	100.287

Exhibit R-4/4a Schedule Profile Detail			DATE: February 2004
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**	

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		4th Qtr						
Build 3 LRIP		4th 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		

Exhibit R-4/4a Schedule Profile Detail		DATE: February 2004
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**

M1A1 FIREPOWER ENHANCEMENT PROGRAM (FEP)



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 M1A1 FEP	0.000	0.000	5.886	0.000	0.000	0.000	0.000	0.000	0.000	5.886
(U) PMC BLI# 209500 M1A1 FEP	0.000	0.000	4.191	36.873	33.168	17.802	22.980	0.000	0.000	115.014

Exhibit R-4/4a Schedule Profile Detail			DATE: February 2004
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**	

Firepower Enhancement SCHEDULE DETAIL	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Milestone II/B	1st qtr							
Contract Award	3rd qtr							
IOT&E			3rd qtr					
Milestone C			4th qtr					
FRP Award				2nd qtr				
Production Deliveries (FY05 - FY09)					1st qtr			

EXHIBIT R-2a, RDT&E Project Justification						DATE: February 2004			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /BA-7 Operational Sys Dev**	PROGRAM ELEMENT NUMBER AND NAME **0206624M Marine Corps Combat Services Support**					PROJECT NUMBER AND NAME **C2509 Motor Transport Systems**			
COST ($ in Millions)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY2008	FY2009	Cost to Complete	Total Program
Project Cost	**2.169**	**0.439**	**0.445**	**0.450**	**0.551**	**0.570**	**0.582**	**Cont**	**Cont**
RDT&E Articles Qty									

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

The Marine Corps Tactical Transportation Program manages procurement and life cycle sustainment for more than 40,000 principle end items divided among four fleets: Light Fleet, Medium Fleet, Heavy Fleet, and Special Fleet. A sustained effort is maintain

Motor Transportation Modification 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

(U) B. ACCOMPLISHMENTS/PLANNED:

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.060**	**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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.240**	**0.359**	**0.360**
RDT&E Articles Qty			

MTM: Testing, integration, evaluation of Transportation Systems modifications.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.073**	**0.000**	**0.000**
RDT&E Articles Qty			

MTM: Perform Rollover Test on the High Mobility Multipurpose Wheeled Vehicle (HMMWV).

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**1.796**	**0.000**	**0.000**
RDT&E Articles Qty			

MTM: Modeling and simulation, test and evaluation for the High Mobility Multipurpose Wheeled Vehicle (HMMWV), P19 Firefighter and Logistical Vehicle System.

(U) Total $	**2.169**	**0.439**	**0.445**

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2004
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /BA-7 Operational Sys Dev**	PROGRAM ELEMENT NUMBER AND NAME **0206624M Marine Corps Combat Services Support**	PROJECT NUMBER AND NAME **C2509 Motor Transport Systems**

(U) Project Change Summary	**FY2003**	**FY2004**	**FY2005**
(U) FY 2004 President's Budget:	**2.458**	**0.444**	**0.446**
(U) Adjustments from the President's Budget:			
(U) Congressional/OSD Program Reductions			
(U) Congressional Rescissions			
(U) Congressional Increases			
(U) Reprogrammings	-0.286		
(U) SBIR/STTR Transfer	-0.003		
(U) Minor Affordability Adjustment		-0.005	-0.001
(U) FY 2005 President's Budget:	**2.169**	**0.439**	**0.445**

CHANGE SUMMARY EXPLANATION:

(U) Funding: Change in FY03 funding is due $3K reduction for SBIR and $286K reduction due to realignment of programs within the Marine Corps. Change in FY04 funding is due to $5K minor affordability adjustment. Change in FY05 funding is due to $1K minor afforability adjustment.

(U) Schedule: Not Applicable.

(U) Technical: Not Applicable.

(U) C. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY2008	FY2009	To Compl	Total Cost
(U) PMC (BLI# 523000) < $5M (MT-MOD)	3.432	2.865	2.437	2.522	2.569	2.619	2.668	Continuing	Continuing
(U) PMC (BLI# 509300) Flatrack	0.000	0.000	0.000	0.000	22.066	22.200	0.000	0.000	44.266
(U) PMC (BLI# 509300) LVSR	0.000	0.000	0.000	26.918	57.849	96.670	57.033	Continuing	Continuing

(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,

(U) E. MAJOR PERFORMERS:

Feb - 03	Advanced Vehicle Systems (AVS)	Design, fabricate and test prototype subsystems Engineering Change Proposals for the IFAV.
Apr - 03	Nevada Automotive Test Center	

EXHIBIT R-2a, RDT&E Project Justification						DATE: February 2004			
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 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	**0.307**	**2.209**	**1.075**	**1.514**	**1.139**	**2.018**	**2.007**	**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

The Marine Corps Family of Automatic Test Systems (ATS) formely TETS, 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, condit

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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.113**	**0.123**	**0.126**
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 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.194**	**1.634**	**0.466**
RDT&E Articles Qty			

ATS: Development of new technology testing applications in support of emerging weapon systems.

COST ($ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	**0.000**	**0.452**	**0.483**
RDT&E Articles Qty			

MCATE: Develop new technology for sustainment of current Marine Corps Automatic Test Equipment.

(U) Total $	0.307	2.209	1.075

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2004
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

	FY2003	FY2004	FY2005
(U) FY 2004 President's Budget:	**0.323**	**2.234**	**1.079**
(U) Adjustments from the President's Budget:			
(U) Congressional/OSD Program Reductions			
(U) Congressional Rescissions			
(U) Congressional Increases			
(U) Reprogrammings			
(U) SBIR/STTR Transfer	-0.006		
(U) Minor Affordability Adjustment	-0.010	-0.025	-0.004
(U) FY 2005 NAVCOMPT Budget:	**0.307**	**2.209**	**1.075**

CHANGE SUMMARY EXPLANATION:
(U) Funding: See above.
(U) Schedule: Not Applicable.
(U) Technical: Not Applicable.

(U) C. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY2008	FY2009	To Compl	Total Cost
(U) PMC Line (BLI# 462000) APSCE	4.474	0.000	0.000	0.000	0.000	0.000	0.000	0.000	4.474
(U) PMC Line (BLI# 636600) APSCE	0.000	4.680	3.420	3.238	3.724	0.000	0.000	0.000	15.062
(U) PMC Line (BLI# 440200) MCATE	0.000	1.111	2.020	2.344	2.286	2.381	2.421	Continuing	Continuing
(U) PMC Line (BLI# 440200) ATS/TETS	1.973	19.201	13.803	8.410	9.697	12.140	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: Automatic Test Equipment Program (ATEP), Albany, GA for the minor performances. All other performers to be determined at this time.

Exhibit R-3 Cost Analysis									DATE: February 2004		
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**				
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**
Study & Hardware	RCP	Mantech, Va	0.100	0.022	03/03	0.040				0	0.162	0.100
Study	RCP	MKI, Va				0.150	03/04			Cont.	Cont.	
Study	RCP	TBD		0.068	05/03	0.250	03/04			Cont.	Cont.	
Study & Hardware	RCP	TBD				1.096		0.696	03/05	Cont.	Cont.	
Hardware	RCP	Willitis Electronic Assembly	0.019								0.019	0.019
Hardware	RCP	MCSC, Quantico VA		0.028	02/03	0.088	12/03	0.092	12/04	Cont.	Cont.	
Software Support	WR	ATEP, Ga	0.050	0.100	03/03	0.300	12/03	0.252	12/04	Cont.	Cont.	
Hardware & Study	WR	NSWC, Ca	0.043			0.250				0.000	0.293	
Subtotal Product Dev			**0.212**	**0.218**		**2.174**		**1.040**		**Cont.**	**Cont.**	
Remarks:												
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**
Travel	WR	MCSC, Quantico VA	0.005	0.089	03/03	0.035	12/03	0.035	12/04	Cont.	Cont.	
Subtotal Support			**0.005**	**0.089**		**0.035**		**0.035**		**Cont.**	**Cont.**	
Remarks:												
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**
EVAL TESTING	WR	CRANE, In	0.084							0.000	0.084	0.084
Subtotal T&E			**0.084**	**0.000**		**0.000**		**0.000**		**0.000**	**0.084**	**0.084**
Remarks:												
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 Management			**0.000**	**0.000**		**0.000**		**0.000**		**Cont.**	**Cont.**	
Remarks:												
Total Cost				**0.307**		**2.209**		**1.075**		**Cont.**	**Cont.**	

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification								DATE: **February 2004**			
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7**						R-1 ITEM NOMENCLATURE 0207161N-Tactical Air Intercept					
COST ($ in Millions)			FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009		
Total PE Cost			**2.812**	**2.236**	**4.061**	**9.345**	**7.869**	**2.474**	**1.222**		
E0457 AIM-9X			**2.812**	**2.236**	**4.061**	**9.345**	**7.869**	**2.474**	**1.222**		

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

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.

R-1 SHOPPING LIST - Item No. 185

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2004**	
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 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost		**2.812**	**2.236**	**4.061**	**9.345**	**7.869**	**2.474**	**1.222**
RDT&E Articles Qty		**13**						

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

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.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0207161N-Tactical Air Intercept	E0457-AIM-9X

(U) B. Accomplishments/Planned Program

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		1.045		
RDT&E Articles Quantity				

Continued EMD efforts to include OT-IIB, including correction of issues identified during OT.

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		1.767	0.150	0.165

Continue providing Government flight test support

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost			2.086	3.896

Begin P3I efforts for AIM-9X fuse.

R-1 SHOPPING LIST - Item No. 185

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0207161N-Tactical Air Intercept	E0457-AIM-9X

(U) C. PROGRAM CHANGE SUMMARY:

(U) Funding:	FY 2003	FY 2004	FY 2005
Previous President's Budget:	1.909	2.322	4.110
Current BES/President's Budget	2.812	2.236	4.061
Total Adjustments	0.903	-0.086	-0.049
Summary of Adjustments			
Congressional program reductions			
Congressional undistributed reductions		-0.026	
Congressional rescissions			
SBIR/STTR Transfer			
Economic Assumptions			-0.009
Reprogrammings	0.903		
Reprioritization		-0.060	-0.040
Congressional increases			
Subtotal	0.903	-0.086	-0.049

(U) Schedule:

(U) Schedule: Due to delays in the completion of Initial Operational Test and Evaluation (IOT&E), the Acquisition Program Baseline was modified to change the IOT&E Complete Threshold to April 2004 and the Milestone III (MSIII) Threshold to September 2004. Additionally, Lot 4 was converted from the first full-rate production lot to a fourth LRIP lot. IOT&E was completed on 29 August 2003, and the program expects to achieve MSIII approval in February 2004.

(U) Technical:

(U) Technical:

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0207161N-Tactical Air Intercept	E0457-AIM-9X

(U) D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
220900 AIM-9X Missile	52.230	25.626	35.177	38.309	49.209	50.023	45.870	849.095	1181.469
231500 AIM-9M Mods	0.583	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.583
AIM-9X Spares	1.085	1.413	1.867	3.186	4.889	4.579	3.338	0.000	
AIM-9X Mods/Missile (Air Force)	54.148	53.174	52.595	55.171	43.767	54.529	55.918	714.461	
(U) RELATED AIR FORCE RDT&E:									
Program Element: 0207161F	2.785	0.372	5.558	15.004	5.543	5.631	5.719		

(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 Assistant Secretary of the Navy (Research, Development and Acquisition) (ASN(RD&A)) approved the program to procure Lot 4 missiles in August 2003. A Firm-Fixed-Price (FFP) contract award is expected in January 2004. ASN(RD&A) will also 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 5 through 7 contracts will be FFP. Rewards or penalities are provided depending on RSC's performance relative to the Procurement Price Commitment Curve (PPCC). A review of RSC's Lots 4-7 proposals relative to the PPCC will be held prior to the award of these contracts.

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)												DATE: **February 2004**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**			PROGRAM ELEMENT 0207161N-Tactical Air Intercept			PROJECT NUMBER AND NAME 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	
Primary H/w Dev (DEM-VAL)	C/CPIF	HUGHES, TUCSON, AZ	6.685								6.685	6.685	
Primary H/w Dev (DEM-VAL)	C/CPIF	RAYTHEON, BEDFORD, MA	8.587								8.587	8.587	
PRIMARY HARDWARE (EMD)	C/CPIF	RAYTHEON, TUCSON, AZ	120.434								120.434	278.694	
EMD AWARD FEE	C/CPIF/AI	RAYTHEON, TUCSON, AZ	14.145								14.145	14.145	
AIRCRAFT INTEGRATION	C/CPFF	BOEING, ST LOUIS, MO	24.397								24.397	24.397	
Systems Engineering	WX	NAWCWD	33.413			0.403	11/03	0.363	10/04	0.871	35.050		
Systems Engineering	WX	NAWCAD	3.826							0.422	4.248		
MISC HW/SW (EFFORTS <$1.0M)	VARIOUS	VARIOUS	7.765							0.435	8.200		
ANCILLARY HWD (LAU-7 Launcher)	C/CPFF	BOEING, ST LOUIS, MO	4.552								4.552	4.552	
PRIMARY H/W-P3I Fuse Contract	TBD	TBD				1.278	12/03	2.907	12/04	15.169	19.354		
Award Fees											0.000		
ENGINEERING SERVICES	MIPR	EGLIN, AFB, FLA	1.810								1.810		
Subtotal Product Development			225.614	0.000		1.681		3.270		16.897	247.462		

Remarks:
EMD Contract Target Value includes both Navy and Air Force Funding. All other fields represent Navy share only.
Total Prior Years - FY95 and prior under P.E. 0603715D. FY96 and out are funded under P.E. 0207161N.

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**		PROGRAM ELEMENT 0207161N-Tactical Air Intercept				PROJECT NUMBER AND NAME 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	25.643	0.335	08/03	0.335	11/03	0.461	11/04	2.731	29.505	
Developmental Test & Evaluation	WX	NAWCAD	4.683							1.306	5.989	
Operational Testing	WX	OPTEVFOR		2.231	07/03			0.100	11/04		2.331	
Subtotal T&E			30.326	2.566		0.335		0.561		4.037	37.825	
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	0.060	10/02	0.020	10/03	0.030	10/04		1.373	
Contractor Engineering Support	ID/IQ,T&M	Various	1.020	0.186	Various	0.200	Various	0.200	Various	0.876	2.482	
Subtotal Management			8.379	0.246		0.220		0.230		0.876	9.951	
Remarks:												
Total Cost			264.319	2.812		2.236		4.061		21.810	295.238	
Remarks:												

R-1 SHOPPING LIST - Item No. 185

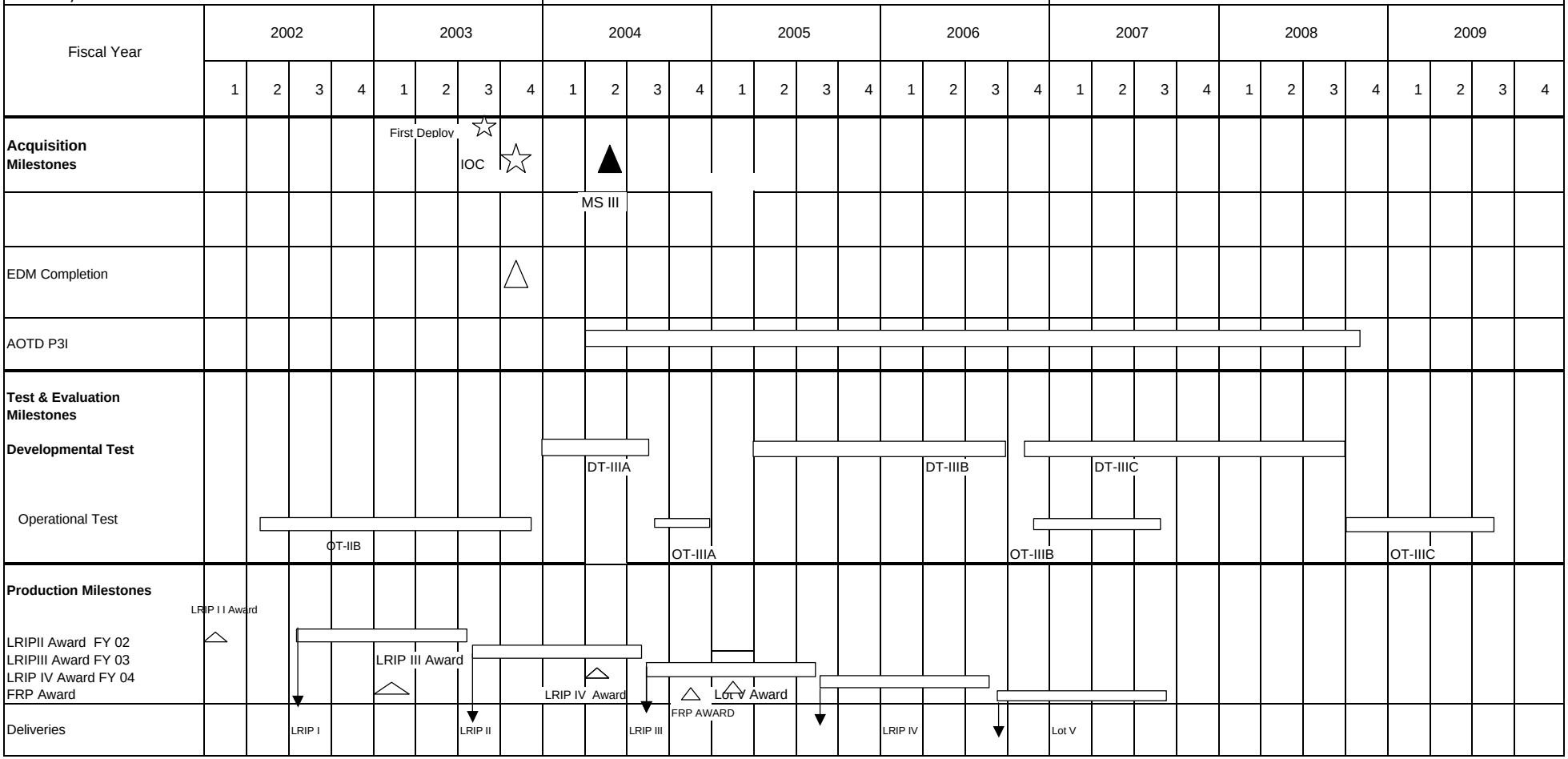
CLASSIFICATION:

EXHIBIT R4, Schedule Profile — DATE: **February 2004**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-7**

PROGRAM ELEMENT NUMBER AND NAME: 0207161N-Tactical AIM Missile

PROJECT NUMBER AND NAME: E0457-AIM-9X



R-1 SHOPPING LIST - Item No. 185

* Revised APB is currently in signature cycle that will convert FRP to LRIP IV

CLASSIFICATION:

Exhibit R-4a, Schedule Detail					DATE: **February 2004**			
APPROPRIATION/BUDGET ACTIVITY **RDT&BA-7**	PROGRAM ELEMENT 0207161N-Tactical AIM Missiles				PROJECT NUMBER AND NAME E0457-AIM-9X			
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Low-Rate Initial Production II Award	1Q							
Operational Testing (OT-IIB) (OPEVAL) Start*	2Q							
Low-Rate Initial Production I Delivery	3Q - 4Q	1Q - 3Q						
Operational Evaluation (OT-IIB) (OPEVAL) Complete		4Q						
Low-Rate Initial Production III Award		1Q						
IOC		4Q						
Full Rate Production (FRP) Decision (MSIII)			2Q					
Full Rate Production Award			4Q					
First Deployment		3Q						
Low-Rate Initial Production II Delivery		3Q - 4Q	1Q - 3Q					
Low-Rate Initial Production III Delivery			3Q - 4Q	1Q - 3Q				
Low-Rate Initial Production IV Delivery				3Q - 4Q	1Q - 3Q			
Full Rate Production Delivery					3Q - 4Q	1Q - 3Q		
*Original Start								

R-1 SHOPPING LIST - Item No. 185

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: **February 2004**	
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7**					R-1 ITEM NOMENCLATURE 0207163N AMRAAM			
COST ($ in Millions)		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost		**7.650**	**8.973**	**9.085**	**3.556**	**6.602**	**2.475**	**1.498**
E0981 AMRAAM		**7.650**	**8.973**	**9.085**	**3.556**	**6.602**	**2.475**	**1.498**

(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.

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2004**	
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 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost		**7.650**	**8.973**	**9.085**	**3.556**	**6.602**	**2.475**	**1.498**
RDT&E Articles Qty								

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

This joint Navy/Air Force program is structured in response to the Joint Service Operational Requirement and Mission Element Need Statement to develop an air superiority air-to-air missile with significant improvements in operational utility and combat effectiveness. This program supports the integration of the AMRAAM into Navy aircraft with analysis of Navy unique applications, simulation capability development aircraft missile integration tasks, pre-planned product improvement (P3I) efforts, and procurement of hardware to support Navy test and evaluation tasks.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0207163N AMRAAM	E0981 AMRAAM

(U) B. Accomplishments/Planned Program

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		5.020	6.350	5.203
RDT&E Articles Quantity				

Continued FY03 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. Efforts in consonance with USAF funding of $39.334 in FY03, $32.154 in FY04, and $33.266 in FY05.

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		2.331	2.273	2.332
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 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		0.299	0.350	1.550
RDT&E Articles Quantity				

Continue aircraft integration activities and test and evaluation for Navy unique requirements.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0207163N AMRAAM	E0981 AMRAAM

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2003	FY 2004	FY 2005
Previous President's Budget:	7.928	9.297	7.972
Current BES/President's Budget	7.650	8.973	9.085
Total Adjustments	-0.278	-0.324	1.113
Summary of Adjustments			
Congressional program reductions			
Congressional undistributed reductions		-0.104	
Congressional rescissions			
SBIR/STTR Transfer	-0.185		
OSD			
Reprioritization		-0.220	1.135
Economic Assumtions			-0.022
Reprogrammings	-0.093		
Congressional increases			
Subtotal	-0.278	-0.324	1.113

Schedule:

Phase 3: The P3I Phase 3 EMD program was re-baselined in April 2003 to reduce flight test execution risk and to establish a high confidence overall program execution schedule (all with approved program baseline commitments). In consonance with this re-baselined EMD completion the F/A-18 IOC also had to be adjusted to coincide with execution of the re-baselined DT and OT completion schedules. CNO concurred with the new IOC date.

Phase 4: Prior to awarding the Phase 4 P3I SDD contract (in January 2004) testing schedules were adjusted jointly by Air Force and Navy to reflect a higher confidence of successful program execution. This was done in collaboration with CNO, USAF ACC/Commander Operational Test and Evaluation Force, and USAF/AFOTEC.

Technical:

Not Applicable.

CLASSIFICATION: UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0207163N AMRAAM	E0981 AMRAAM

(U) D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
WPN/P1#6 $	49.962	37.368	33.914	82.522	100.602	85.090	87.015	104.104	1,711.800
Quantity	76	42	46	101	150	140	150	122	2,419

Related RDT&E
- 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).

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1) | DATE: **February 2004**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-7** | PROGRAM ELEMENT: 0207163N AMRAAM | PROJECT NUMBER AND NAME: 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	26.090	4.168	11/02	5.303	12/03	4.326	11/04	1.857	41.744	41.744
Primary Hardware Development	WX	NAWC-AD Patuxent River MD		0.020	11/02	0.020	11/03	0.021	11/04		0.061	
Primary Hardware Development	WX	NAWC-WD Pt Mugu CA		0.073	11/02	0.070	11/03	0.072	11/04		0.215	
Primary Hardware Development	WX	NSWC Dahlgren VA		0.020	11/02	0.021	11/03	0.021	11/04		0.062	
Award Fees	SS/CPAF	Raytheon, Tucson AZ	3.095	0.739	11/02	0.936	12/03	0.763	11/04	0.328	5.861	5.861
Prior Years Development/Acft Integ	Various	Various	19.650								19.650	
Subtotal Product Development			48.835	5.020		6.350		5.203		2.185	67.593	

Remarks: Percentage of award fees actually awarded in past award fee periods is 15%.

Development Support	SS/FFP	JHU/APL Laurel MD		0.284	01/03	0.384	01/04	0.390	01/05	0.600	1.658	1.658
Development Support	RX	NSMA VA		1.131	12/02	0.900	12/03	0.926	12/04	1.050	4.007	
Development Support	WX	NAWC-WD Pt Mugu CA	8.577	0.040	10/02	0.050	10/03	0.050	10/04		8.717	
Subtotal Support			8.577	1.455		1.334		1.366		1.650	14.382	

Remarks:

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**		PROGRAM ELEMENT 0207163N AMRAAM				PROJECT NUMBER AND NAME 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	0.168	11/02	0.350	11/03	0.350	11/04	4.025	5.849	
Developmental Test & Evaluation	MIPR	Raytheon, Tucson AZ		0.131	12/02						0.131	
Developmental Test & Evaluation	WX	NAWC WD Pt Mugu CA						1.200	11/04	4.100	5.300	
Subtotal T&E			0.956	0.299		0.350		1.550		8.125	11.280	
Remarks:												
Program Management Support	WX	NAWC-AD Patuxent River M	2.188	0.676	10/02	0.680	10/03	0.703	10/04	1.377	5.624	
Travel	MIPR	PMA-259 Eglin AFB FL	0.950	0.200	10/02	0.259	10/03	0.263	10/04	0.794	2.466	
Subtotal Management			3.138	0.876		0.939		0.966		2.171	8.090	
Remarks:												
Total Cost			61.506	7.650		8.973		9.085		14.131	101.345	
Remarks:												

R-1 SHOPPING LIST - Item No. 186

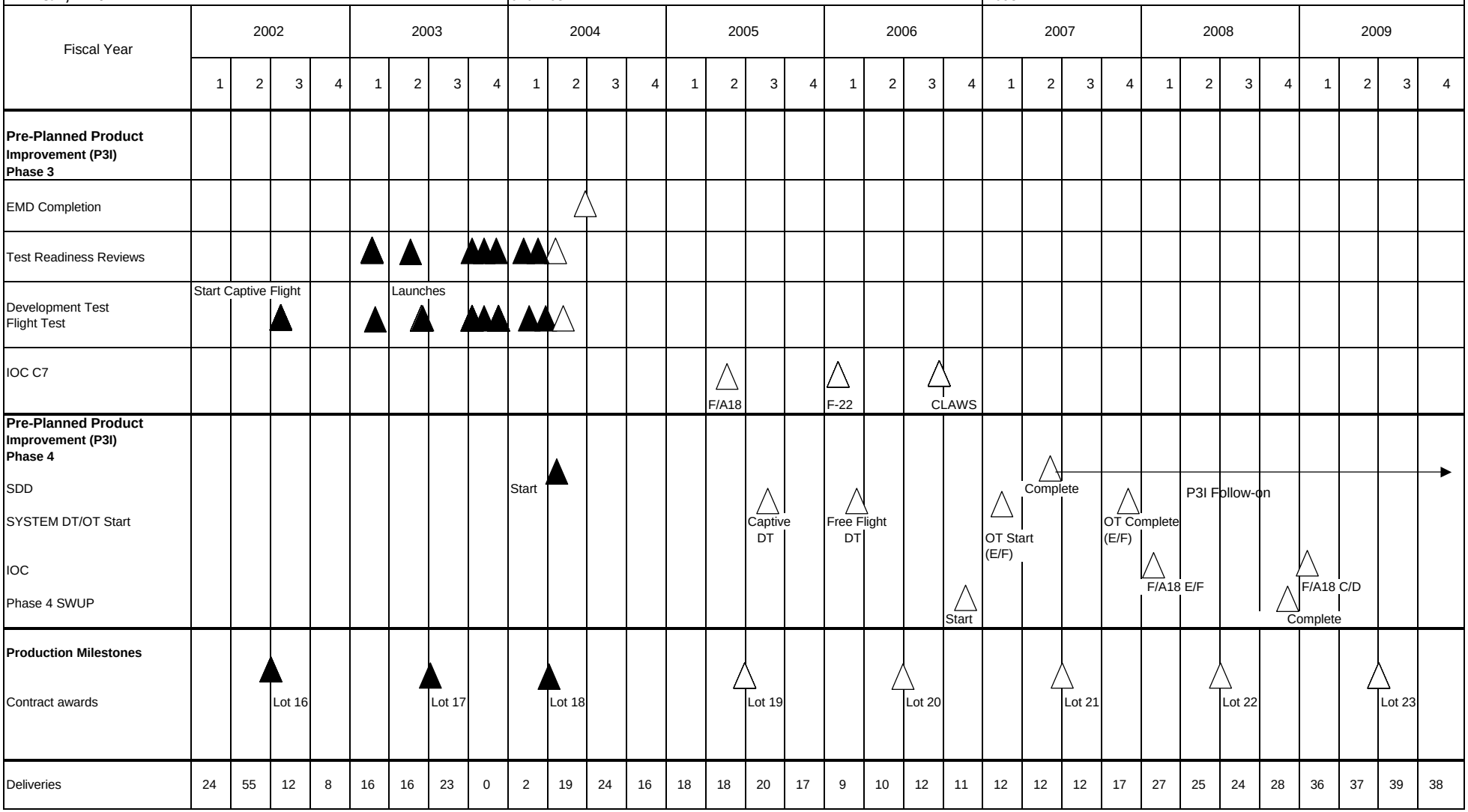
CLASSIFICATION:

EXHIBIT R4, Schedule Profile — DATE: **February 2004**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-7**

PROGRAM ELEMENT NUMBER AND NAME: 0207163N AMRAAM

PROJECT NUMBER AND NAME: E0981 AMRAAM



R-1 SHOPPING LIST - Item No. 186

CLASSIFICATION:

Exhibit R-4a, Schedule Detail					DATE: **February 2004**			
APPROPRIATION/BUDGET ACTIVITY **RDT&BA-7**	PROGRAM ELEMENT 0207163N AMRAAM				PROJECT NUMBER AND NAME E0981 AMRAAM			
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
EMD Completion Phase 3			2nd Qtr					
First P3I Phase 3 Delivery			1st Qtr					
Test Readiness Reviews		1st,2nd,4th Qtr	1st,2nd Qtr					
DevelopmentTest/Flight Test	3rd Qtr	1st,2nd,4th Qtr	1st ,2nd Qtr					
F/A-18 IOC of AIM120C7				2nd Qtr				
F-22 IOC of AIM120C7					1st Qtr			
CLAWS IOC of AIM120C7					3rd Qtr			
SDD Start Phase 4			2nd Qtr					
SDD Completion Phase 4						2nd Qtr		
Phase 4 SWUP Start					4th Qtr			
Phase 4 SWUP Complete							4th Qtr	
System DT (Captive) Start				3rd Qtr				
System DT (Free flight) Start					1st Qtr			
System OT (F/A-18 E/F) Start						1st Qtr		
System OT (F/A-18 E/F) Complete						4th Qtr		
IOC F/A18 E/F							1st Qtr	
IOC F/A18 C/D								1st Qtr
P3I Follow-on Efforts						2nd-4th Qtr	1st-4th Qtr	1st-4th Qtr
Production Lot 16 Contract Award	3rd Qtr							
Production Lot 17 Contract Award		2nd Qtr						
Production Lot 18 Contract Award			2nd Qtr					
Production Lot 19 Contract Award				2nd Qtr				
Production Lot 20 Contract Award					2nd Qtr			
Production Lot 21 Contract Award						2nd Qtr		
Production Lot 22 Contract Award							2nd Qtr	
Production Lot 23 Contract Award								2nd Qtr

R-1 SHOPPING LIST - Item No. 186

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification								DATE: February 2004			
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 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009		Cost to Complete	Total Program
Total PE Cost	**280.800**	**110.463**	**267.665**	**573.092**	**765.126**	**834.840**	**667.679**	**295.224**		**Continuing**	**Continuing**
0728 EHF SATCOM Terminals	**114.515**	**37.177**	**57.774**	**50.345**	**79.663**	**67.244**	**26.912**	**10.600**		**Continuing**	**Continuing**
0731 Fleet Satellite Comm	**98.076**	**0.633**	**0.578**	**0.644**	**1.493**	**1.775**	**1.812**	**1.848**		**Continuing**	**Continuing**
2472 Mobile User Segment	**68.209**	**66.979**	**195.019**	**503.651**	**621.268**	**661.558**	**561.584**	**209.618**		**161.114**	**3,049.000**
9122 Transformational Communications	**0.000**	**5.674**	**12.564**	**18.452**	**62.702**	**104.263**	**77.371**	**73.158**		**Continuing**	**Continuing**
(NOTE: Advanced Wideband name changed to Transformational Communications (TC))											**0.000**
9429 Covert Communications	**0.000**	**0.000**	**1.730**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**			**1.730**
Quantity of RDT&E Articles			**8**		**25**	**13**					**46**

(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.

(U) The Advanced EHF (AEHF) Operational Requirements Document (ORD) was validated by the Joint Requirements Oversight Council (JROC) on 22 Mar 1999. The Navy AEHF Multiband Terminal (NMT) 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 NMT Program is the required Navy component to the Advanced EHF Program for enhancing protected and survivable satellite communications to Naval forces. The NMT system provides an increase in single service capability from 1.5 Mbps to 8 Mbps, increases the number of coverage areas and retains A/J, LPI protection characteristics. It is compatible with today's Navy LDR/MDR terminals and will sustain the MILSATCOM architecture by providing connectivity across the spectrum of mission areas, to include land, air and naval warfare, special operations, strategic nuclear operations, strategic defense, theater missile defense, and space operations and intelligence. The NMT system will replenish and improve on the capabilities of the Milstar system. The new system will equip the warfighters with the assured, jam resistant, secure communications as described in the ORD for the joint NMT Satellite Communications System. The NMT system will provide crosslinks within the NMT constellation as well as between NMT satellites and Milstar satellites in the backwards compatible mode. Mission requirements specific to Navy operations, including threat levels and scenarios, are contained in the NMT ORD.

R-1 SHOPPING LIST - Item No. 190

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification	DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7**	R-1 ITEM NOMENCLATURE 0303109N Satellite Communications (Space)

(U) The Sensitive Compartmented Information (SCI) Networks implements the Integrated Special Intelligence Communications portion of the Automated Digital Network System (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 resource (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) Joint Tactical Radio System-Maritime (JTRS-M) - In FY 2003 JTRS-M was transfered to Program Element 0604280N, Project Number X3073.

(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 in 2010. The MUOS program builds on state-of-the-art technologies and best commercial practices to develop a totally responsive joint warfighter system. In addition, new user requirements have been identified and advanced concepts developed to incorporate new programs and technologies which address the significant growth in requirements for military narrowband communications, as required per the approved joint interest MUOS Operational Requirements Document (ORD).

(U) The Navy Transformational Communications (TC) program (formerly named Advanced Wideband System) 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.

(U) Covert communications is a FY04 Congressional add.

(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.

R-1 SHOPPING LIST - Item No. 190

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: **February 2004**			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT NUMBER AND NAME 0303109N - Satellite Communications (Space)					PROJECT NUMBER AND NAME 0728 EHF SATCOM Terminals					
COST ($ in Millions)	Prior Years Cost	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009		Cost to Complete	Total Program
Project Cost	**114.515**	**37.177**	**57.774**	**50.345**	**79.663**	**67.244**	**26.912**	**10.600**		**Continuing**	**Continuing**
RDT&E Articles Qty			**8**		**20**						**28**

(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. The EHF Medium Data Rate (MDR) upgrade program is complete and provides increased bandwidth by providing higher data rates [4.8 kilobits per second (Kbps) – 1.544 megabits per second (Mbps)] when communicating with Milstar II satellites.

(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.

(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. 190

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0303109N - Satellite Communications (Space)	0728 EHF SATCOM Terminals

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

(U) The Navy AEHF Multiband Terminal (NMT) 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 NMT Program is the required Navy component to the Advanced EHF Program for enhancing protected and survivable satellite communications to Naval forces. The NMT system provides an increase in single service capability from 1.5 Mbps to 8 Mbps, increases the number of coverage areas and retains A/J, LPI protection characteristics. It is compatible with today's Navy LDR/MDR terminals and will sustain the MILSATCOM architecture by providing connectivity across the spectrum of mission areas, to include land, air and naval warfare, special operations, strategic nuclear operations, strategic defense, theater missile defense, and space operations and intelligence. The NMT system will replenish and improve on the capabilities of the Milstar system. The new system will equip the warfighters with the assured, jam resistant, secure communications as described in the ORD for the joint NMT Satellite Communications System. The NMT system will provide crosslinks within the NMT constellation as well as between NMT satellites and Milstar satellites in the backwards compatible mode. Mission requirements specific to Navy operations, including threat levels and scenarios, are contained in the NMT ORD.

(U) The Challenge Athena Program required 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 was 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 allowed 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 increased 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 allowed 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 maintained its Bit Count Integrity (BCI) both at ship and shore based installations through shipboard antenna handover events. In addition, the MD-1030B(V)9 achieved virtual error free performance for ship's received data.

R-1 SHOPPING LIST - Item No. 190

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0303109N - Satellite Communications (Space)	0728 EHF SATCOM Terminals

(U) B. Accomplishments/Planned Program

	FY 03	FY 04	FY 05
Milstar on Orbit test and checkout	0.936		
RDT&E Articles Quantity			

(U) FY03: 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). Conducted NESP DT/OT testing.

	FY 03	FY 04	FY 05
AN/WSC-6 WGS Terminal Upgrades	6.589	0.112	0.650
RDT&E Articles Quantity			

(U) FY03: Continued 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 03	FY 04	FY 05
TIP/NECC modifications	0.960		
RDT&E Articles Quantity			

(U) FY03: Conducted TIP/NECC Increment 3 development modifications.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0303109N - Satellite Communications (Space)	0728 EHF SATCOM Terminals

(U) B. Accomplishments/Planned Program

	FY 03	FY 04	FY 05
NMT Development, First Phase	26.832	56.732	48.945
RDT&E Articles Quantity		8	

(U) First phase of NMT development for System Design and Development (SDD) for ship, shore and submarine platforms.

(U) **FY03:** Continued engineering analysis and development of terminal and satellite simulators. Began development of 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. Conducted source selection for development of NMT terminal hardware and software.
(U) **FY04**: Complete development of satellite simulators. Award contract for development of NMT 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. Continue development of high-level test plan. Begin design and development of 8 NMT prototypes (four ship, two sub, two shore).
(U) **FY05**: Continue NMT prototype terminal hardware and software development and development of high-level test plan. Continue design and development of 8 NMT prototypes started in FY04.

	FY 03	FY 04	FY 05
EHF Polar	1.860	0.930	0.750
RDT&E Articles Quantity			

(U) EHF POLAR / UFO-11 software development and systems engineering.

(U) **FY03** - Conducted ground segment end-to-end testing, security interface system testing, development of terminal software modifications.
(U) **FY04 - FY05** Continue development of Tracking, Telemetry and Control subsystems and end-to-end system testing for Polar 2/3 system.

R-1 SHOPPING LIST - Item No. 190

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0303109N - Satellite Communications (Space)	0728 EHF SATCOM Terminals

(U) C. PROGRAM CHANGE SUMMARY:

(U) Funding:	FY 2003	FY 2004	FY 2005
FY 04 Presidents Budget	47.445	50.449	56.509
FY 05 Presidents Budget	37.177	57.774	50.345
Total Adjustments	-10.268	7.325	-6.164

Summary of Adjustments

Miscellaneous Navy Adjustments			
Issue 68849 FY 2003 Update	-1.274		
Issue 66556 FY03 SBIR	-0.974		
Issue 65934 FY03 Fed Tech Transfer	-0.020		
Issue 66561 BTR MUOS / AEHF Transfer	-8.000		
Issue 66778 BTR MUOS / AEHF Transfer		8.000	
Issue 68041 Section 8094 Management Improvements		-0.154	
Issue 68060 Sec. 8029: FFRDC Reduction		-0.024	
Issue 68066 Sec. 8126: Efficiencies/Revised Econ Assumption		-0.497	
Issue 69492 PBD 604 Inflation			-0.134
Issue 69512 PBD 604 non purchase inflation			-0.029
Issue 19013 Spares Special Initiatives FY-05			-0.506
Issue 67689 Manpower			-0.094
Issue 67652 AEHF Re-Phasing			-5.400
Issue 67769 NWCF Rates - NSWC Rates			-0.001
Subtotal	-10.268	7.325	-6.164

(U) Schedule:

SDD contract awarded 10/03. Required Acquisition Strategy Report (ASR) was approved June 2002, and the ASR Update was approved July 2003.

(U) Technical:

Not Applicable.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0303109N - Satellite Communications (Space)	0728 EHF SATCOM Terminals

(U) D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
321500 - OPN Ship and Shore*	50.870	74.921	38.896	23.700	22.483	85.112	111.095	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 were competively awarded in the first quarter of FY 2004 for the development and demonstration of four prototype terminals per vendor (eight total). In FY 2006, a downselect to one vendor will occur for the development, demonstration and procurement of twenty Engineering Developmental Models (EDMs).

R-1 SHOPPING LIST - Item No. 190

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**		PROGRAM ELEMENT 0303109N - Satellite Communications (Space)				PROJECT NUMBER AND NAME 0728 EHF SATCOM Terminals						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 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	Various	Various		11.809	10/03	47.915	12/03	41.595	10/04	Continuing	Continuing	
Hardware Development	C/FFP	Harris		5.797	12/02	0.112	02/04	0.650	10/04	Continuing	Continuing	
Hardware Development	WR	SSC SD (San Diego)		0.456	10/02	0.621	10/03	0.442	10/04	Continuing	Continuing	
Ancillary Hardware Development	CPAF	Raytheon (Marlborogh, MA)	55.396	2.144	06/03					Continuing	Continuing	
Software Development	WR	NUWC (Newport, RI)	5.438	1.650	10/02	0.930	11/03	0.750	10/04	Continuing	Continuing	
Systems Engineering	WR	SSC SD (San Diego)	13.241	0.693	11/02	0.235	10/03	0.221	10/04	Continuing	Continuing	
Systems Engineering	WR	NUWC (Newport, RI)		2.522	10/02	1.964	11/03	1.555	10/04	Continuing	Continuing	
Systems Engineering	Various	Various	8.161	0.997	10/02	1.201	10/03	0.840	10/04	Continuing	Continuing	
GFE	Various	Various		6.458	12/02	1.700	11/03	1.000	11/04	Continuing	Continuing	
Subtotal Product Development			82.236	32.526		54.678		47.053		Continuing	Continuing	
Remarks:												
Development Support	WR	SSC SD (San Diego, CA)	7.015	0.245	10/02	0.244	10/03	0.238	10/04	Continuing	Continuing	
Integrated Logistics Support	T&M	PMTO		0.238	10/02	0.348	10/03	0.321	10/04	Continuing	Continuing	
Studies & Analysis	WR	NAVSEA	5.116	0.210	04/03	0.210	10/03			Continuing	Continuing	
Subtotal Support			12.131	0.693		0.802		0.559		Continuing	Continuing	
Remarks:												

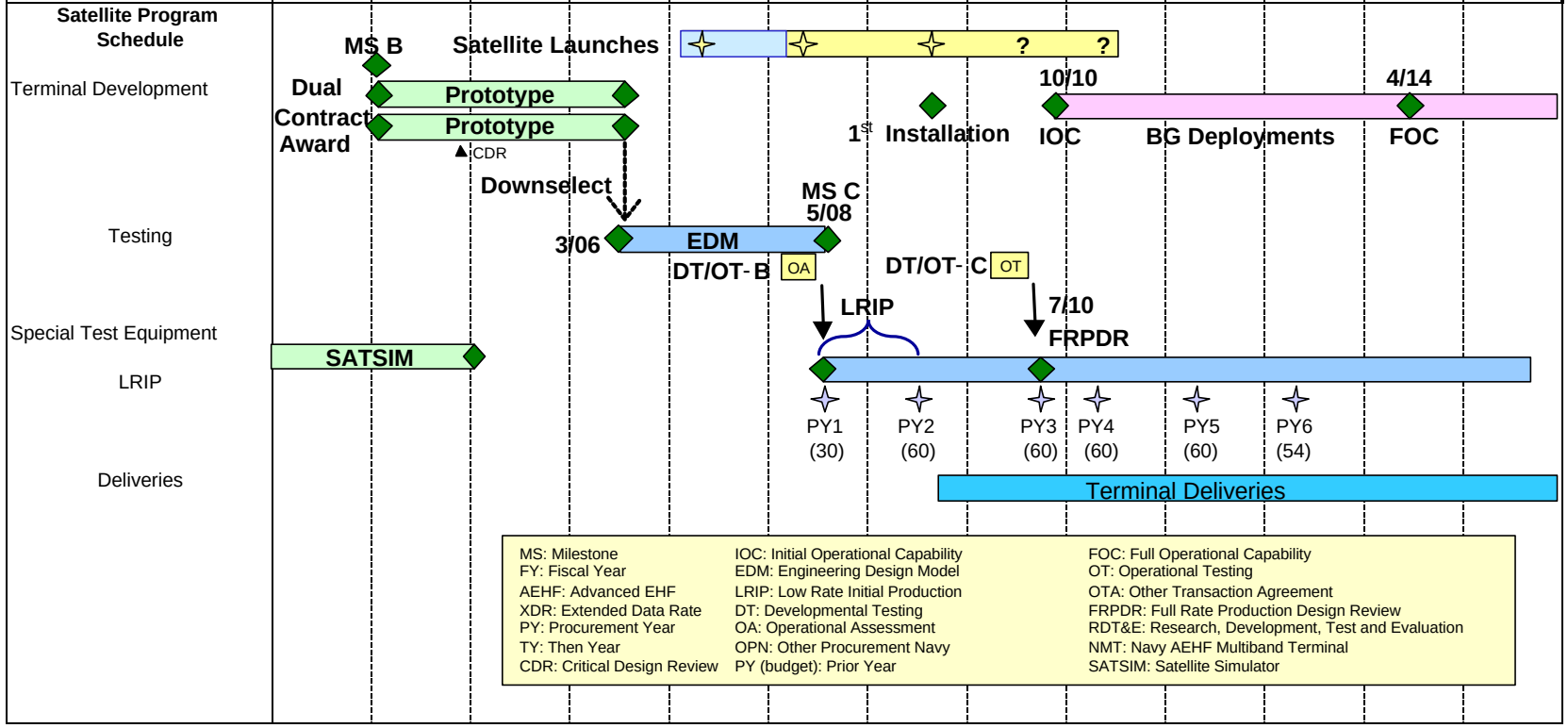
CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2004**			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**		PROGRAM ELEMENT 0303109N - Satellite Communications (Space)			PROJECT NUMBER AND NAME 0728 EHF SATCOM Terminals						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 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	Various	9.302	0.820	10/02	0.008	10/03	0.689	10/04	Continuing	Continuing	
Operational Test & Evaluation	WR	Various		0.556	10/02					Continuing	Continuing	
Subtotal T&E			9.302	1.376		0.008		0.689		Continuing	Continuing	
Remarks:												
Contractor Engineering Support	CPAF	PMTO		1.549	10/02	0.931	10/03	0.993	10/04	Continuing	Continuing	
Program Management Support	Various	Various		0.981	10/02	1.240	10/03	0.951	10/04	Continuing	Continuing	
Travel		Gov't Travel		0.052	10/02	0.115	10/03	0.100	10/04	Continuing	Continuing	
Subtotal Management			0.000	2.582		2.286		2.044		Continuing	Continuing	
Remarks:												
Total Cost			103.669	37.177		57.774		50.345		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 190

CLASSIFICATION:

EXHIBIT R4, Schedule Profile	DATE: February 2004	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT NUMBER AND NAME 0303109N - Satellite Communications (Space)	PROJECT NUMBER AND NAME 0728 EHF SATCOM Terminals



Note:
Refects development of 20 EDMs

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **February 2004**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT 0303109N - Satellite Communications (Space)			PROJECT NUMBER AND NAME 0728 EHF SATCOM Terminals			
Schedule Profile	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Milestone B (MSB)		1Q					
Contract Award		1Q					
Prototype Complete				2Q			
Engineering Development Model (EDM) Begins (Quantity = 20)				3Q			
Developmental Testing (MS B)					4Q		
Operational Testing (Platform Operational Assessment) (MS B)						1Q	
Milestone C (MS C)						3Q	
Start Low-Rate Initial Production I (LRIP I)						3Q	
Start Low-Rate Initial Production II							1Q
Low-Rate Initial Production I Delivery							3Q
Developmental Testing (MS C)							4Q

R-1 SHOPPING LIST - Item No. 190

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: **February 2004**			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT NUMBER AND NAME PE: 0303109N Satellite Communications (Space)					PROJECT NUMBER AND NAME 0731 Fleet Satellite Comm					
COST ($ in Millions)	Prior Years Cost	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009		Cost to Complete	Total Program
Project Cost	**98.076**	**0.633**	**0.578**	**0.644**	**1.493**	**1.775**	**1.812**	**1.848**		**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 Automated Digital Network System (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 resource (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.

R-1 SHOPPING LIST - Item No. 190

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N /BA-7	PE: 0303109N Satellite Communications (Space)	0731 Fleet Satellite Comm

(U) B. Accomplishments/Planned Program

	FY 03	FY 04	FY 05
SCI Networks	0.633	0.578	0.644

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 FY03. 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. 190

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	PE: 0303109N Satellite Communications (Space)	0731 Fleet Satellite Comm

(U) C. PROGRAM CHANGE SUMMARY:

(U) Funding:	FY 2003	FY 2004	FY 2005
FY04 President's Budget:	0.653	0.585	1.468
FY05 President's Budget:	0.633	0.578	0.644
Total Adjustments	-0.020	-0.007	-0.824
Summary of Adjustments			
Issue 68849 FY2003 Update	-0.020		
Issue 68041 Sec 8094 Mgmt Improvements		-0.002	
Issue 68066 Sec 8126 Efficiencies/Revised Econ Assumption		-0.005	
Issue 69492 PBD 604 Inflation			-0.002
Issue 19012 Technical Issue: JMINI			-0.822
Subtotal	-0.020	-0.007	-0.824

(U) Schedule:

OT-IIIA for surface ships in 4Q/04 and OT-IIB for submarines in 1Q/04.

(U) Technical:

Not Applicable

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	PE: 0303109N Satellite Communications (Space)	0731 Fleet Satellite Comm

(U) D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
3050 – Comm Auto - SCI NETWORKS*	15.536	5,346	814	4,496	4,584	4,530	4,607	Continuing	Continuing
3215 – SATCOM - JMINI-NMS	5.416	9.358	7.070	0.000	0.000	0.000	0.000	Continuing	21.844

*Includes terminal installation costs.

(U) E. ACQUISITION STRATEGY:

SCI-NETWORKS: Program is utilizing Cost Plus Fixed Fee contract vehicle.
JMINI-NMS: Program is utilizing Cost Plus Fixed Fee contract vehicle.

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**		PROGRAM ELEMENT PE: 0303109N Satellite Communications (Space)			PROJECT NUMBER AND NAME 0731 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
Con	FPI	Titan	6.309								6.309	
Primary Hardware Development	FFP	SRC	18.505								18.505	
Primary Hardware Development	PO	NAVSUP/SRC	5.223								5.223	
Primary Hardware Development	Var	Various	16.491	0.633	12/02	0.578	12/03	0.644	12/04	Continuing	Continuing	
Primary Hardware Development	CPFF	CSC	3.588								3.588	
Primary Hardware Development	PO	NAVAIR/ISC	1.176								1.176	
Primary Hardware Development	Var	Various	9.344								9.344	
Primary Hardware Development	FFP	Motorola	8.045								8.045	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Product Development			68.681	0.633		0.578		0.644		0.000	70.536	

Remarks:

R-1 SHOPPING LIST - Item No. 190

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**		PROGRAM ELEMENT PE: 0303109N Satellite Communications (Space)			PROJECT NUMBER AND NAME 0731 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
Development Support											0.000	
Software Development											0.000	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
Studies & Analyses											0.000	
GFE											0.000	
Award Fees											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
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											0.000	
											0.000	
											0.000	
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	

Remarks:

R-1 SHOPPING LIST - Item No. 190

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: **February 2004**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**		PROGRAM ELEMENT PE: 0303109N Satellite Communications (Space)				PROJECT NUMBER AND NAME 0731 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	0.633		0.578		0.644		0.000	99.931	
Remarks:												

R-1 SHOPPING LIST - Item No. 190

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																													
																				DATE: **February 2004**									
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**					PROGRAM ELEMENT NUMBER AND NAME 0303109N, Satellite Communications (Space)												PROJECT NUMBER AND NAME 0731 FLT SATCOM / SCI NETWORKS													
Fiscal Year	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
Acquisition Milestones					MS IIIB Submarine					MS IIIC Surface/ Submarine																		
						DT IIIB Lab																							
Test & Evaluation Milestones			DT IID Techeval Sub				DT IIIC																					
Development Test																												
Operational Test						OT IIB Submarine		OT IIIA																				
Production Milestones																												
Deliveries																												

R-1 SHOPPING LIST - Item No. 190

Exhibit R-4a, Schedule Detail						DATE: **February 2004**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT 0303109N, Satellite Communications (Space)				PROJECT NUMBER AND NAME 0731, FLT SATCOM - / SCI NETWORKS		
Schedule Profile	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Milestone Decision (MS-IIIA)							
Milestone Decision (MS-IIIB)		1Q					
Milestone Decision (MS-IIIC)			2Q				
Developmental Testing (DT-IIIA)							
Developmental Testing (DT-IIIB)		1Q					
Developmental Testing (DT-IIIC)		3Q					
Operational Testing (OT-IIIA)		4Q					
Operational Testing (OT-IIB)		1Q					
Developmental Testing (DT-IID)	4Q						

CLASSIFICATION:

EXHIBIT R4, Schedule Profile

DATE: **February 2004**

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

PROGRAM ELEMENT NUMBER AND NAME: PE: 0303109N Satellite Communications (Space)

PROJECT NUMBER AND NAME: 0731 Fleet Satellite Comm - JMINI

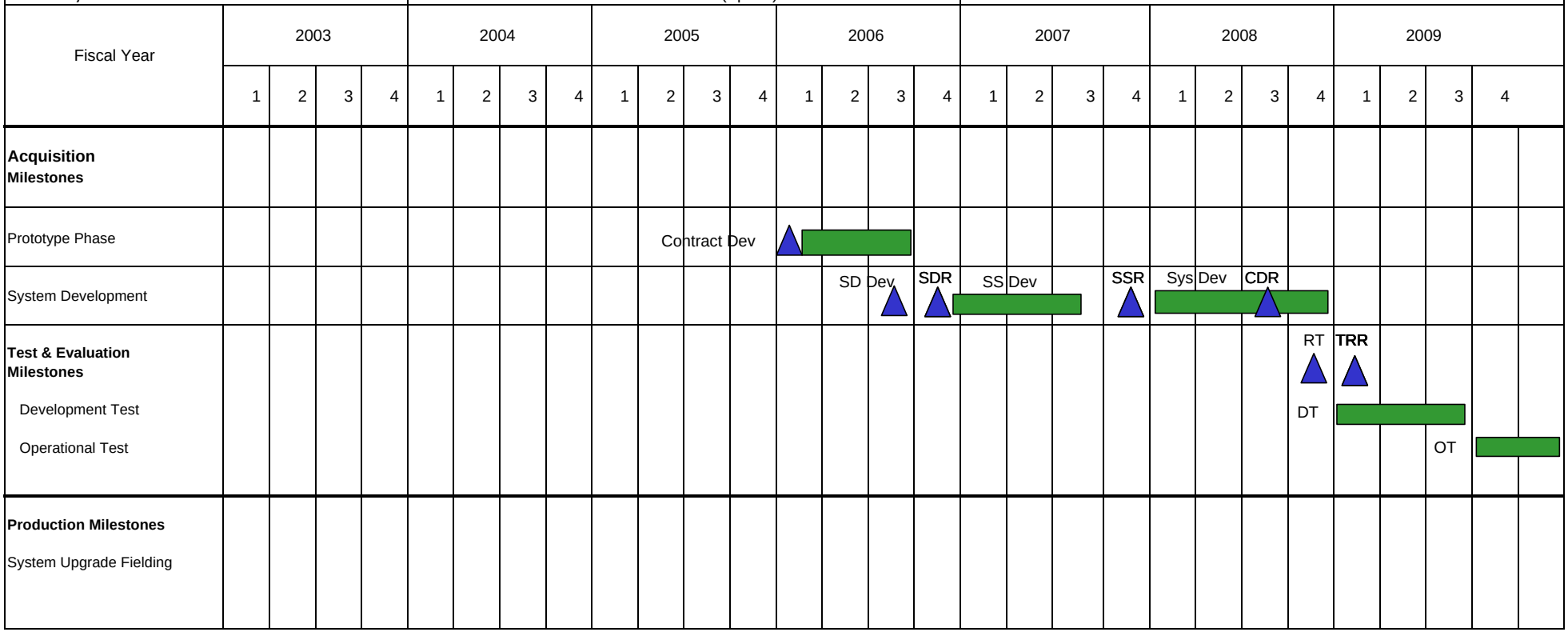


Exhibit R-4a, Schedule Detail					DATE: **February 2004**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT PE: 0303109N Satellite Communications (Space)				PROJECT NUMBER AND NAME 0731 Fleet Satellite Comm - JMINI		
Schedule Profile	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Prototype Phase				1Q - 3Q			
Contract Development				1Q			
Software Design Development				3Q			
Software Design Review (SDR)				4Q			
Software Specification Development				4Q	1Q - 3Q		
Software Specification Review (SSR)					4Q		
System Development						1Q - 4Q	
Critical Design Review (CDR)						3Q	
Regression Testing						4Q	1Q
Test Readiness Review (TRR)							1Q
Developmental Testing							1Q - 3Q
Operational Evaluation							4Q

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: **February 2004**			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT NUMBER AND NAME 0303109N Satellite Communications (Space)					PROJECT NUMBER AND NAME 2472 Mobile User Segment					
COST ($ in Millions)	Prior Years Cost	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009		Cost to Complete	Total Program
Project Cost	**68.209**	**66.979**	**195.019**	**503.651**	**621.268**	**661.558**	**561.584**	**209.618**		**161.114**	**3,049.000**
RDT&E Articles Qty					**1**	**1**					**2**

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

(U) This program provides for the development of the next generation DoD narrowband communications satellite constellation, the Mobile User Objective System (MUOS).

(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 in 2010. The MUOS program builds on state-of-the-art technologies and best commercial practices to develop a totally responsive joint warfighter system. In addition, new user requirements have been identified and advanced concepts developed to incorporate new programs and technologies which address the significant growth in requirements for military narrowband communications, as required per the approved joint interest MUOS Operational Requirements Document (ORD).

(U) This RDT&E effort supports the program objectives by assisting in identifying the most effective way to field a new system by FY 2009. Two Component Advanced Development (CAD) contracts were awarded in Q4 FY 2002. The CAD contracts continue into FY 2004. In FY 2004, a single Risk Reduction & Design Development (RRDD) contract will be awarded after Key Decision Point (KDP) B in Q2 FY 2004.

Note: Prior Years Cost reflects MUOS costs only.

R-1 SHOPPING LIST - Item No. 190

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA7	0303109N Satellite Communications (Space)	2472 Mobile User Segment

(U) B. Accomplishments/Planned Program

	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	66.979	195.019	503.651
RDT&E Articles Quantity			

(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. Complete MUOS CAD contracts and associated system engineering tasks.

(U) FY05: Continue funding for MUOS RRDD contract and associated system engineering tasks.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0303109N Satellite Communications (Space)	2472 Mobile User Segment

(U) C. PROGRAM CHANGE SUMMARY:

(U) Funding:	FY 2003	FY 2004	FY 2005
FY04 President's Budget	59.018	315.801	428.177
FY05 President's Budget	66.979	195.019	503.651
Total Adjustments	7.961	-120.782	75.474
Summary of Adjustments			
Issue 65943 Federal Technolgy Transfer	-0.025		
Issue 66561 MUOS/AEHF BTR	8.000		
Issue 68849 FY2003 Update	-0.385		
Issue 66544 FY03 Midyear Review Adjustments	1.900		
Issue 66556 FY03 SBIR 5-May-03	-1.529		
Issue 66778 MUOS AEHF FY04 BTR		-8.000	
Issue 68041 Management Improvements		-0.522	
Issue 68060 FFRDC Reduction		-0.112	
Issue 68066 Efficiencies/Reivised Econ. Assumption		-2.146	
Issue 68580 MUOS insufficient justification/burn rate		-110.000	
Issue 66961 SPAWAR Service Cost Center Adj		-0.002	-0.003
Issue 19000 HQ support			-0.344
Issue 19022 Realign O&MN to RDT&E			5.364
Issue 67767 NWCF Rates SPAWAR SSC			-0.003
Issue 67689 Manpower			-0.008
Issue 66923 Restructure of 2 MUOS Satellites			70.458
Issue 69025 WCF - R&D - SPAWAR - PBD 430			-0.001
Issue 69045 PBD 426 Rates -SSC			0.004
Issue 69459 spread 728 rounding			0.042
Issue 69492 PBD-604 inflation			-1.626
Issue 69512 PBD 604 non purchase inflation			-0.289
Issue 69650 P07 Technical Adjustments			-0.206
Issue 69928 Technical Adjustment to match CIS			2.086
Subtotal	7.961	-120.782	75.474

(U) Schedule:

Award of two MUOS RRDD contract moved from 2nd Qtr 04 to 3rd Qtr 04.

(U) Technical:

Not Applicable

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0303109N Satellite Comminications (Space)	2472 Mobile User Segment

(U) D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
2433 - Fleet Satellite Communications Follow-on					229.427	615.872	625.939	1,571.762	3,043.000

(U) E. ACQUISITION STRATEGY: *

Concept Exploration contracts were awarded in early FY 2000 and completed in late FY 2001. Two Component Advancement Development (CAD) contracts were awarded in Q4 FY 2002. A RRDD contract will be awarded in 3Q FY04 with production options starting in 1Q FY07 with first launch (IOC) in 2009.

(U) F. MAJOR PERFORMERS: **

Lockheed Martin CAD
Raytheon CAD

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**			PROGRAM ELEMENT 0303109N Satellite Communications (Space)			PROJECT NUMBER AND NAME 2472 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	58.462	1Q	168.100	2Q	479.151	1Q	2,083.142	2,845.994	1,336.239
											0.000	
AoA for MUOS	MIPR		2.782								2.782	
Government Studies	VAR		0.711								0.711	
Crypto Procurement						1.200					1.200	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Product Development			60.632	58.462		169.300		479.151		2,083.142	2,850.687	

Remarks:

Development Support											0.000	
Software Development											0.000	
Integrated Logistics Support			0.301							0.000	0.301	
Configuration Management											0.000	
Technical Data											0.000	
Studies & Analyses											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Support			0.301	0.000		0.000		0.000		0.000	0.301	

Remarks:

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: **February 2004**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**		PROGRAM ELEMENT 0303109N Satellite Communications (Space)				PROJECT NUMBER AND NAME 2472 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				0.070						2.000	2.070	
Operational Test & Evaluation										2.000	2.000	
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	0.070		0.000		0.000		4.000	4.070	
Contractor Engineering Support	VAR		4.876	6.555		10.019		10.035		55.900	87.385	
Government Engineering Support	VAR		1.400	0.346		3.200		3.200		10.000	18.146	
Program Management Support	VAR		1.000	1.251		12.000		10.765		59.600	84.616	
Travel				0.295		0.500		0.500		2.500	3.795	
Transportation											0.000	
											0.000	
Subtotal Management			7.276	8.447		25.719		24.500		128.000	193.942	
Remarks:												
Total Cost			68.209	66.979		195.019		503.651		2,215.142	3,049.000	
Remarks:												

R-1 SHOPPING LIST - Item No. 190

CLASSIFICATION:

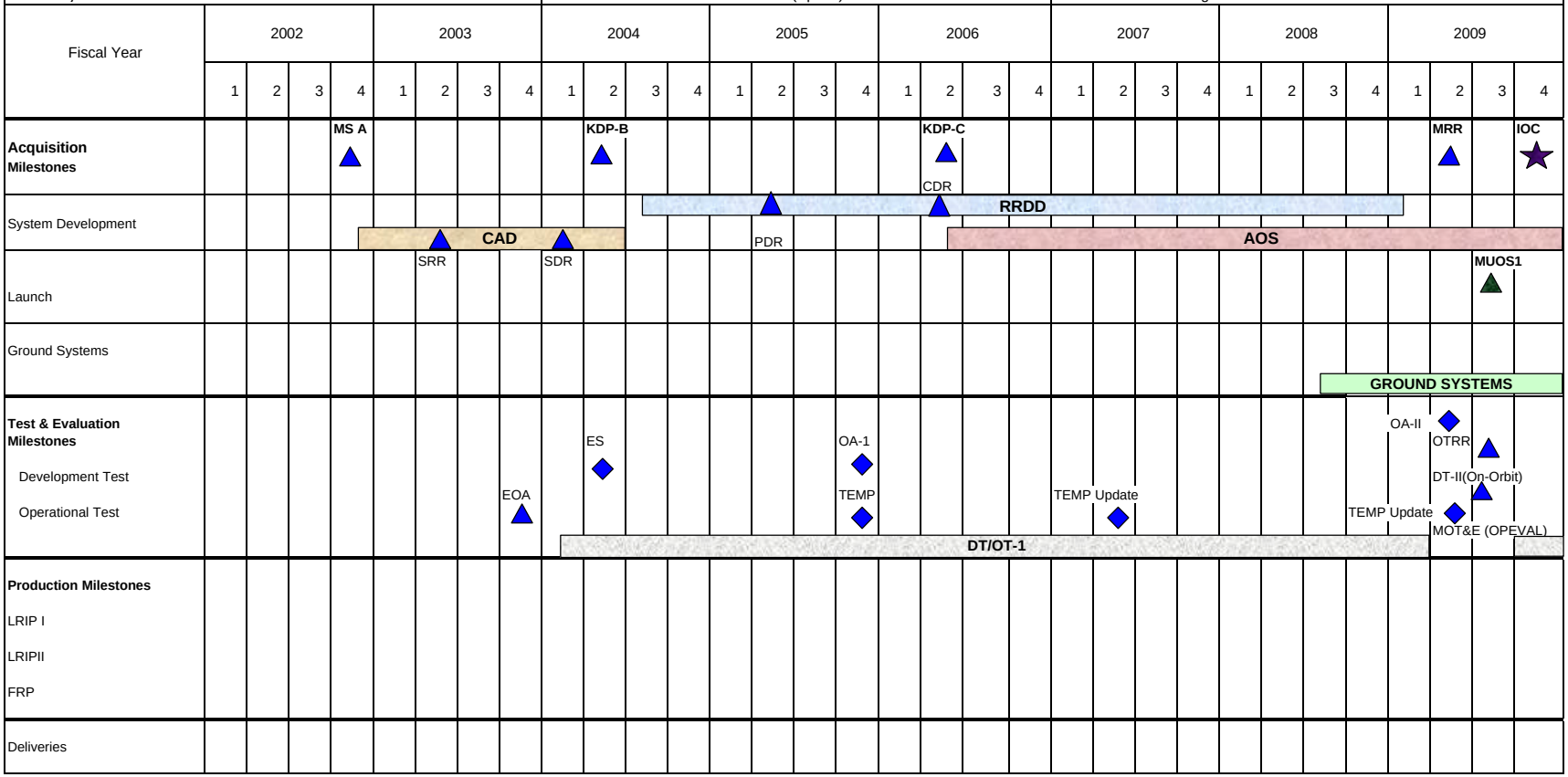
EXHIBIT R4, Schedule Profile

DATE: **February 2004**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-7**

PROGRAM ELEMENT NUMBER AND NAME: 0303109N Satellite Communications (Space)

PROJECT NUMBER AND NAME: 2472 - Mobile User Segment



R-1 SHOPPING LIST - Item No. 190

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

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **February 2004**		
APPROPRIATION/BUDGET ACTIVITY **RDT&BA-7**	PROGRAM ELEMENT 0303109N Satellite Communications (Space)				PROJECT NUMBER AND NAME 2472 Mobile User Segment			
Schedule Profile		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Milestone A								
Component Advanced Development (CAD)		1Q-4Q	IQ-2Q					
Early Operational Assessment (EOA)			1Q					
System Requirements Review		2Q						
Evaluation Strategy (ES)			2Q					
System Design Review (SDR)			1Q					
Key Decision Point B			2Q					
Preliminary Design Review (PDR)				2Q				
Test and Evaluation Master Plan (TEMP)				4Q				
Deveolpmental Testing (DT)/Operational Testing(OT-1)			1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-3Q	
Key Decision Point C					2Q			
Critical Design Review (CDR)					2Q			
Operational Assessment (OA-I)				2Q				
Test and Evaluation Master Plan (TEMP) Update						2Q		
Risk Reduction and Design Development (RRDD)			3Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
Acquisition & Operations Support (AOS)						1Q-4Q	1Q-4Q	1Q-4Q
Launch 1 (M1)								3Q
Ground System (1)							3Q	
Mission Readiness Review (MRR)							2Q	
IOC								4Q
Operational Assessment (OA-II)							1Q	
Test and Evaluation Master Plan (TEMP) Update								3Q
Opertional Test Readiness Review (OTRR) for MOT&E								3Q
Developmental Testing (DT-IIA) (On-Orbit)								3Q
Multi-Service Opertional Testing & Evaluation ((OPEVAL) (MOT&E)								4Q
Follow-On Test Evaluation (FOT&E)								

R-1 SHOPPING LIST - Item No. 190

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: **February 2004**			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT NUMBER AND NAME 0303109N - Satellite Communications (Space)					PROJECT NUMBER AND NAME 9122 Transformational Communications (previously named Advanced Wideband)					
COST ($ in Millions)	Prior Years Cost	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009		Cost to Complete	Total Program
Project Cost	**0.000**	**5.674**	**12.564**	**18.452**	**62.702**	**104.263**	**77.371**	**73.158**		**Continuing**	**Continuing**
RDT&E Articles Qty					**4**	**12**					**16**

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

(U) The Navy Transformational Communications 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.

R-1 SHOPPING LIST - Item No. 190

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0303109N - Satellite Communications (Space)	9122 Transformational Communications

(U) B. Accomplishments/Planned Program

	FY 03	FY 04	FY 05
TC Concept Development	5.674	12.564	18.452
RDT&E Articles Quantity			

(U) **FY03**: Began development of wideband tactical, protected tactical, and broadcast terminals to operate with Transformational Communications (TC) Architecture. Began development of strategic terminals that will operate with the protected satellites in mid-latitude and polar regions. Development included concept exploration and systems engineering analysis. Investigated optimum methods to implement software programmable, modular, reconfigurable, and upgradeable SATCOM terminals. Investigated multi-band feed and phased array options. Terminal modem concepts were explored. Began process of exploring and documenting risk areas. Terminal designs were explored to mitigate these risk areas.

(U) **FY04**: Continue concept exploration systems engineering 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.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0303109N - Satellite Communications (Space)	9122 Transformational Communications

(U) C. PROGRAM CHANGE SUMMARY:

(U) Funding:	FY 2003	FY 2004	FY 2005
FY 04 Presidents Budget	5.854	12.706	18.599
FY 05 Presidents Budget	5.674	12.564	18.452
Total Adjustments	-0.180	-0.142	-0.147
Summary of Adjustments			
Issue 66556 FY03_SBIR_	-0.120		
Issue 68849 FY 2003 Update	-0.060		
Issue 68041 Section 8094: Management Improvements		-0.034	
Issue 68066 Sec. 8126: Efficiencies/Revised Econ. Assumption		-0.108	
Issue 69492 PBD-604 Inflation			-0.049
Issue 69512 PBD-604 non purchase inflation			-0.011
Issue 69650 P07 Technical Adjustments			-0.008
Issue 67689 Manpower			-0.079
Subtotal	-0.180	-0.142	-0.147

(U) Schedule:

Program Office will begin Acquisition Strategy development and refinement in FY04. Currently Milestone B is projected in FY06. A draft schedule is provided in R4 exhibit.

(U) Technical:

Not Applicable.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0303109N - Satellite Communications (Space)	9122 Transformational Communications

(U) D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
321500 - OPN Ship and Shore*	NA	NA	NA	NA	NA	24.193	90.345	1309.87	1424.466

(U) E. ACQUISITION STRATEGY: *

TBD until the system architecture is defined by the ongoing Transformational Communication Study.

(U) F. MAJOR PERFORMERS: **

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2004**			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**		PROGRAM ELEMENT 0303109N - Satellite Communications (Space)			PROJECT NUMBER AND NAME 9122 Transformational Communications						
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	Various	Various	NA	3.053	10/03	9.303	12/03	14.263	10/04	Continuing	Continuing	
Ancillary Hardware Development											0.000	
Systems Engineering	Various	Various		1.070	10/02	0.289	10/03	0.811	10/04	Continuing	Continuing	
Systems Engineering	WR	NUWC		0.350	10/02	0.545	10/03			Continuing	Continuing	
											0.000	
										Continuing	Continuing	
										Continuing	Continuing	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Product Development			0.000	4.473		10.137		15.074		Continuing	Continuing	
Remarks:												
Development Support	WR	SSC SD		0.086	03/03	0.774	10/03	1.043	10/04	Continuing	Continuing	
Integrated Logistics Support											0.000	
Studies & Analyses	Various	Various		1.115	03/03	1.162	10/03	1.378	10/04	Continuing	Continuing	
											0.000	
											0.000	
										Continuing	Continuing	
										Continuing	Continuing	
											0.000	
Subtotal Support			0.000	1.201		1.936		2.421		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 190

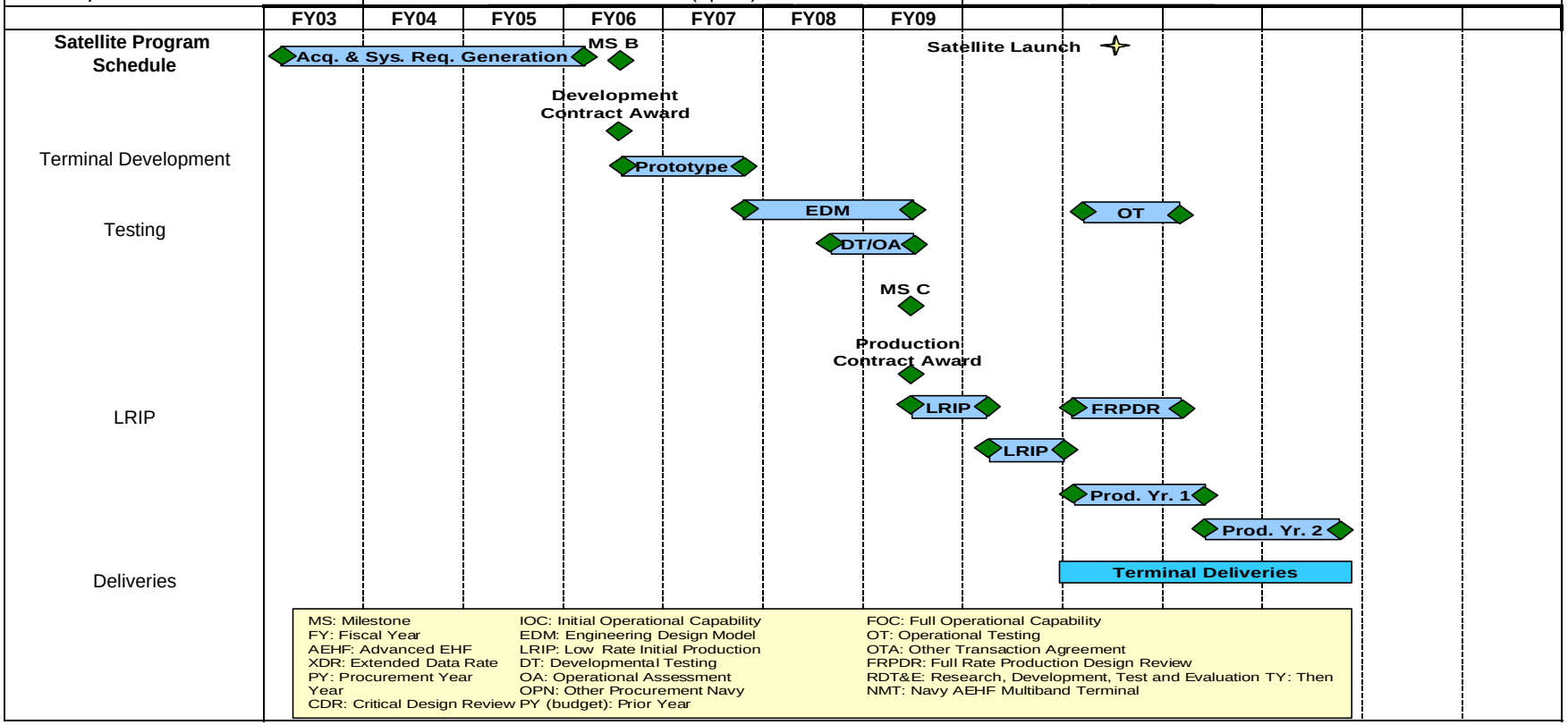
CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: **February 2004**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**			PROGRAM ELEMENT 0303109N - Satellite Communications (Space)			PROJECT NUMBER AND NAME 9122 Transformational Communications						
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	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal T&E			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Contractor Engineering Support											0.000	
Development Support											0.000	
Program Management Support	Various	Various				0.451	10/03	0.957	10/04	Continuing	Continuing	
Studies & Analyses											0.000	
Travel						0.040	10/03				0.040	
											0.000	
Subtotal Management			0.000	0.000		0.491		0.957		Continuing	Continuing	
Remarks:												
Total Cost			0.000	5.674		12.564		18.452		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 190

CLASSIFICATION:

EXHIBIT R4, Schedule Profile		DATE: February 2004
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT NUMBER AND NAME 0303109N - Satellite Communications (Space)	PROJECT NUMBER AND NAME 9122 Transformational Communications



CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **February 2004**		
APPROPRIATION/BUDGET ACTIVITY **RDT&BA-7**		PROGRAM ELEMENT 0303109N - Satellite Communications (Space)				PROJECT NUMBER AND NAME 9122 Transformational Communications		
Schedule Profile		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
	Milestone B (MSB)				2Q			
	Contract Award				2Q			
	Prototype Complete					4Q		
	Engineering Development Model (EDM) Begins					4Q		
	Developmental Testing / Operational Assessment						3Q	
	Milestone C (MS C)							1Q
	Start Low-Rate Initial Production I (LRIP I)							1Q

R-1 SHOPPING LIST - Item No. 190

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification									DATE: **February 2004**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT NUMBER AND NAME 0303109N Satellite Communications (Space)					PROJECT NUMBER AND NAME X9429 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				**1.730**							**1.730**
RDT&E Articles Qty											**0**

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

FY 2004 Congressional add for Covert Communications required for operational utilization.

R-1 SHOPPING LIST - Item No. 190

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N /BA-7	0303109N Satellite Communications (Space)	X9429 SPAWAR Covert Communication and Information Transfer

(U) B. Accomplishments/Planned Program

	FY 03	FY 04	FY 05
CCIT		1.730	
RDT&E Articles Quantity			

FY04: SPAWAR Covert Communication and Information Transfer

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0303109N Satellite Communications (Space)	X9429 SPAWAR Covert Communication and Information Transfer

(U) C. PROGRAM CHANGE SUMMARY:

(U) Funding:	FY 2003	FY 2004	FY 2005
FY04 President's Budget:		0.000	
FY05 President's Budget:		1.730	
Total Adjustments	0.000	1.730	0.000
Summary of Adjustments			
Issue 68581 Covert Communications and Information Transfer		1.750	
Issue 68041 Section 8094: Management Improvements		-0.005	
Issue 68066: Section 8126 Efficiencies/Revised Econ. Assumptions		-0.015	
Subtotal	0.000	1.730	0.000

(U) Schedule:

Not Applicable

(U) Technical:

Not Applicable

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0303109N Satellite Communications (Space)	X9429 SPAWAR Covert Communication and Information Transfer

(U) D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost

(U) E. ACQUISITION STRATEGY:

Not Applicable

(U) F. MAJOR PERFORMERS:

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)										DATE: **February 2004**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**		PROGRAM ELEMENT 0303109N Satellite Communications (Space)			PROJECT NUMBER AND NAME X9429 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
Primary Hardware Development											0.000	
Ancillary Hardware Development											0.000	
Aircraft Integration											0.000	
Ship Integration											0.000	
Ship Suitability											0.000	
Systems Engineering	PO	SSC				1.730					1.730	
Training Development											0.000	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Product Development			0.000	0.000		1.730		0.000		0.000	1.730	

Remarks:

R-1 SHOPPING LIST - Item No. 190

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification									DATE: February 2004		
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 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Total PE Cost	**156.934**	**0.000**	**25.733**	**25.366**	**18.676**	**17.637**	**20.673**	**21.197**	**21.536**	**Continuing**	**Continuing**
0734 Information Systems Security	**154.533**		**16.065**	**15.876**	**16.539**	**15.535**	**18.624**	**19.000**	**19.387**	**Continuing**	**Continuing**
0734 Information Assurance	**0.000**		**4.090**	**2.271**	**2.137**	**2.102**	**2.049**	**2.197**	**2.149**	**Continuing**	**Continuing**
2987 Intelligent Agent Security Module	**2.401**		**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**2.401**
9280 KG-40A Modernization Program	**0.000**		**1.264**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**1.264**
9281 Intelligent Agent Security Module	**0.000**		**4.314**	**5.439**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**9.753**
9430 SECURE Kit	**0.000**		**0.000**	**1.780**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	
Quantity of RDT&E Articles											

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

(U) 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.

(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.

(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.

R-1 SHOPPING LIST - Item No. 191

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification	DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7**	R-1 ITEM NOMENCLATURE 0303140N Information Systems Security Program (ISSP)

(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.

(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.

(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.

(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.

R-1 SHOPPING LIST - Item No. 191

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification									DATE: **February 2004**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT NUMBER AND NAME 0303140N Information Systems Security Program (ISSP)					PROJECT NUMBER AND NAME 0734 Information Systems Security					
COST ($ in Millions)	Prior Years Cost		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	**154.533**		**16.065**	**15.876**	**16.539**	**15.535**	**18.624**	**19.000**	**19.387**	**Continuing**	**Continuing**
RDT&E Articles Qty											

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Navy Information Systems Security Program (ISSP), RDT&E provides Information Assurance (IA) solutions for the United States Navy (USN) forward deployed, highly mobile information subscriber. 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.

(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).

(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.

(U) In addition to protecting National Security information, ISSP RDT&E must provide enterprise-wide assurance for statutorily protected information under the Privacy Act of 1974, Computer Matching and Privacy Protection Act of 1988, Medical Records Confidentiality Act of 1995, Model State Public Health Privacy Act, 45 CFR subtitle A sub-chapter C, parts 160- 164, 1999, and the Federal Education Records Privacy Act. ISSP RDT&E efforts must also provide assurance to the broad spectrum of Sensitive-but-Unclassified (SBU) information such as financial, personnel, contractor proprietary, and procurement sensitive.

(U) The ISSP today includes much more than legacy Computer Security (COMSEC)and Network Security (NETSEC) technology. IA, or Defensive Information Operations, exists to counter a wide variety of threats in a Navy environment. ISSP activities cover all telecommunications systems, and RDT&E projects must provide protection, detection, and reaction capabilities to the operational commander. ISSP RDT&E provides dynamic risk managed IA solutions to the Navy Information Infrastructure, not just security devices placed within a network.

(U) Few technology areas change as fast as telecommunications and computers, and IA must keep pace. This results in the continuing need to evaluate, develop, and/or test IA products and approaches. Technology base efforts include developing or applying: (1) new secure voice prototypes; (2) technology for a new family of programmable COMSEC and TRANSEC modules; (3) security appliances and software for switched and routed networks; (4) technology to interconnect networks of dissimilar classification, 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).

(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.

R-1 SHOPPING LIST - Item No. 191

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0303140N Information Systems Security Program (ISSP)	0734 Information Systems Security

(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).

(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.

(U) The following describes several major ISSP technology areas:

(U) Under the Navy Secure Voice (NSV) program, ISSP RDT&E assesses technology to provide high grade, secure tactical and strategic voice connectivity.

(U) Under the Navy 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.

(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:

- 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. 191

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0303140N Information Systems Security Program (ISSP)	0734 Information Systems Security

• Provide a cryptographic infrastructure that supports key, privilege and certificate management; and that enables positive identification of individuals utilizing network services.

• Provide an intrusion detection, reporting, analysis, assessment, and response infrastructure that enables rapid detection and reaction to intrusions and other anomalous events, and that enables operational situation awareness.

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

R-1 SHOPPING LIST - Item No. 191

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0303140N Information Systems Security Program (ISSP)	0734 Information Systems Security

(U) B. Accomplishments/Planned Program

	FY 03	FY 04	FY 05
Network Security Mission Capability Team (MCT)	6.286	2.613	2.963
RDT&E Articles Quantity			

FY03 Accomplishments include:
$6.286- Continued 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. Provided 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. Included 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 included 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. Designed architectures and evaluated 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. 191

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0303140N Information Systems Security Program (ISSP)	0734 Information Systems Security

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.

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.

R-1 SHOPPING LIST - Item No. 191

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0303140N Information Systems Security Program (ISSP)	0734 Information Systems Security

	FY 03	FY 04	FY 05
Crypto MCT	4.873	4.765	3.957
RDT&E Articles Quantity			

FY03 Accomplishments include:
$4.873-Provided 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. Included 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. Provided 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). Included design, evaluation, integration, and testing of key-related platforms, such as smart cards, and authentication mechanisms, such as biometric devices. Provided systems security engineering, test, evaluation, and development program support for organizations utilizing cryptographic equipments and associated keying systems. Provided 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. Provided specific design, testing, and evaluation assistance for new USN platforms and assists in defining embedded cryptographic product engineering requirements. Developed 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. FY 03 efforts included increased support for embedded cryptographic products in DD(X) and JTRS.

FY04 Plans include:
$4.765- 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:
$3.957- 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.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0303140N Information Systems Security Program (ISSP)	0734 Information Systems Security

	FY 03	FY 04	FY 05
Information Assurance Readiness MCT	2.222	0.276	0.313
RDT&E Articles Quantity			

FY03 Accomplishments include:
$2.222- Continued 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. Supported the Fleet Information Warfare Center (FIWC), the Naval Security Group Activity Pensacola, and the CTF-NMCI for continuing CNVA activities. Included 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. 191

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0303140N Information Systems Security Program (ISSP)	0734 Information Systems Security

	FY 03	FY 04	FY 05
Secure Voice MCT	1.946	0.828	0.939
RDT&E Articles Quantity			

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 Protocal (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 Centurty (SV-21) architectures.

FY 04 Plans Include:
$0.828- Continue to design, develop 21st Century Secure Voice Architecture including Secure Voice over Internet Protocal (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 Centurty (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 Protocal (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 Centurty (SV-21) architectures.

R-1 SHOPPING LIST - Item No. 191

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0303140N Information Systems Security Program (ISSP)	0734 Information Systems Security

	FY 03	FY 04	FY 05
Multiple Security Level MCT	0.738	0.845	0.959
RDT&E Articles Quantity			

FY03 Accomplishments include:
$0.738- Continued to provides systems security engineering development, testing, and evaluation for multi-level security solutions, including complicated evaluations involving allied and coalition participation. Developed solutions to 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. Included 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.

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.

R-1 SHOPPING LIST - Item No. 191

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0303140N Information Systems Security Program (ISSP)	0734 Information Systems Security

	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. 191

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0303140N Information Systems Security Program (ISSP)	0734 Information Systems Security

	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. 191

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0303140N Information Systems Security Program (ISSP)	0734 Information Systems Security

(U) C. PROGRAM CHANGE SUMMARY:

(U) Funding:	FY 2003	FY 2004	FY 2005
President's Budget:	15.453	16.107	16.642
Current BES/President's Budget	16.065	15.876	16.539
Total Adjustments	0.612	-0.231	-0.103
Summary of Adjustments			
Section 8100: Business Process Reform	-0.062		
Section 8135: Economic Assumptions	-0.112		
Section 8109: IT Cost Growth	-0.028		
Sec. 8094: Mgmt Improvements	0.000	-0.042	
Section 8029: FFRDC Reduction	-0.021	-0.021	
Sec. 8126: Efficiencies/Revised Econ Assumptions	0.000	-0.137	
SBIR Assessment	-0.144	0.000	0.000
Inflation Savings	-0.195	0.000	0.000
Miscellaneous Department Adjustments	0.000	0.000	0.000
Miscellaneous Navy Adjustments	1.180	-0.031	-0.062
P07 technical Adjustment	0.000	0.000	-0.008
Fed Tech Transfer	-0.006	0.000	0.000
PBD 430 - WCF - R&D	0.000	0.000	-0.013
PBD 426 - Rates - SSC	0.000	0.000	0.033
PBD 604 - Inflation	0.000	0.000	-0.053
Subtotal	0.612	-0.231	-0.103

(U) Schedule:

(U) Technical:

N/A.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
RDT&E, N / BA-7	0303140N Information Systems Security Program (ISSP)	0734 Information Systems Security	

(U) D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Complete	To Cost	Total
OPN 3415 Info Sys Security Program (ISSP)	83.941	81.213	88.418	112.601	122.542	118.239	118.457	Continued	Continued	
OMN 4A6M Info Sys Security Program (ISSP)	15.446	18.102	13.006	11.944	12.137	12.443	12.755	Continued	Continued	

(U) E. ACQUISITION STRATEGY: *

N/A.

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

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**		PROGRAM ELEMENT 0303140N Information Systems Security Program (ISSP)			PROJECT NUMBER AND NAME 0734 Information Systems Security							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 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	2.674	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	6.694	VAR	7.652	VAR	8.072	VAR	Continuing	Continuing	
Subtotal Product Development			107.705	12.597		12.299		12.856		Continuing	Continuing	

Remarks:
FY 03 $1.5M BTR for MCS contract Motorola/GDDS contract.

Software Development	CPAF	SAIC, San Diego, CA	32.877							0.000	32.877	42.590
Software Development	C/WX	NRL, Washjngton 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).

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2004**			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**		PROGRAM ELEMENT 0303140N Information Systems Security Program (ISSP)			PROJECT NUMBER AND NAME 0734 Information Systems Security						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 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	16.065		15.876		16.539		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 191

CLASSIFICATION:

EXHIBIT R4, Schedule Profile

DATE: **February 2004**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-7**

PROGRAM ELEMENT NUMBER AND NAME: 0303140N Information Systems Security Program (ISSP)

PROJECT NUMBER AND NAME: 0734 Information Systems Security

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								MCS Capability 1 Cert △				MCS Capability 2 Cert △				MCS Full Capability Cert △																
Development Test																																
Operational Test																																
Production Milestones							MCS Delivery 2A/3A Capability				MCS Delivery 2B/3B Capability																							
MCS/KO-9 Capability Delivery				MCS Delivery 1 Capability △				△			△				MCS Delivery 4 Capability △																	
Deliveries																																

R-1 SHOPPING LIST - Item No. 191

* Note: MCS Deliveries support the MCS Capability Certifications

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **February 2004**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT 0303140N Information Systems Security Program (ISSP)				PROJECT NUMBER AND NAME 0734 Information Systems Security			
Schedule Profile		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
EKMS Tier 1 Developmental Testing (GAT)								
EKMS Tier 1 Operational Testing		1Q						
EKMS Tier 1 IOC		1Q						
EKMS Tier 1 FOC		4Q						
Multifunctional Crypto System (MCS) Capability 1 Cert.		4Q						
Multifunctional Crypto System (MCS) Capability 2 Cert.			3Q					
Multifunctional Crypto System (MCS) Full Capability Cert.				1Q				
Multifunctional Crypto System (MCS) Delivery 1		2Q						
Multifunctional Crypto System (MCS) Delivery 2A		4Q						
Multifunctional Crypto System (MCS) Delivery 3A-1		4Q						
Multifunctional Crypto System (MCS) Delivery 3A-2		4Q						
Multifunctional Crypto System (MCS) Delivery 3A-3		4Q						
Multifunctional Crypto System (MCS) Delivery 3B			1Q					
Multifunctional Crypto System (MCS) Delivery 2B			1Q					
Multifunctional Crypto System (MCS) Delivery 4			4Q					

R-1 SHOPPING LIST - Item No. 191

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: **February 2004**			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT NUMBER AND NAME 0303140N Information Systems Security Program (ISSP)					PROJECT NUMBER AND NAME 0734 Information Assurance					
COST ($ in Millions)	Prior Years Cost		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	**0.000**		**4.090**	**2.271**	**2.137**	**2.102**	**2.049**	**2.197**	**2.149**	**Continuing**	**Continuing**
RDT&E Articles Qty											

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The goal of the Navy Information Systems Security Program (ISSP) is to ensure the continued protection of navy and joint information and information systems from hostile exploitation and attack. ISSP activities address the triad of Defense Information Operations: protection ,detection, and reaction. Evolving attack sensing (detection), warning, and response (reaction) responsibilities extend far beyond the traditional ISSP role in protection or Information Systems Security (INFOSEC). Focused on the highly mobile forward-deployed subscriber, the US Navy's adoption of Network-Centric Warfare (NCW) places demands upon the ISSP, as the number of users explodes and the criticality of their use escalates. Today, the ISSP protects an expanding core of services critical to the effective performance of the Navy's mission.

The rapid rate of change in the underlying commercial and government information infrastructures makes the provision of security an increasingly complex and dynamic problem. Information Assurance (IA) technology mix and deployment strategies must evolve quickly to meet rapidly evolving threats and vulnerabilities. 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.

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.

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.

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.

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.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0303140N Information Systems Security Program (ISSP)	0734 Information Assurance

(U) B. Accomplishments/Planned Program

	FY 03	FY 04	FY 05
Software and Systems Research	4.090	2.271	2.137
RDT&E Articles Quantity			

The program will develop common architectural frameworks that facilitate integration of network security capabilities, enable effective seamless interoperation, 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 interoperation among security levels and classifications. Ensure approaches address various security level technologies as well as emerging architectural methods of providing interoperability across different security levels. Examine multi-level aware applications and technologies including databases, web browsers, routers/switches, etc. Initiate infrastructure protection efforts as the Navy develops network centric architectures and warfare concepts, ensuring an evolutionary development of security architectures and products for IA that addresses Navy infrastructure requirements. Ensure the architectures evolve to provide proper protection as technology, DOD missions, and the threat all evolve. Include defensive protections as well as intrusion monitoring (sensors), warning mechanisms, and response capabilities in the architecture. Ensure the unique security and performance requirements of tactical systems, including those operating various security levels are addressed. Initiate the efforts to conceptualize new network centric warfare technology to protect our assets, such as secure network gateways and routers, and components and tools that improve the survivability of Navy networks. Provide systems security engineering, certification and accreditation support for high-confidence naval information system and ensure certification and accreditation approaches are consistent with Navy and DoD requirements.

R-1 SHOPPING LIST - Item No. 191

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0303140N Information Systems Security Program (ISSP)	0734 Information Assurance

(U) C. PROGRAM CHANGE SUMMARY:

(U) Funding:	FY 2003	FY 2004	FY 2005
President's Budget:	2.983	2.297	2.548
Current BES/President's Budget	4.090	2.271	2.137
Total Adjustments	1.107	-0.026	-0.411
Summary of Adjustments			
Section 8100: Business Process Reform	-0.012		
Section 8135: Economic Assumptions	-0.024		
Section 8109: IT Cost Growth	-0.005		
Inflation Savings	-0.038		
Miscellaneous Department Adjustment	0.000		
Miscellaneous Navy Adjustment	1.186		-0.004
Sec. 8094: Mgmt Improvements		-0.006	
Sec. 8126: Efficiencies/Revised Econ Assumptions		-0.020	
SEA Enterprise (LOE)			-0.400
PBD 604 - Inflation			-0.007
Subtotal	1.107	-0.026	-0.411

(U) Schedule:
N/A.

(U) Technical:
N/A

R-1 SHOPPING LIST - Item No. 191

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0303140N Information Systems Security Program (ISSP)	0734 Information Assurance

(U) D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Complete	To Cost	Total
OPN 3415 Info Sys Security Program (ISSP)	83.941	81.213	88.418	112.601	122.542	118.239	118.457	Continued	Continued	
OMN 4A6M Info Sys Security Program (ISSP)	15.446	18.102	13.006	11.944	12.137	12.443	12.755	Continued	Continued	

(U) E. ACQUISITION STRATEGY: *

N/A.

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

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**		PROGRAM ELEMENT 0303140N Information Systems Security Program (ISSP)			PROJECT NUMBER AND NAME 0734 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	4.090	10/02	2.271	10/03	2.137	10/04	Continuing	Continuing	
Subtotal Support			0.000	4.090		2.271		2.137		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 191

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: **February 2004**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**		PROGRAM ELEMENT 0303140N Information Systems Security Program (ISSP)				PROJECT NUMBER AND NAME 0734 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	4.090		2.271		2.137		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 191

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: February 2004			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT NUMBER AND NAME 0303140N Information Systems Security Program (ISSP)					PROJECT NUMBER AND NAME 9280 KG-40A Modernization Program					
COST ($ in Millions)	Prior Years Cost		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	**0.000**		**1.264**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**1.264**
RDT&E Articles Qty											**0**

(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.

(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.

R-1 SHOPPING LIST - Item No. 191

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0303140N Information Systems Security Program (ISSP)	9280 KG-40A Modernization Program

(U) B. Accomplishments/Planned Program

	FY 03	FY 04	FY 05
Cryptographic KG-40A Modernization	1.264	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.

R-1 SHOPPING LIST - Item No. 191

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0303140N Information Systems Security Program (ISSP)	9280 KG-40A Modernization Program

(U) C. PROGRAM CHANGE SUMMARY:

(U) Funding:	FY 2003	FY 2004	FY 2005
Previous President's Budget:	0.000	0.000	0.000
Current BES/President's Budget	1.264	0.000	0.000
Total Adjustments	1.264	0.000	0.000
Summary of Adjustments			
Congressional Add KG-40 Modernization	1.300		
Inflation Savings	-0.030		
SBIR Assessment	-0.006		
Subtotal	1.264	0.000	0.000

(U) Schedule:

N/A

(U) Technical:

N/A

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
RDT&E, N / BA-7	0303140N Information Systems Security Program (ISSP)	9280 KG-40A Modernization Program	

(U) D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Complete	To Cost	Total
OPN 3415 Info Sys Security Program (ISSP)	83.941	81.213	88.418	112.601	122.542	118.239	118.457	Continued	Continued	
OMN 4A6M Info Sys Security Program (ISSP)	15.446	18.102	13.006	11.944	12.137	12.443	12.755	Continued	Continued	

(U) E. ACQUISITION STRATEGY: *

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.

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

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**			PROGRAM ELEMENT 0303140N Information Systems Security Program			PROJECT NUMBER AND NAME 9280 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		1.081	02/04						1.081	
Training Development											0.000	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			0.000	1.081		0.000		0.000		0.000	1.081	
Remarks:												
Development Support											0.000	
Software Development											0.000	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
Studies & Analyses											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: **February 2004**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**		PROGRAM ELEMENT 0303140N Information Systems Security Progran			PROJECT NUMBER AND NAME 9280 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	1.264		0.000		0.000		0.000	1.264	
Remarks:												

R-1 SHOPPING LIST - Item No. 191

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification										DATE: February 2004	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT NUMBER AND NAME 0303140N Information Systems Security Program (ISSP)					PROJECT NUMBER AND NAME 9281 Intelligent Agent Security Module (IASM)					
COST ($ in Millions)	Prior Years Cost		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	**0.000**		**4.314**	**5.439**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**9.753**
RDT&E Articles Qty											**0**

(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.

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.

R-1 SHOPPING LIST - Item No. 191

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0303140N Information Systems Security Program (ISSP)	9281 Intelligent Agent Security Module (IASM)

(U) B. Accomplishments/Planned Program

	FY 03	FY 04	FY 05
Intelligent Agent Security Module (IASM)	4.314	5.439	0.000
RDT&E Articles Quantity			

FY 03 Accomplishments Include:
$4.314- 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.

FY 04 Plan includes:
$5.439- Continue to develop network wide Intrusion Detection System (IDS) (referred to as Naval Intelligent Agent Secure Module (NIASM)). Continue to develop a hierarchal data monitoring and analysis system to support the design of a Global Navy, Base Level Information Infrastructure security assurance grid. Efforts will include independent operational and performance tests to verify the system hardness in a military ship-at-sea environment. In addition, FY04 efforts will be directed will to resolve critical design issues to meet IASM Build 1.0 shore system integration readiness and certify shore Network Operating Center system security integration at Information Assurance test facilities.

R-1 SHOPPING LIST - Item No. 191

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0303140N Information Systems Security Program (ISSP)	9281 Intelligent Agent Security Module (IASM)

(U) C. PROGRAM CHANGE SUMMARY:

(U) Funding:	FY 2003	FY 2004	FY 2005
Previous President's Budget:	0.000	0.000	0.000
Current BES/President's Budget	4.314	5.439	0.000
Total Adjustments	4.314	5.439	0.000
Summary of Adjustments			
Congressional Add IASM	4.500	5.500	0.000
Inflation Savings	-0.057		
Sec. 8100: Business Process Reform	-0.016		
Sec. 8109: IT Cost Growth	-0.007		
Inflation Savings	-0.030		
Sec. 8094: Mgmt Improvements	0.000	-0.014	0.000
Sec. 8126: Efficiencies/Revised Econ Assumption	0.000	-0.047	0.000
SBIR Assessment	-0.076	0.000	0.000
Subtotal	4.314	5.439	0.000

(U) Schedule:

N/A

(U) Technical:

N/A

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0303140N Information Systems Security Program (ISSP)	9281 Intelligent Agent Security Module (IASM)

(U) D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
OPN 3415 Info Sys Security Program (ISSP)	83.941	81.213	88.418	112.601	122.542	118.239	118.457	Continued	Continued
OMN 4A6M Info Sys Security Program (ISSP)	15.446	18.102	13.006	11.944	12.137	12.443	12.755	Continued	Continued

(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**

R-1 SHOPPING LIST - Item No. 191

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**			PROGRAM ELEMENT 0303140N Information Systems Security Program (ISSP)			PROJECT NUMBER AND NAME 9281 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	3.415	09/03	4.639	01/04				8.054	
Training Development											0.000	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			0.000	3.415		4.639		0.000		0.000	8.054	
Remarks:												
Development Support											0.000	
Software Development											0.000	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
Studies & Analyses											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**		PROGRAM ELEMENT 0303140N Information Systems Security Program (ISSP)				PROJECT NUMBER AND NAME 9281 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	0.449	01/03	0.400	12/03				0.849	
Developmental Test & Evaluation	WX	SSC San Diego, CA	0.000	0.450	01/03	0.400	12/03				0.850	
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	0.899		0.800		0.000		0.000	1.699	
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	4.314		5.439		0.000		0.000	9.753	
Remarks:												

R-1 SHOPPING LIST - Item No. 191

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: **February 2004**			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT NUMBER AND NAME 0303140N Information Systems Security Program (ISSP)					PROJECT NUMBER AND NAME 9430 SECURE Kit					
COST ($ in Millions)	Prior Years Cost		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**	**1.780**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**1.780**
RDT&E Articles Qty											

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Congressional plus-up for Navy's SECURE Kit . Develop systems that will allow a user at a single workstation seat to access multiple security networks based on the user's access clearance and need to know. The web architecture-based solution will allow the user to access this information at the Navy enterprise level and eliminates the need to reconfigure networks and hardware when accessing one domain or another. In order to implement a fully enabled end-to-end network enterprise environment envisioned by the FORCEnet vision document, we have developed a component-based architecture called SECUREkit. SECUREkit will provide the necessary components to meet the Naval warfighter needs, which can be summarized as three.
(1) Single points of entry anywhere on the network to any place on the network with complete transparency to the tiers of enterprise services.
(2) Access from that single point to all appropriate security domains.
(3) Provide the ability to dynamically, or on the fly, reconfigure the Multi-Level System (MLS) enterprise.
The evolvutionary the component architecture of the SECUREkit architecture is being accomplished through partnering efforts with the National Security Agency (NSA) and the PEO(C4I&Space). This architecture is made up of trusted servers, trusted pathways, and trusted clients. The goal of SECUREkit will be to make available to warfighters in the Global Information Grid Enterprise Services (GIG ES) all components to implementation their participation at Evaluated Assurance Level 6 (EAL6).

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.

R-1 SHOPPING LIST - Item No. 191

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0303140N Information Systems Security Program (ISSP)	9430 SECURE Kit

(U) B. Accomplishments/Planned Program

	FY 03	FY 04	FY 05
Intelligent Agent Security Module (IASM)	0.000	1.780	0.000
RDT&E Articles Quantity			

FY 04 Plan includes:
$1.780- Develop SECUREkit pathway components. Funds will provide for feasibility demonstration of components to develop possible solution for MSL. Funds are required to continue research, development, and test and evaluation of this promising MSL technology to be applied to future phases of the MSL spiral development. Current MSL systems do not meet all fleet requirements, thus further R&D is required to fulfill the need. Specifically, the need that SECUREkit intends to satisfy is a fully multiple-level security Navy enterprise capability. The pathway components are the next elements of this capability requiring development.

R-1 SHOPPING LIST - Item No. 191

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0303140N Information Systems Security Program (ISSP)	9430 SECURE Kit

(U) C. PROGRAM CHANGE SUMMARY:

(U) Funding:	FY 2003	FY 2004	FY 2005
Previous President's Budget:	0.000	0.000	0.000
Current BES/President's Budget	0.000	1.780	0.000
Total Adjustments	0.000	1.780	0.000
Summary of Adjustments			
Congressional Add IASM	0.000	1.800	0.000
Sec. 8094: Mgmt Improvements	0.000	-0.005	0.000
Sec. 8126: Efficiencies/Revised Econ Assumption	0.000	-0.015	0.000
Subtotal	0.000	1.780	0.000

(U) Schedule:

N/A

(U) Technical:

N/A

R-1 SHOPPING LIST - Item No. 191

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0303140N Information Systems Security Program (ISSP)	9430 SECURE Kit

(U) D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Complete	To Cost	Total
OPN 3415 Info Sys Security Program (ISSP)	83.941	81.213	88.418	112.601	122.542	118.239	118.457	Continued	Continued	
OMN 4A6M Info Sys Security Program (ISSP)	15.446	18.102	13.006	11.944	12.137	12.443	12.755	Continued	Continued	

(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**

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**			PROGRAM ELEMENT 0303140N Information Systems Security Program (ISSP)			PROJECT NUMBER AND NAME 9430 SECURE Kit						
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	CPFF	PSI, Inc.	0.000	0.000		1.680	01/04				1.680	
Training Development											0.000	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			0.000	0.000		1.680		0.000		0.000	1.680	
Remarks:												
Development Support											0.000	
Software Development											0.000	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
Studies & Analyses											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**			PROGRAM ELEMENT 0303140N Information Systems Security Program (ISSP)			PROJECT NUMBER AND NAME 9430 SECURE Kit						
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	0.000		0.000	12/03				0.000	
Developmental Test & Evaluation	WX	SSC San Diego, CA	0.000	0.000		0.000	12/03				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	CPFF	BAH, Inc.				0.100	01/04				0.100	
Travel											0.000	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			0.000	0.000		0.100		0.000		0.000	0.100	
Remarks:												
Total Cost			0.000	0.000		1.780		0.000		0.000	1.780	
Remarks:												

R-1 SHOPPING LIST - Item No. 191

EXHIBIT R-2, RDT&E Project Justification						DATE: February 2004	
APPROPRIATION/BUDGET ACTIVITY **RDT&E,N / BA-7**	PROGRAM ELEMENT NUMBER AND NAME **0305149N/COBRA JUDY**			PROJECT NUMBER AND NAME **4021/Rapid Technology Transition**			
COST ($ in Millions)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	**50.510**	**68.583**	**80.694**	**124.804**	**137.155**	**122.581**	**80.721**
RDT&E Articles Qty	**0**	**0**	**0**	**0**	**0**	**0**	**0**

(U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

A. (U) Mission Description

Cobra Judy Replacement is a program that has been transferred from the Air Force to the Navy, per an Office of the Secretary of Defense (OSD) Milestone A Acquisition Decision Memorandum dated 6 August 20002. Current FY04 funding represents approximately half of the total budget.

Cobra Judy funds will replace the current U.S. Naval Ship (USNS) Observation Island which has become unsustainable and due to leave service no later 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.

The Cobra Judy Replacement program has successfully reached Milestone B/C since the last submission, resulting in an approved Acquisition Strategy. The current CAIG estimate is consistent with the approved Acquisition Strategy. The PB 05 submission reflects the current CAIG estimates.

CLASSIFICATION:

EXHIBIT R-2, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N /	**0305149N/COBRA JUDY**	**4021/Rapid Technology Transition**

B. Accomplishments/Planned Program

	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	33.125	61.189	71.145
RDT&E Articles Quantity	0	0	0

DESIGN AND RISK REDUCTION
Planned:
- Complete critical designs for prime mission (X-band and S-band) radars

Accomplishements:
- Completed Milestone B/C
- Awarded key contract for X and S-band radars

	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	1.297	2.590
RDT&E Articles Quantity	0	0	0

SHIPBUILDING / CONVERSION
Planned:
- Complete ship selection studies
- Contract for ship and integration
- Initiate ship construction

R-1 SHOPPING LIST - Item No. 193

CLASSIFICATION:

EXHIBIT R-2, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N /	**0305149N/COBRA JUDY**	**4021/Rapid Technology Transition**

B. Accomplishments/Planned Program (Cont.)

	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	9.950	3.658	4.175
RDT&E Articles Quantity	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 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	7.435	2.439	2.784
RDT&E Articles Quantity	0	0	0

PROGRAM MANAGEMENT SUPPORT
Planned:
- Program planning, assessment of technical alternatives, risk identification and mitigation.
- Cost and schedule development and execution

Accomplishments:
- Completed milestone documentation in preparation for Milestones B/C
- Completed Milestones B/C

Total Cost:	50,510	68,583	80,694

CLASSIFICATION:

EXHIBIT R-2, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E,N / BA-7	**0305149N/COBRA JUDY**	**4021/Rapid Technology Transition**

C. (U) PROGRAM CHANGE SUMMARY:

Funding:	FY 2003	FY 2004	FY 2005
Previous President's Budget:	51.061	69.369	81.000
President's Budget: (PB 05 Controls)	50.510	68.583	80.694
Total Adjustments	-0.551	-0.786	-0.306
Summary of Adjustments			
FFRDC Reduction	0.000	-0.589	0.000
Economic Assumtions	-0.551	-0.197	-0.306
Subtotal	-0.551	-0.786	-0.306

Schedule:

Not Applicable.

Technical:

Not Applicable.

R-1 SHOPPING LIST - Item No. 193

CLASSIFICATION:

EXHIBIT R-2, RDT&E Project Justification			DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY **RDT&E,N / BA-7**	PROGRAM ELEMENT NUMBER AND NAME **0305149N/COBRA JUDY**	PROJECT NUMBER AND NAME **4021/Rapid Technology Transition**	

D. 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 Complete	Total Cost
P.E. 0303901N									Continuing	Continuing

Details and funding profile for this Program Element is classified.

E. ACQUISITION STRATEGY:

(U) The acquisition strategy calls for leveraging ongoing Navy Ballistic Missile Defense (BMD) radar development, updating existing user interface/communications/data handling equipment designs from a similar operational unit, and purchasing and integrating the mission equipment aboard an appropriate merchant-class hull. System design will be accomplished using in-hand technologies and commercial standards to lower schedule risk and produce a product with the lowest possible life-cycle cost.

F. MAJOR PERFORMERS:

Raytheon Company - Sudbury, Massachussettes

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA - 7**			PROGRAM ELEMENT NAME AND NUMBER **0305149N/COBRA JUDY**			PROJECT NUMBER AND NAME **4021/Rapid Technology Transition**						
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 / Sys Eng												
Prototype Development	CPAF	Raytheon	0.000	26.430	12/04	61.189	TBD	71.145	TBD	Continuing	Continuing	TBD
		PMS 325/CSC	0.000	6.695	03/03	1.297	TBD	2.590	TBD	Continuing	Continuing	TBD
Award Fee												
System Engineering	WX/RX/MIPR	Various	0.000	0.994	03/03	3.658	TBD	4.175	TBD	Continuing	Continuing	TBD
	WX	NSWC DD	0.000	3.165	03/03							
	WX	NSWC CSS	0.000	2.085	03/03							
	WX	NSWC PHD	0.000	0.435	03/03							
	CPFF	JHU/APL	0.000	1.035	03/03							
	WX	NRL	0.000	0.375	03/03							
	WX	SEG	0.000	0.600	03/03							
	GSA	Various	0.000	0.861	03/03							
	C NF	GTRI	0.000	0.400	03/03							
Subtotal Product Development			0.000	43.075		66.144		77.910		Continuing	Continuing	TBD
Remarks:												
Test and Evaluation												
Test and Evaluation												
Subtotal T&E:			0.000	0.000		0.000		0.000		Continuing	Continuing	TBD
Remarks:												
Total Cost			0.000	43.075		66.144		77.910		Continuing	Continuing	TBD

R-1 SHOPPING LIST - Item No. 193

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**			PROGRAM ELEMENT NAME AND NUMBER **0305149N/COBRA JUDY**			PROJECT NUMBER AND NAME **4021/Rapid Technology Transition**						
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	Cont.
Remarks:												
Contractor Engineering	GSA	Various	0.000	0.885	03/03	2.439	TBD	2.784	TBD	Continuing	Continuing	TBD
	GSA	Computer Science Corp	0.000	2.725	03/03	0.000						
	GSA	Systems Planning & Analy	0.000	1.900	03/03							
Government Engineering												
Program Management	GSA	BAE Systems	0.000	1.490	03/03							
	WX/CPFF	Various	0.000	0.385	03/03							
Travel			0.000	0.050	03/03							
Labor (Research Personnel)												
SBIR Assessment												
Subtotal Management			0.000	7.435		2.439		2.784		0.000	12.658	Cont.
Remarks:												
Total Cost			0.000	50.510		68.583		80.694		Cont.	Cont.	Cont.
Remarks:												

R-1 SHOPPING LIST - Item No. 193

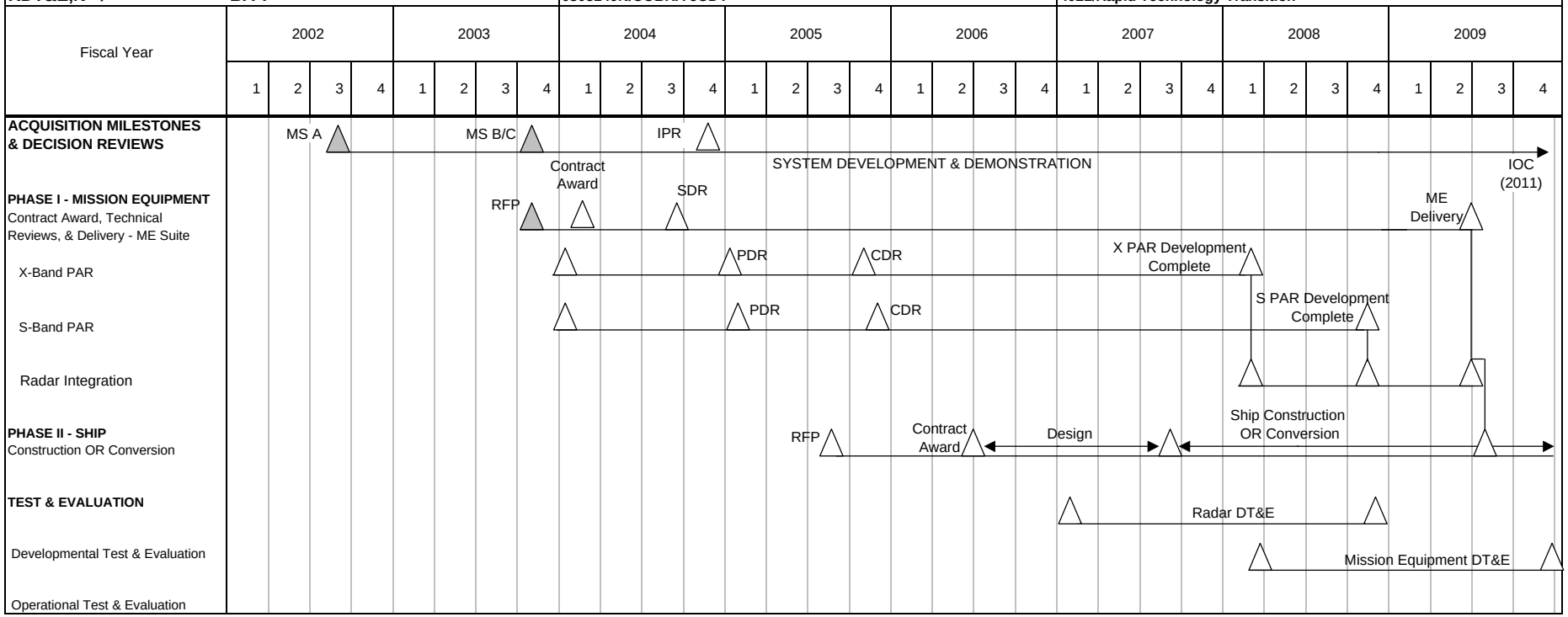
CLASSIFICATION:

EXHIBIT R4, Schedule Profile | DATE: **February 2004**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E,N / BA-7**

PROGRAM ELEMENT NUMBER AND NAME: **0305149N/COBRA JUDY**

PROJECT NUMBER AND NAME: **4021/Rapid Technology Transition**



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

LEGEND

CDR	Critical Design Review	OPEVAL	Operational Evaluation
DT&E	Developmental Test and Evaluation	OTRR	Operationl Test Readiness Review
ICD	Interface Control Document	PAR	Phased Array Radar
IOC	Initial Operational Capability	PDR	Preliminary Design Review
IPR	Interim Progress Review	PDTT	Post Delivery Test & Trials
IOC	Initial Operational Capability	RFP	Request for Proposal
IOT&E	Initial Operational Test & Evaluation	SDR	System Design Review
MS	Milestone	TECHEVAL	Technical Evaluation

R-1 SHOPPING LIST - Item No. 193

CLASSIFICATION:

Exhibit R-4a, Schedule Detail					DATE: **February 2004**			
APPROPRIATION/BUDGET ACTIVITY **RDT&E,N / BA-7**	PROGRAM ELEMENT **0305149N/COBRA JUDY**				PROJECT NUMBER AND NAME **4021/Rapid Technology Transition**			
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)		4Q						
Interim Progress Review (IPR)			4Q					
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)		4Q						
Contract Award(s)			1Q					
System Design Review (SDR)			3Q					
Delivery								3Q
X-Band Radar								
Contract Award			1Q					
Preliminary Design Review (PDR)				1Q				
Critical Design Review (CDR)				4Q				
Delivery							1Q	
S-Band Radar								
Contract Award			1Q					
Preliminary Design Review (PDR)				1Q				
Critical Design Review (CDR)				4Q				
Delivery							4Q	
Radar Integration								
Delivery							1Q, 4Q	3Q
SHIP								
Request for Proposal (RFP)				3Q				
Contract Award					3Q			
Ship Design					3Q-4Q	1Q-3Q		
Ship Contruction or Conversion						3Q		
Delivery								3Q
TEST AND EVALUATION								
Radar Developmental Test & Evaluation (DT&E)						1Q-4Q	1Q-4Q	
Mission Equipment Developmental Test & Evaluation (DT&E)							1Q-4Q	1Q-4Q

R-1 SHOPPING LIST - Item No. 193

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification								DATE: **February 2004**			
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7**						R-1 ITEM NOMENCLATURE PE 0305160N Defense Meteorological Satellite Program (Space)					
COST ($ in Millions)	Prior Years Cost	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009		Cost to Complete	Total Program
Total PE Cost	**170.268**	**21.833**	**7.878**	**4.215**	**5.198**	**5.827**	**22.810**	**23.199**		**CONTINUING**	**Continuing**
1452 Geosat Follow-on	**95.732**	**1.729**	**0.812**	**0.898**	**0.926**	**1.120**	**1.143**	**1.166**		**CONTINUING**	**Continuing**
0524 Navy METOC Support (Space)	**74.536**	**17.253**	**4.099**	**3.317**	**4.272**	**4.707**	**21.667**	**22.033**		**CONTINUING**	**Continuing**
9282 Radiation Hardened Vector Processor	**0.000**	**2.851**	**2.967**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**			**5.818**
											0.000
											0.000
											0.000
Quantity of RDT&E Articles											**0**

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

This program element supports the naval services' unique requirements in meteorological and oceanographic (METOC) space-based remote sensors. These interests include commitments to satellite, sensor, and operational demonstration/development activities as well as transition to fleet applications associated with five satellite programs: 1) The converged National Polar-orbiting Operational Environmental Satellite System (NPOESS), 2) the joint Defense Meteorological Satellite Program (DMSP), 3) the Coriolis satellite funded by Navy, the NPOESS Integrated Program Office (IPO) and the DoD Space Test Program (STP) which includes the Navy WindSat and Air Force SMEI instruments, 4) the Geodetic/geophysical Satellite (GEOSAT) Follow-On (GFO) funded entirely by Navy and 5) the Indian Ocean METOC Imager (IOMI) project. GEOSAT provided ocean topography information from 1985-1990. In 1991, the Navy began the development of a follow-on capability to continue providing this required ocean topography information via the GFO satellite, launched on 10 February 1998. GFO altimeter data are used to observe significant wave height, ocean thermal and acoustic structure. The Navy METOC Support (Space) project provides for Navy participation in Navy/Air Force cooperative efforts leading to DMSP sensor development, specifically participation in the calibration and validation of instruments and delivery of satellite products to the Fleet. The passive microwave instruments carried on DMSP and future NPOESS satellites provide global oceanic and atmospheric data of direct operational relevance, including sea surface wind, sea ice, and precipitation. WindSat, an initiative begun in 1997, is a partnered program that meets multiple Naval remote sensing requirements and provides a significant risk reduction for the NPOESS satellites' Conical Microwave Imaging Sensor (CMIS) instrument. The spacecraft and sensor development in support of IOMI-GIFTS project was terminated. Congressional Adds for a Radiation Hardened Vector Processor system to advance the science of spacecraft based data and imagery processing were provided in FY03 and FY04. Both the GEOSAT and Navy METOC Support (Space) projects fulfill Navy's obligation to develop naval service-unique, mission critical space-based METOC technology.

(U) JUSTIFICATION FOR BUDGET ACTIVITY: BA-7: This program is funded under OPERATIONAL SYSTEMS DEVELOPMENT because it encompasses engineering and manufacturing development for upgrade of existing, operational systems.

R-1 SHOPPING LIST - Item No. 194

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: **February 2004**			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT NUMBER AND NAME PE 305160N Defense Meteorological Satellite Program (Space)					PROJECT NUMBER AND NAME 0524 Navy METOC Support (Space)					
COST ($ in Millions)	Prior Years Cost	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009		Cost to Complete	Total Program
Project Cost	**74.536**	**17.253**	**4.099**	**3.317**	**4.272**	**4.707**	**21.667**	**22.033**		**Continuing**	**Continuing**
RDT&E Articles Qty											**0**

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

The Navy Meteorological and Oceanographic (METOC) Support (Space) project provides for the naval services' unique sensor development efforts (WindSat and Advanced Altimeters) and Navy participation in Defense Meteorological Satellite Program (DMSP) Special Sensor Microwave/Imager (SSM/I) and Special Sensor Microwave Imager/Sounder (SSM/IS) calibration efforts in support of the Fleet operational requirements. WindSat, an initiative begun in 1997, is a partnered program that meets multiple Naval remote sensing requirements and provides a significant risk reduction for the NPOESS satellites' Conical Microwave Imaging Sensor (CMIS) instrument. The passive microwave instruments carried on DMSP and future NPOESS satellites provide global oceanic and atmospheric data of direct operational relevance, including sea surface wind, sea ice, and precipitation. The Navy METOC Support (Space) project ensures the naval services' operational requirements are satisfied primarily through demonstration of technologies for inclusion on operational constellations such as DMSP, the National Polar-orbiting Operational Environmental Satellite System (NPOESS) and the National Oceanic and Atmospheric Administration's (NOAA) Geostationary Operational Environmental Satellites (GOES). These efforts fulfill naval service unique requirements that are not funded within the DMSP, NPOESS or GOES programs, and are in accordance with current inter-agency agreements. The project also provides for participation in efforts leading to operational improvements of satellite derived products and naval service participation as a voting member of the DMSP Configuration Control Board (CCB) and as a technical advisor to the NPOESS Joint Agency Requirements Group (JARG). Future funding plans respond to emerging Chief of Naval Operations requirements for Navy and Marine Corps METOC data.

R-1 SHOPPING LIST - Item No. 194

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	PE 305160N Defense Meteorological Satellite Program (S	0524 Navy METOC Support (Space)

(U) B. Accomplishments/Planned Program

WINDSAT	FY 03	FY 04	FY 05	
Accomplishments/Effort/Subtotal Cost	14.243	3.055	2.589	
RDT&E Articles Quantity		1		

FY03 Accomplishments : Shipped WindSat flight payload to launch site for final integration with spacecraft and launch vehicle integration. Completed development and testing of algorithms and ground software for WindSat environmental data records. Supported WindSat launch processing, launch operations, early orbit checkout, and began on-orbit calibration and validation. Provided engineering support for the evaluation of the Coriolis spacecraft and WindSat payload on-orbit performance and completed on-orbit calibration/validation of WindSat data.
FY04 Plans: Support Windsat wind speed and direction algorithm development. Support WindSat on-orbit payload to provide Fleet ocean wind speed and direction data. Perform sensor calibration and data validation.
FY05 Plans: Continue to support WindSat on-orbit payload to provide Fleet ocean wind speed and direction data. Perform sensor calibration and data validation of environmental algorithms generated for Fleet use.

Indian Ocean METOC Imager	FY 03	FY 04	FY 05	
Accomplishments/Effort/Subtotal Cost	2.260	0.000	0.000	
RDT&E Articles Quantity				

FY03 Accomplishments: Indian Ocean METOC Imager (IOMI) spacecraft and sensor development in support of IOMI-GIFTS project was terminated by PBD-751.

Calibration and Validation Activities	FY 03	FY 04	FY 05	
Accomplishments/Effort/Subtotal Cost	0.750	0.959	0.642	
RDT&E Articles Quantity				

FY03: Continued to monitor SSM/I performance and continued validation support effort associated with the DMSP SSM/IS and WindSat sensor. Conducted field experiments with APMIR to use for calibration/validation of DMSP SSM/I, SSM/IS sensors, and the WindSat sensor.
FY04 - FY05: 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.

R-1 SHOPPING LIST - Item No.194

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
RDT&E, N / BA-7	PE 305160N Defense Meteorological Satellite Program (S	0524 Navy METOC Support (Space)	

(U) B. Accomplishments/Planned Program

Advanced Altimeter	FY 03	FY 04	FY 05	
Accomplishments/Effort/Subtotal Cost	0.000	0.085	0.086	
RDT&E Articles Quantity				

FY04 - Begin support of Advanced Altimeter program development and trade studies.
FY05 - Continue support of Advanced Altimeter program development and trade studies.

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

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

R-1 SHOPPING LIST - Item No.194

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	PE 305160N Defense Meteorological Satellite Program (Spac	0524 Navy METOC Support (Space)

(U) C. PROGRAM CHANGE SUMMARY:

(U) Funding:	FY 2003	FY 2004	FY 2005
FY 04 President's Budget	17.540	4.145	3.571
FY 05 President's Budget	17.253	4.099	3.317
Total Adjustments	(0.287)	(0.046)	(0.254)
Summary of Adjustments			
N61 HQ Support			(0.236)
FY03_SBIR_5-May-03 FY 2003	(0.107)		
NWCF Rates - NRL Rates			(0.004)
Section 8094: Management Improvements		(0.011)	
Sec. 8126: Efficiencies/Revised Econ. Assumptions		(0.035)	
FY 2003 Update	(0.180)		
WCF - R&D - NRL - PBD 430			(0.010)
PBD 426 Rates - NRL			0.008
PBD-604 Inflation			(0.009)
PBD604 non purchase inflation			(0.002)
P07 Technical Adjustments			(0.001)
Subtotal	(0.287)	(0.046)	(0.254)

(U) Schedule:

Not Applicable

(U) Technical:

Not Applicable

R-1 SHOPPING LIST - Item No. 194

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-3,4,7	PE 305160N Defense Meteorological Satellite Program (S	0524 Navy METOC Support (Space)

(U) D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name

Not Applicable

(U) E. ACQUISITION STRATEGY: *

Naval service unique space based METOC requirements are not fully funded through Joint or converged national program plans. Particular sensors or data sources with unique naval service mission needs are targeted to accelerate acquisition or ensure threshold accomplishment. WindSat provides risk reduction data and developmental technology that the NPOESS IPO will use in the development of the Conical Microwave Imager Sounder (CMIS). CMIS will collect global microwave radiometry and sounding data to produce microwave imagery and other meteorological and oceanographic data. CMIS can be viewed as the follow-on instrument to the Special Sensor Microwave (SSM) instruments Navy developed for the Defense Meteorological Satellite Program (DSMP). It will be the primary instrument for satisfying 20 NPOESS Integrated Operational Requirements Document (IORD) Environmental Data Records (EDRs). These CMIS sensors will be acquired as part of the NPOESS architecture which supports these Navy requirements in the future. Maintenance of rigorous sensor calibration and data validation for operational SSM instruments continues along with algorithm development in support of fleet applications. The Advanced Altimeter technologies will improve radar altimeter resolution and areal coverage to support Navy requirements for sea surface topography measurment in the littorals.

(U) F. MAJOR PERFORMERS: **

FY-03 - FY05 - Naval Research Laboratory, Washington D.C. 49% Satellite Mission and Technical Support, Sensor Calibration and Data Validation

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

R-1 SHOPPING LIST - Item No. 194

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**		PROGRAM ELEMENT PE 305160N Defense Meteorological Satellite Program (Space)			PROJECT NUMBER AND NAME 0524 Navy METOC Support (Space)							
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
Spacecraft Development	FF	Spectrum Astro, AZ	0.000	2.500	Continuous	0.000		0.000		0.000	2.500	
Spacecraft Development	CP	TRW, Redondo Beach, CA	3.185	1.700	10/02	0.000		0.000		0.000	4.885	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Product Development			3.185	4.200		0.000		0.000		0.000	7.385	

Remarks: Spacecraft Development includes both the Coriolis (Spectrum Astro) and IOMI (TRW) Projects. The contract for the Coriolis spacecraft is held by the DoD Space Test Program with Spectrum Astro; through FY03 Navy provided ~$14M for the spacecraft development.
A. The FY03 increment completes the Navy obligation per the interagency MOA of the Space Test Program (STP) Spectrum Astro development.
B. The IOMI (TRW) spacecraft development was terminated by PBD #751.

Windsat Cal Val & Operational Data /Coriolis Command & Control	CP	Various	62.471	11.113		2.079		1.432		Continuing	Continuing	
*IOMI PM and System Engineering	CP	Various	3.754	0.000		0.000		0.000		0.000	3.754	
*SSMIS Cal/Val	CP	Various	5.126	0.620		1.750		1.135		Continuing	Continuing	
Future Mission Studies	CP	TBD						0.500		Continuing	Continuing	
*APMIR	CP	Various		1.320		0.270		0.250		Continuing	Continuing	
											0.000	
											0.000	
Subtotal Support			71.351	13.053		4.099		3.317		0.000	91.820	

Remarks:
*Indian Ocean METOC Imager (IOMI)
*Special Sensor Microwave Imager Sounder (SSMIS)
*Airborne Polarimetric Microwave Imaging Radiometer (APMIR)

Remarks: Future Mission Studies adress Navy unique METOC requirements.

R-1 SHOPPING LIST - Item No. 194

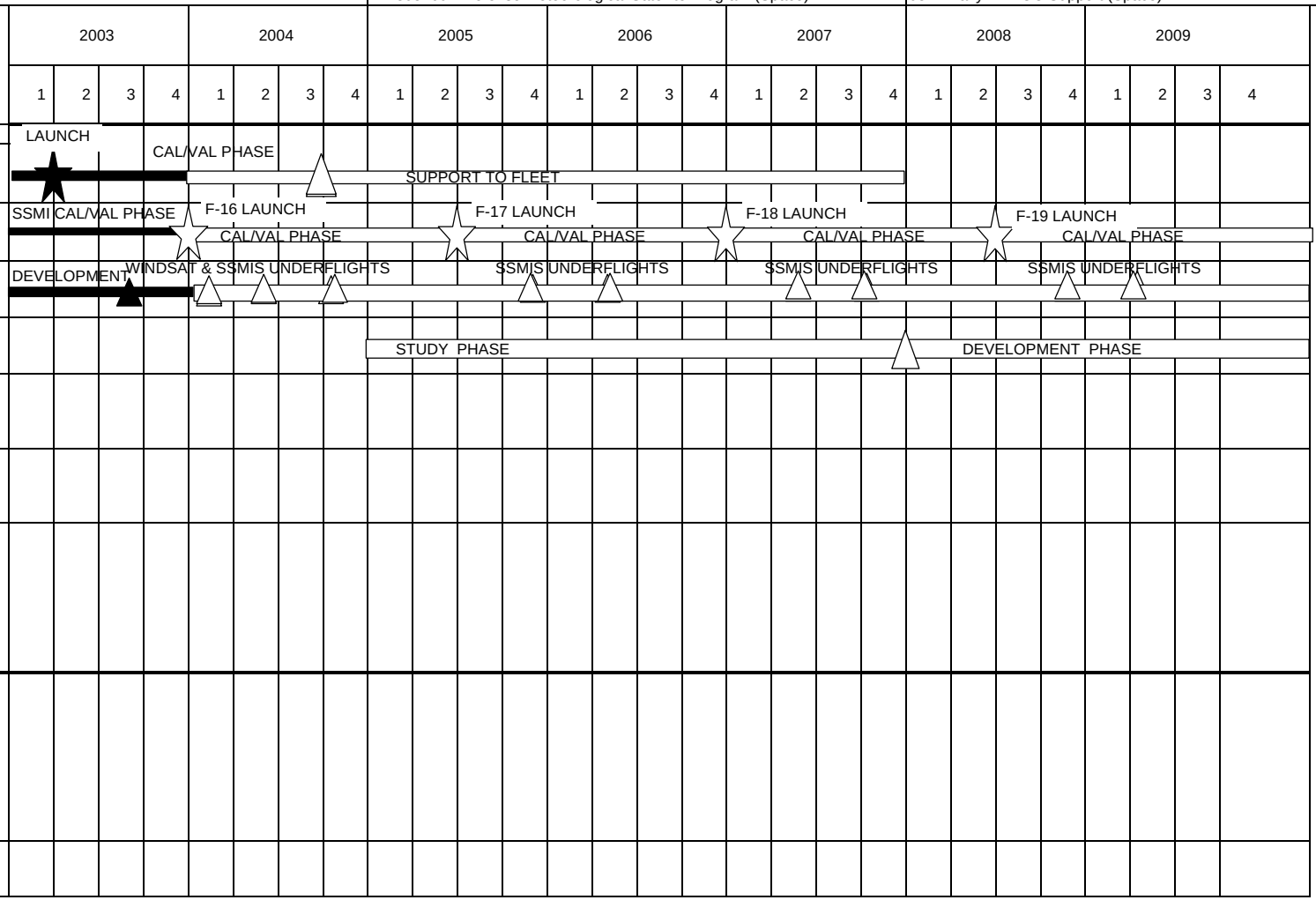
CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**			PROGRAM ELEMENT PE 305160N Defense Meteorological Satellite Program (Space)			PROJECT NUMBER AND NAME 0524 Navy METOC Support (Space)						
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										Continuing	Continuing	
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			74.536	17.253		4.099		3.317		0.000	99.205	
Remarks:												

R-1 SHOPPING LIST - Item No.194

CLASSIFICATION:

EXHIBIT R4, Schedule Profile			DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT NUMBER AND NAME PE 305160N Defense Meteorological Satellite Program (Space)	PROJECT NUMBER AND NAME 0524 Navy METOC Support (Space)	



R-1 SHOPPING LIST - Item No. 194

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **February 2004**	
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT				PROJECT NUMBER AND NAME		
RDT&BA-7	PE 305160N Defense Meteorological Satellite Program (Space)				0524 Navy METOC Support (Space)		
Schedule Profile	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
WindSat /Coriolis							
Testing Complete							
Launch	2Q						
Calibration /Validation Complete		3Q					
Special Sensor Microwave Image Sounder **(SSMIS)**							
DMSP Launches	4Q		2Q	4Q		2Q	
Airborne Polarimetric Microwave Imaging Radiometer **(APMIR)**							
WindSat Underflights	3Q	1Q					
SSMIS Underflights		2Q, 4Q	4Q	2Q	2Q, 4Q	4Q	2Q
Future Missions							
Study Phase Complete					4Q		
Start of Development Phase						1Q	

R-1 SHOPPING LIST - Item No. 194

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: **February 2004**			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT NUMBER AND NAME 0305160N Navy Meteorological and Oceanographic Sensors - Space					PROJECT NUMBER AND NAME 1452 GEOSAT					
COST ($ in Millions)	Prior Years Cost	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009		Cost to Complete	Total Program
Project Cost	**95.732**	**1.729**	**0.812**	**0.898**	**0.926**	**1.120**	**1.143**	**1.166**		**Continuing**	**Continuing**
RDT&E Articles Qty											**0**

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

This project provides a satellite-borne radar altimeter sensor to obtain ocean topography measurements from which tactically significant features such as ocean fronts and eddies, wave heights, internal acoustic structure, and sea-ice edges are derived. Topography provides a unique and important data source in support of a number of naval service unique warfare areas such as anti-submarine and undersea warfare. GFO data are made freely available to other agencies such as the National Oceanic and Atmospheric Administration (NOAA) and the National Aeronautics and Space Administration (NASA) who value its input to studies involving global warming and climate change including El Nino Southern Oscillation (ENSO) effects. Ocean topography data was previously provided by GEOSAT from 1985 until the satellite failed in January 1990. The GEOSAT Follow-On (GFO) satellite provides altimetry data until an Advanced Altimeter or a National Polar-orbiting Operational Environmental Satellite System (NPOESS) altimeter is available.

R-1 SHOPPING LIST - Item No. 194

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA - 7	0305160N Navy Meteorological and Oceanographic Sensors - Space	1452 GEOSAT

(U) B. Accomplishments/Planned Program

On-Orbit Performance Incentive Fee	FY 03	FY 04	FY 05	
Accomplishments/Effort/Subtotal Cost	0.750	0.791	0.000	
RDT&E Articles Quantity				

FY03: Continued to fund on-orbit performance incentive.
FY04: Continue to fund on-orbit performance incentive.

Algorithm Development	FY-03	FY 04	FY 05	
Accomplishments/Effort/Subtotal Cost	0.350	0.000	0.000	
RDT&E Articles Quantity				

FY03 - Continued to develop improved ground station satellite data processing techniques.

Sensor Calibration and data validation	FY-03	FY 04	FY 05	
Accomplishments/Effort/Subtotal Cost	0.629	0.021	0.898	
RDT&E Articles Quantity				

FY03 - Continued to assess on-orbit system performance, conducted payload calibration and data validation, refined orbits and resolved performance anomalies.
FY04 - Continue limited assessment on-orbit system performance, conduct payload calibration and data validation, refine orbits and resolve performance anomalies.
FY05 - Continue to assess on-orbit system performance, conduct payload calibration and data validation, refine orbits and resolve performance anomalies.

R-1 SHOPPING LIST - Item No. 194

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0305160N Navy Meteorological and Oceanographic Sensors - Space	1452 GEOSAT

(U) C. PROGRAM CHANGE SUMMARY:

(U) Funding:	FY 2003	FY 2004	FY 2005
FY 04 President's Budget	1.784	0.821	0.900
FY 05 President's Budget	1.729	0.812	0.898
Total Adjustments	(0.055)	(0.009)	(0.002)
Summary of Adjustments			
FY03_SBIR_5-May-03	(0.036)		
Section 8094: Management Improvements		(0.002)	
Sec. 8126: Efficiencies/Revised Econ. Assumptions		(0.007)	
FY 2003 Update	(0.019)		
Inflation			(0.002)
	(0.055)	(0.009)	(0.002)

(U) Schedule:

Not Applicable

(U) Technical:

Not Applicable

R-1 SHOPPING LIST - Item No. 194

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0305160N Navy Meteorological and Oceanographic Sensors - Space	1452 GEOSAT

(U) D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name

Not Applicable

(U) E. ACQUISITION STRATEGY:

The naval services require a satellite-borne radar altimeter sensor on orbit to obtain ocean topography measurements from which tactically significant features such as ocean fronts and eddies, wave heights, internal acoustic structure, and sea-ice edges are derived. Rigorous payload calibration, data validation and precision orbit determination maintain accuracy and usefulness of data. Continued refinement of sensor performance works toward satisfying the Navy and Marine Corps' littoral data requirements. As the Geosat Follow-On satellite reaches its end of life, the program will transition to satisfy naval service unique altimetry requirements through a free-flying Advanced Altimeter or a National Polar-orbiting Operational Environmental Satellite System (NPOESS) altimeter.

(U) F. MAJOR PERFORMERS:

FY04 to FY05 - Ball Aerospace, Boulder, CO 50% Satellite Mission Support and on-orbit incentive fee; Computer Sciences Corporation (CSC), Monterey, CA 50% Sensor Calibration, Data Validation and Technical Support.

R-1 SHOPPING LIST - Item No. 194

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**		PROGRAM ELEMENT 0305160N Navy Meteorological and Oceanographic Sens				PROJECT NUMBER AND NAME 1452 GEOSAT						
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
Software Development	CP	Ball Aerospace	85.965	0.000	N/A	0.000	N/A	0.000	N/A		85.965	
		Various	8.045	0.000	N/A	0.000	N/A	0.000	N/A		8.045	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Product Development			94.010	0.000		0.000		0.000		0.000	94.010	
Remarks:												
Systems Engineering	CP	Ball Aerospace	1.082	1.071	N/A	0.554	N/A	0.662	N/A	CONTINUING	Continuing	
		Various	0.640	0.658	N/A	0.258	N/A	0.236	N/A	CONTINUING	Continuing	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Support			1.722	1.729		0.812		0.898		0.000	5.161	
Remarks:												

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: **February 2004**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**		PROGRAM ELEMENT 0305160N Navy Meteorological and Oceanographic Sens				PROJECT NUMBER AND NAME 1452 GEOSAT						
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:												
										Continuing	Continuing	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Total Cost			95.732	1.729		0.812		0.898		0.000	99.171	
Remarks:												

R-1 SHOPPING LIST - Item No. 194

CLASSIFICATION:

EXHIBIT R4, Schedule Profile			DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
RDT&E, N / BA-7	0305160N Navy Meteorological and Oceanographic Sensors - Space	1452 GEOSAT	

Fiscal Year	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
Satellite Operations																												

R-1 SHOPPING LIST - Item No. 194

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

CLASSIFICATION:

Exhibit R-4a, Schedule Detail					DATE: **February 2004**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT 0305160N Navy Meteorological and Oceanographic Sensc				PROJECT NUMBER AND NAME 1452 GEOSAT		
Schedule Profile	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Satellite Operations*							

R-1 SHOPPING LIST - Item No. 194

*NOTE: Operational Satellite - no major milestones.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: February 2004			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT NUMBER AND NAME 0305160N Navy Meteorological and Oceanographic Sensors - Space					PROJECT NUMBER AND NAME 9282 Radiation Hardened Vector					
COST ($ in Millions)	Prior Years Cost		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	**0.000**		**2.851**	**2.967**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**Continuing**	**Continuing**
RDT&E Articles Qty											**0**

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

The Radiation Hardened Vector Processor (RHVP) project will enable signal processing to be performed onboard a satellite rather than on the ground, reducing the bandwidth requirements of the downlink and increasing the information content of data that can be provided by a satellite payload. Radiation hardening for on-orbit processing of imagery and sensor data is a critical technology needed by ongoing Navy and national satellite programs.

Congressional adds for a Radiation Hardened Vector Processor system to advance the science of spacecraft based data and imagery processing were provided in FY03 and FY04.

R-1 SHOPPING LIST - Item No. 194

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA - 7	0305160N Navy Meteorological and Oceanographic Sensors - Space	9282 Radiation Hardened Vector

(U) B. Accomplishments/Planned Program

	FY03	FY 04	FY 05	
Accomplishments/Effort/Subtotal Cost	2.851	2.967	0.000	
RDT&E Articles Quantity				

FY03 - Developed a test bed that was used to evaluate candidate digital processors (Phase 1)
FY04 - Develop software and integrate it with the processors selected in Phase 1.

	FY03	FY 04	FY 05	
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.000	
RDT&E Articles Quantity				

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

R-1 SHOPPING LIST - Item No. 194

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0305160N Navy Meteorological and Oceanographic Sensors - Space	9282 Radiation Hardened Vector

(U) C. PROGRAM CHANGE SUMMARY:

(U) Funding:	FY 2003	FY 2004	FY 2005
FY 04 President's Budget	3.000	0.000	0.000
FY 05 President's Budget	2.851	2.967	0.000
Total Adjustments	(0.149)	2.967	0.000
Summary of Adjustments			
FY03_SBIR_5-May-03 FY 2003	(0.076)		
Section 8094: Management Improvements		(0.008)	
Miscellaneous Adjustment	(0.073)		
Sec. 8126: Efficiencies/Revised Econ. Assumptions		(0.025)	
Radiation Hardened Vector Processing		3.000	
Subtotal	(0.149)	2.967	0.000

(U) Schedule:

Not Applicable

(U) Technical:

Not Applicable

R-1 SHOPPING LIST - Item No. 194

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0305160N Navy Meteorological and Oceanographic Sensors - Space	9282 Radiation Hardened Vector

(U) D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name

Not Applicable

(U) E. ACQUISITION STRATEGY:

Not Applicable

(U) F. MAJOR PERFORMERS:

Not Applicable

R-1 SHOPPING LIST - Item No. 194

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**		PROGRAM ELEMENT 0305160N Navy Meteorological and Oceanographic Sens				PROJECT NUMBER AND NAME 9282 Radiation Hardened Vector						
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
Software Development		Valley Technologies Inc.	0.000	2.851	05/03	2.967	N/A	0.000	N/A		5.818	
		Tamaqua, PA	0.000								0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Product Development			0.000	2.851		2.967		0.000		0.000	5.818	
Remarks:												
Systems Engineering			0.000	0.000		0.000		0.000			CONT	
											CONT	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												

R-1 SHOPPING LIST - Item No. 194

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: **February 2004**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**		PROGRAM ELEMENT 0305160N Navy Meteorological and Oceanographic Sens				PROJECT NUMBER AND NAME 9282 Radiation Hardened Vector						
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:												
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Total Cost			0.000	2.851		2.967		0.000		0.000	5.818	
Remarks:												

R-1 SHOPPING LIST - Item No. 194

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																												DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**									PROGRAM ELEMENT NUMBER AND NAME 0305160N Navy Meteorological and Oceanographic Sensors - Space												PROJECT NUMBER AND NAME 9282 Radiation Hardened Vector							
Fiscal Year	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
Radiation Hardened Vector			—	—	—	—	—																					

R-1 SHOPPING LIST - Item No. 194

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

CLASSIFICATION:

Exhibit R-4a, Schedule Detail					DATE: **February 2004**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT 0305160N Navy Meteorological and Oceanographic Sensc				PROJECT NUMBER AND NAME 9282 Radiation Hardened Vector		
Schedule Profile	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Radiation Hardened Vector	3Q	3Q					

R-1 SHOPPING LIST - Item No. 194

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: **February 2004**			
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 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Total PE Cost	35.721	29.371	44.865	43.569	43.875	43.228	44.523	45.734	Continuing	Continuing
2456 - Joint Battle Center	35.721	8.117	8.521						0.000	52.359
3011 - Joint Battle Management Command & Control	0.000	0.000	26.097						0.000	26.097
3043 - Joint Interoperability and Integration	0.000	18.561	8.269	43.569	43.875	43.228	44.523	45.734	Continuing	Continuing
9283 - Strategic Interoperability Initiative	0.000	2.693							0.000	2.693
9431 - Joint Enroute Mission Planning and Rehearsal - Near Term	0.000	0.000	1.978						0.000	1.978
Quantity of RDT&E Articles										

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Continuation of The Unified Command Plan 2002 assigned Commander, USJFCOM with the mission as the Joint Force Integrator. Additionally, the Chairman Joint Chiefs of Staff (CJCS) designated Commander, USJFCOM as lead agent to transform the Armed Forces. In support of these two missions, USJFCOM Joint Interoperability and Integration (JI&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, Materiel, Leadership, Personnel, and Facilities (DOTMLPF) capability plans to ensure the warfighter has interoperable capabilities, and provides prioritized recommendations to the Joint Requirement Oversight Council (JROC) for endorsement/approval. 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.

Management Initiative Decision (MID) 912 signed 7 January 2003 expanded the JI&I operational role through tactical level joint integration of the following capabilities: Common Operational and Tactical Pictures; Combat Identification; Situational Awareness; Adaptive Mission Planning and Rehearsal; Interoperability among Service/Agency intelligence systems; Interoperable joint fires, maneuver, and intelligence; and Integrated Joint Battle Management Command and Control.

MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: 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.

Congressional Add Project 9431: JFCOM JI&I received $2.0M in FY04 only for the Joint Enroute Mission Planning Rehearsal System - Near Term (JEMPRS NT).

R-1 SHOPPING LIST - Item No. 195

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT NUMBER AND NAME 0305188N - Joint C4ISR Battle Center (JBC)	PROJECT NUMBER AND NAME 2456 - Joint (C4ISR) Battle Center	

COST ($ in Millions)	Prior Years Cost	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	35.721	8.117	8.521						0.000	52.359
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 Combatant 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.

Realigned to PE 0604787 project 3021 beginning in FY05.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0305188N - Joint C4ISR Battle Center (JBC)	2456 - Joint (C4ISR) Battle Center

(U) B. Accomplishments/Planned Program

	FY 03	FY 04	FY 05	
CCs REQMTS ANALYSIS & CAPABILITY ASSESSMENTS	5.344	5.655		
RDT&E Articles Quantity				

FY03-04 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 jointness, 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.

	FY 03	FY 04	FY 05	
DOTMLP-F JROC RECOMMENDATIONS	0.555	0.590		
RDT&E Articles Quantity				

FY03-04 DOTMLP-F JROC Recommendations: Provide Doctrine, Organizational, Training, Material, Leadership, Personnel, and Facilities (DOTMLP-F) 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 03	FY 04	FY 05	
JOINT CONCEPT DEVELOPMENT & EQUIP SUP	1.730	1.772		
RDT&E Articles Quantity				

FY03-04 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.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0305188N - Joint C4ISR Battle Center (JBC)	2456 - Joint (C4ISR) Battle Center

(U) B. Accomplishments/Planned Program

	FY 03	FY 04	FY 05	
FEDERATED JOINT C2 LABORATORIES	0.488	0.504		
RDT&E Articles Quantity				

FY03-04 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. 195

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0305188N - Joint C4ISR Battle Center (JBC)	2456 - Joint (C4ISR) Battle Center

(U) C. PROGRAM CHANGE SUMMARY:

(U) Funding:	FY 2003	FY 2004	FY 2005
FY04 President's Budget	8.333	8.637	8.950
FY05 President's Budget	8.117	8.521	0.000
Total Adjustments	-0.216	-0.116	-8.950
Summary of Adjustments			
FY03 SBIR Assessment	-0.216		
Sec. 8094: Management Improvements		-0.023	
Sec. 8029 , P.L. 107-248 FFRDC reduction		-0.020	
Efficiencies/Revised Econ Assumption		-0.073	
JFCOM PE Realignment			-8.950
Subtotal	-0.216	-0.116	-8.950

(U) Schedule:

Not Applicable

(U) Technical:

Not Applicable

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0305188N - Joint C4ISR Battle Center (JBC)	2456 - Joint (C4ISR) Battle Center

(U) D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
Not Applicable									

(U) E. ACQUISITION STRATEGY: *

FY 2003-2004. The JBC does not have a major contract for their RDT&E efforts. Equipment 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**

R-1 SHOPPING LIST - Item No. 195

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**		PROGRAM ELEMENT 0305188N - Joint C4ISR Battle Center (JBC)				PROJECT NUMBER AND NAME 2456 - 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	0.524	Various	0.530	Various			0.000	2.904	
Systems Engineering	C-CPFF	South Carolina Res	1.887	0.235	11/02					0.235	2.357	9.870
Systems Engineering	C-CPFF	ODU	0.509	0.083	03/03	0.085	10/03			0.000	0.677	
Contractor Engineering Support	C-CPFF	GTRI	0.000	1.033	01/03	1.054	10/03			0.000	2.087	
Gov't Engineering Support	C-CPFF	General Dynamics	1.480	0.461	11/02	0.821	01/04			0.000	2.762	
Contractor Engineering Support	C-CPFF	SAIC	0.300								0.300	
Gov't Engineering Support	MIPR	Various DoD	3.247	0.506	Various	0.572	Various			0.000	4.325	
Travel		Various DoD	0.103	0.037	Various	0.039	Various			0.000	0.179	
											0.000	
											0.000	
											0.000	
Subtotal Product Development			9.376	2.879		3.101		0.000		0.235	15.591	
Remarks:												
Systems Engineering Support	C-CPFF	ODU	0.482	0.066	03/03	0.067	10/03			0.000	0.615	
Contractor Engineering Support	C-CPFF	General Dynamics	1.611	0.358	11/02	1.401	01/04			0.000	3.370	
Gov't Engineering Support	MIPR	Various DoD	3.165	0.649	Various	0.557	Various			0.000	4.371	
Travel		Various DoD	0.054	0.028	Various	0.030	Various			0.000	0.112	
Technical Data											0.000	
Studies & Analyses											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Support			5.312	1.101		2.055		0.000		0.000	8.468	
Remarks:												

R-1 SHOPPING LIST - Item No. 195

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**		PROGRAM ELEMENT 0305188N - Joint C4ISR Battle Center (JBC)				PROJECT NUMBER AND NAME 2456 - 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	1.061	Various	0.824	Various			0.000	6.130	
Systems Engineering	C-CPFF	ODU	1.407	0.149	03/03	0.152	10/03			0.000	1.708	
Systems Engineering	C-CPFF	MITRE	0.410	0.277	11/02	0.283	11/03			0.000	0.970	
Contractor Engineering Support	C-CPFF	General Dynamics	4.000	0.889	11/02	1.026	01/04			0.000	5.915	
Gov't Engineering Support	MIPR	Various DoD	9.875	1.660	Various	0.991	Various			0.000	12.526	
Contractor Engineering Support	C-CPFF	Various	0.714							0.000	0.714	
Travel		Various DoD	0.382	0.101	Various	0.089	Various			0.000	0.572	
Subtotal T&E			21.033	4.137		3.365		0.000			28.535	
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	8.117		8.521		0.000		0.235	52.594	
Remarks:												

R-1 SHOPPING LIST - Item No. 195

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																																DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**									PROGRAM ELEMENT NUMBER AND NAME 0305188N - Joint C4ISR Battle Center (JBC)														PROJECT NUMBER AND NAME 2456 - Joint (C4ISR) Battle Center											
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																																
					NO TITLE 10 ACQUISITION AUTHORITY / FORM NOT APPLICABLE																												
Test & Evaluation Milestones																																
Production Milestones																																
Deliveries																																

R-1 SHOPPING LIST - Item No. 195

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

CLASSIFICATION:

Exhibit R-4a, Schedule Detail					DATE: **February 2004**			
APPROPRIATION/BUDGET ACTIVITY **RDT& BA-7**	PROGRAM ELEMENT 0305188N - Joint C4ISR Battle Center (JBC)				PROJECT NUMBER AND NAME 2456 - Joint (C4ISR) Battle Center			
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Not Applicable.								

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2004**			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT NUMBER AND NAME 0305188N - Joint C4ISR Battle Center (JBC)				PROJECT NUMBER AND NAME 3011 - Joint Battle Management Command and Control					
COST ($ in Millions)	Prior Years Cost	FY2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	**0.000**	**0.000**	**26.097**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**26.097**
RDT&E Articles Qty										**0**

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

Continuation of The Unified Command Plan 2002 assigned Commander, USJFCOM with the mission as the Joint Force Integrator. Additionally, the Chairman Joint Chiefs of Staff (CJCS) designated Commander, USJFCOM as lead agent to transform the Armed Forces. In support of these two missions, USJFCOM Joint Interoperability and Integration (JI&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, Materiel, 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) Capability Development Documents (CDDs), Capstone Requirement Documents (CRDs), Capability Production Documents (CPDs), 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.

In addition, Management Initiative Decision (MID) 912 signed 7 January 2003 expanded the JI&I operational role through tactical level joint integration of the following capabilities: Common Operational and Tactical Pictures; Combat Identification; Situational Awareness; Adaptive Mission Planning and Rehearsal; Interoperability among Service/Agency intelligence systems; Interoperable joint fires, maneuver, and intelligence; and Integrated Joint Battle Management Command and Control.

This project is a continuation of efforts previously provided in project 2456 Joint Battle Center.

Beginning in FY05 this effort is transferred to Project 3043 Joint Interoperability and Integration.

R-1 SHOPPING LIST - Item No. 195

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0305188N - Joint C4ISR Battle Center (JBC)	3011 - Joint Battle Command and Control

(U) B. Accomplishments/Planned Program

	FY 03	FY 04	FY 05	
Accomplishments/Effort/Subtotal Cost		0.672		
RDT&E Articles Quantity				

Combatant Commander Capability Office (C3O): USJFCOM JI&I will continued to identify the Combatant Commanders Joint Battle Management Command and Control (BMC2) requirements. The C3O will collect Joint BMC2 information from each of the COCOM's, coordinated the prioritization of the information into COCOM's Joint BMC2 issue categories, and then worked with Services, and Agencies to identify and define DOTMLPF capability solutions. The C3O identifies the operational problems applicable from the Joint Task Force down to the Tactical Level and those areas where assistance is necessary to achieve operational enhancements with US, Allied, and Coalition forces.

	FY 03	FY 04	FY 05	
Accomplishments/Effort/Subtotal Cost		1.735		
RDT&E Articles Quantity				

Joint Operational Concepts and Integrated Architectures. In support of Joint Battle Management Command and Control (BMC2), USJFCOM JI&I will be responsible to develop, maintain, and update Joint Mission Area Joint Operational Concepts and Integrated Architectures which support to the warfighter across the "Range of Military Operations." This Joint Operational Concept efforts will describe the doctrinally based tasks and activities, operational elements, and the time phased information flows required to accomplish Joint military operations. The Joint Integrated Architecture efforts will be utilized to assess and analyze doctrine, Tactical Technical Procedures (TTPs), system and procedural interoperability, processes, and synchronization issues that impact Joint Forces. The Joint Operational Concepts and Integrated Architectures provide the baseline to identify warfighter requirements and were developed in close coordination with OSD, Joint Staff, COCOMs, and Services.

R-1 SHOPPING LIST - Item No. 195

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0305188N - Joint C4ISR Battle Center (JBC)	3011- Joint Battle Management Command and Control

(U) B. Accomplishments/Planned Program

	FY 03	FY 04	FY 05	
Accomplishments/Effort/Subtotal Cost		0.454		
RDT&E Articles Quantity				

USJFCOM JI&I is continuing to execute Secretary of Defense and Chairman Joint Chiefs of Staff directives to define operational requirements and functional constructs for Department of Navy Deployable Joint Command and Control which supports integration with Joint BMC2, Standing Joint Force Headquarters, and Service Battle Management Command and Control capabilities and goals.

	FY03	FY04	FY05	
Accomplishments/Effort/Subtotal Cost		0.500		
RDT&E Articles Quantity				

USJFCOM JI&I is continuing to execute Secretary of Defense and Chairman Joint Chiefs of Staff efforts to provide **Joint En-route Mission Planning and Rehearsal capabilities** across the Regional Combatant Commanders and Service Components to support the Global War on Terrorism (GWOT) and in multiple theaters of operations.

	FY03	FY04	FY05	FY06
Accomplishments/Effort/Subtotal Cost		2.212		
RDT&E Articles Quantity				

USJFCOM JI&I is continuing to execute Secretary of Defense and Chairman Joint Chiefs of Staff directives to provide Regional and Functional Combatant Commanders the **ability to exchange information between multiple security domains** among United States Forces, Interagencies, and Allied, and Coalition Forces in support to the Global War on Terrorism (GWOT) and in multiple theaters of operations.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0305188N - Joint C4ISR Battle Center (JBC)	3011 - Joint Battle Management Command and Control

(U) B. Accomplishments/Planned Program

	FY03	FY04	FY05	
Accomplishments/Effort/Subtotal Cost		0.916		
RDT&E Articles Quantity				

USJFCOM JI&I is continuing to execute Secretary of Defense and Chairman Joint Chiefs of Staff directives to provide Regional and Functional Combatant Commanders and Service Components **Defense Collaborative Planning Tool Suite (DCTS) capabilities** to support the Global War on Terrorism (GWOT) and in multiple theaters of operations.

	FY03	FY04	FY05	
Accomplishments/Effort/Subtotal Cost		1.007		
RDT&E Articles Quantity				

USJFCOM JI&I is continuing to execute Secretary of Defense and Chairman Joint Chiefs of Staff efforts to provide Regional and Functional Combatant Commanders the ability with **dynamic bandwidth capabilities** among United States Forces, Interagencies, and Allied, and Coalition Forces in support to the Global War on Terrorism (GWOT) and in multiple theaters of operations.

R-1 SHOPPING LIST - Item No. 195

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0305188N - Joint C4ISR Battle Center (JBC)	3011 - Joint Battle Management Command and Control

(U) B. Accomplishments/Planned Program

	FY03	FY04	FY05	
Accomplishments/Effort/Subtotal Cost		1.857		
RDT&E Articles Quantity				

USJFCOM JI&I is continuing to execute Secretary of Defense and Chairman Joint Chiefs of Staff directives to provide Regional and Functional Combatant Commanders with **integrated Service and Agencies Intelligence capabilities** among United States Forces, Interagencies, and Allied, and Coalition Forces in support to the Global War on Terrorism (GWOT) and in multiple theaters of operations.

	FY03	FY04	FY05	
Accomplishments/Effort/Subtotal Cost		1.501		
RDT&E Articles Quantity				

USJFCOM JI&I is continuing to execute Secretary of Defense and Chairman Joint Chiefs of Staff directives to provide Regional and Functional Combatant Commanders with **integrated Combat Identification and Situational Awareness capabilities** among United States Forces, Interagencies, and Allied, and Coalition Forces in support to the Global war on Terrorism (GWOT) and in multiple theaters of operations.

	FY03	FY04	FY05	FY06
Accomplishments/Effort/Subtotal Cost		2.473		
RDT&E Articles Quantity				

USJFCOM JI&I is continuing to execute 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 (DepSecDef). 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.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0305188N - Joint C4ISR Battle Center (JBC)	3011 - Joint Battle Management Command and Control

(U) B. Accomplishments/Planned Program

	FY03	FY04	FY05	FY06
Accomplishments/Effort/Subtotal Cost		4.527		
RDT&E Articles Quantity				

USJFCOM JI&I is continuing to execute Secretary of Defense and Chairman Joint Chiefs of Staff directives to provide Regional and Functional Combatant Commanders with **Common Operational and Tactical Pictures capabilities** among United States Forces, Interagencies, and Allied, and Coalition Forces in support to the Global War on Terrorism (GWOT) and in multiple theaters of operations.

	FY03	FY04	FY05	
Accomplishments/Effort/Subtotal Cost		3.022		
RDT&E Articles Quantity				

USJFCOM JI&I is continuing to execute Secretary of Defense and Chairman Joint Chiefs of Staff efforts to provide Regional and Functional Combatant Commanders with **Interoperable Joint Fires, Manuever, and Intelligence capabilities** among United States Forces, Interagencies, and Allied, and Coalition Forces in support to the Global War on Terrorism (GWOT) and in multiple theaters of operations.

	FY03	FY04	FY05	
Accomplishments/Effort/Subtotal Cost		5.221		
RDT&E Articles Quantity				

USJFCOM JI&I is continuing to execute Secretary of Defense and Chairman Joint Chiefs of Staff efforts to provide Regional and Functional Combatant Commanders with **integrated Joint Battle Management Command and Control capabilities** among United States Forces, Interagencies, and Allied, and Coalition Forces in support to the Global War on Terrorism (GWOT) and in multiple theaters of operations.

R-1 SHOPPING LIST - Item No. 195

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0305188N - Joint C4ISR Battle Center (JBC)	3011 - Joint Battle Management Command and Control

(U) C. PROGRAM CHANGE SUMMARY:

(U) Funding:	FY 2003	FY 2004	FY 2005
FY04 President's Budget	0.000	26.391	27.213
FY05 President's Budget	0.000	26.097	0.000
Total Adjustments	0.000	-0.294	-27.213
Summary of Adjustments			
Section 8094: Management Improvements		-0.070	
Section 8126: Efficiencies/Rev Econ Assumptions		-0.224	
Assign new RDTEN project for JBC (69657)			-27.213
Subtotal	0.000	-0.294	-27.213

(U) Schedule:

Not Applicable

(U) Technical:

Not Applicable

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0305188N - Joint C4ISR Battle Center (JBC)	3011 - Joint Battle Management Command and Control

(U) D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
Not Applicable									

(U) E. ACQUISITION STRATEGY: *

Not Applicable.

(U) F. MAJOR PERFORMERS: **

None

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

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**		PROGRAM ELEMENT 0305188N - Joint C4ISR Battle Center (JBC)			PROJECT NUMBER AND NAME 3011 - 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:												

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)						DATE: **February 2004**						
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**			PROGRAM ELEMENT 0305188N - Joint C4ISR Battle Center (JBC)			PROJECT NUMBER AND NAME 3011 - 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	
Government Support	MIPR	Various DoD				26.097	Various			0.000	26.097	
Contractor Support											0.000	
Contractor Support											0.000	
Travel											0.000	
											0.000	
Subtotal T&E			0.000	0.000		26.097		0.000		0.000	26.097	
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		26.097		0.000		0.000	26.097	
Remarks:												

R-1 SHOPPING LIST - Item No. 195

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: **February 2004**			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT NUMBER AND NAME 0305188N - Joint C4ISR Battle Center (JBC)					PROJECT NUMBER AND NAME 3043 - Joint Interoperability and Integration					
COST ($ in Millions)	Prior Years Cost	FY2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009		Cost to Complete	Total Program
Project Cost		18.561	8.269	43.569	43.875	43.228	44.532	45.734		Continuing	Continuing
RDT&E Articles Qty											0

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

Continuation of The Unified Command Plan 2002 assigned Commander, USJFCOM with the mission as the Joint Force Integrator. Additionally, the Chairman Joint Chiefs of Staff (CJCS) designated Commander, USJFCOM as lead agent to transform the Armed Forces. In support of these two missions, USJFCOM Joint Interoperability and Integration (JI&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, Materiel, 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) Capability Development Documents (CDDs), Capstone Requirement Documents (CRDs), Capability Production Documents (CPDs), 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.

In addition, Management Initiative Decision (MID) 912 signed 7 January 2003 expanded the JI&I operational role through tactical level joint integration of the following capabilities: Common Operational and Tactical Pictures; Combat Identification; Situational Awareness; Adaptive Mission Planning and Rehearsal; Interoperability among Service/Agency intelligence systems; Interoperable joint fires, maneuver, and intelligence; and Integrated Joint Battle Management Command and Control.

R-1 SHOPPING LIST - Item No. 195

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0305188N - Joint C4ISR Battle Center (JBC)	3043 - Joint Interoperability and Integration

(U) B. Accomplishments/Planned Program

	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.400	0.672	1.634
RDT&E Articles Quantity			

Combatant Commander Capability Office (C3O): USJFCOM JI&I will continued to identify the Combatant Commanders Joint Battle Management Command and Control (BMC2) requirements. The C3O will collect Joint BMC2 information from each of the COCOM's, coordinated the prioritization of the information into COCOM's Joint BMC2 issue categories, and then worked with Services, and Agencies to identify and define DOTMLPF capability solutions. The C3O identifies the operational problems applicable from the Joint Task Force down to the Tactical Level and those areas where assistance is necessary to achieve operational enhancements with US, Allied, and Coalition forces.

	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.500	1.735	3.400
RDT&E Articles Quantity			

Joint Operational Concepts and Integrated Architectures. In support of Joint Battle Management Command and Control (BMC2), USJFCOM JI&I will be responsible to develop, maintain, and update Joint Mission Area Joint Operational Concepts and Integrated Architectures which support to the warfighter across the "Range of Military Operations." This Joint Operational Concept efforts will describe the doctrinally based tasks and activities, operational elements, and the time phased information flows required to accomplish Joint military operations. The Joint Integrated Architecture efforts will be utilized to assess and analyze doctrine, Tactical Technical Procedures (TTPs), system and procedural interoperability, processes, and synchronization issues that impact Joint Forces. The Joint Operational Concepts and Integrated Architectures provide the baseline to identify warfighter requirements and were developed in close coordination with OSD, Joint Staff, COCOMs, and Services.

R-1 SHOPPING LIST - Item No. 195

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0305188N - Joint C4ISR Battle Center (JBC)	3043 - Joint Interoperability and Integration

(U) B. Accomplishments/Planned Program

	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.400	0.454	0.550
RDT&E Articles Quantity			

USJFCOM JI&I is continuing to execute Secretary of Defense and Chairman Joint Chiefs of Staff directives to define operational requirements and functional constructs for Department of Navy Deployable Joint Command and Control which supports integration with Joint BMC2, Standing Joint Force Headquarters, and Service Battle Management Command and Control capabilities and goals.

	FY03	FY04	FY05
Accomplishments/Effort/Subtotal Cost	1.300	8.022	6.400
RDT&E Articles Quantity			

USJFCOM JI&I is continuing to execute Secretary of Defense and Chairman Joint Chiefs of Staff efforts to provide Joint En-route Mission Planning and Rehearsal capabilities across the Regional Combatant Commanders and Service Components to support the Global War on Terrorism (GWOT) and in multiple theaters of operations. (plus up of $1.880 for FY04 IAW FY2001 Appropriation for Military Construction (Public Law 106-246 dtd 13 July 2000)

	FY03	FY04	FY05
Accomplishments/Effort/Subtotal Cost	1.350	2.212	1.950
RDT&E Articles Quantity			

USJFCOM JI&I is continuing to execute Secretary of Defense and Chairman Joint Chiefs of Staff directives to provide Regional and Functional Combatant Commanders the ability to exchange information between multiple security domains among United States Forces, Interagencies, and Allied, and Coalition Forces in support to the Global War on Terrorism (GWOT) and in multiple theaters of operations.

R-1 SHOPPING LIST - Item No. 195

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0305188N - Joint C4ISR Battle Center (JBC)	3043 - Joint Interoperability and Integration

(U) B. Accomplishments/Planned Program

	FY03	FY04	FY05
Accomplishments/Effort/Subtotal Cost	1.900		
RDT&E Articles Quantity			

USJFCOM JI&I is continuing to execute 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.

	FY03	FY04	FY05
Accomplishments/Effort/Subtotal Cost	1.250	0.916	1.000
RDT&E Articles Quantity			

USJFCOM JI&I is continuing to execute Secretary of Defense and Chairman Joint Chiefs of Staff directives to provide Regional and Functional Combatant Commanders and Service Components Defense Collaborative Planning Tool Suite (DCTS) capabilities to support the Global War on Terrorism (GWOT) and in multiple theaters of operations.

	FY03	FY04	FY05
Accomplishments/Effort/Subtotal Cost	0.700	1.007	1.200
RDT&E Articles Quantity			

USJFCOM JI&I is continuing to execute Secretary of Defense and Chairman Joint Chiefs of Staff efforts to provide Regional and Functional Combatant Commanders the ability with dynamic bandwidth capabilities among United States Forces, Interagencies, and Allied, and Coalition Forces in support to the Global War on Terrorism (GWOT) and in multiple theaters of operations.

R-1 SHOPPING LIST - Item No. 195

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0305188N - Joint C4ISR Battle Center (JBC)	3043 - Joint Interoperability and Integration

(U) B. Accomplishments/Planned Program

	FY03	FY04	FY05
Accomplishments/Effort/Subtotal Cost		1.857	3.000
RDT&E Articles Quantity			

USJFCOM JI&I is continuing to execute Secretary of Defense and Chairman Joint Chiefs of Staff directives to provide Regional and Functional Combatant Commanders with integrated Service and Agencies Intelligence capabilities among United States Forces, Interagencies, and Allied, and Coalition Forces in support to the Global War on Terrorism (GWOT) and in multiple theaters of operations.

	FY03	FY04	FY05
Accomplishments/Effort/Subtotal Cost		1.501	2.550
RDT&E Articles Quantity			

USJFCOM JI&I is continuing to execute Secretary of Defense and Chairman Joint Chiefs of Staff directives to provide Regional and Functional Combatant Commanders with integrated Combat Identification and Situational Awareness capabilities among United States Forces, Interagencies, and Allied, and Coalition Forces in support to the Global war on Terrorism (GWOT) and in multiple theaters of operations.

	FY03	FY04	FY05
Accomplishments/Effort/Subtotal Cost	7.631	2.473	4.250
RDT&E Articles Quantity			

USJFCOM JI&I is continuing to execute 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 (DepSecDef). 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.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0305188N - Joint C4ISR Battle Center (JBC)	3043 - Joint Interoperability and Integration

(U) B. Accomplishments/Planned Program

	FY03	FY04	FY05
Accomplishments/Effort/Subtotal Cost	1.400	4.527	6.227
RDT&E Articles Quantity			

USJFCOM JI&I is continuing to execute Secretary of Defense and Chairman Joint Chiefs of Staff directives to provide Regional and Functional Combatant Commanders with Common Operational and Tactical Pictures capabilities among United States Forces, Interagencies, and Allied, and Coalition Forces in support to the Global War on Terrorism (GWOT) and in multiple theaters of operations.

	FY03	FY04	FY05
Accomplishments/Effort/Subtotal Cost	1.200	3.022	4.000
RDT&E Articles Quantity			

USJFCOM JI&I is continuing to execute Secretary of Defense and Chairman Joint Chiefs of Staff efforts to provide Regional and Functional Combatant Commanders with Interoperable Joint Fires, Manuever, and Intelligence capabilities among United States Forces, Interagencies, and Allied, and Coalition Forces in support to the Global War on Terrorism (GWOT) and in multiple theaters of operations.

	FY03	FY04	FY05
Accomplishments/Effort/Subtotal Cost	0.530	5.968	7.408
RDT&E Articles Quantity			

USJFCOM JI&I is continuing to execute Secretary of Defense and Chairman Joint Chiefs of Staff efforts to provide Regional and Functional Combatant Commanders with integrated Joint Battle Management Command and Control capabilities among United States Forces, Interagencies, and Allied, and Coalition Forces in support to the Global War on Terrorism (GWOT) and in multiple theaters of operations.

R-1 SHOPPING LIST - Item No. 195

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0305188N - Joint C4ISR Battle Center (JBC)	3043 - Joint Interoperability and Integation

(U) C. PROGRAM CHANGE SUMMARY:

(U) Funding:	FY 2003	FY 2004	FY 2005
FY04 President's Budget:	13.072	15.385	15.572
FY05 President's Budget	18.561	8.269	43.569
Total Adjustments	5.489	-7.116	27.997
Summary of Adjustments			
FY03 SBIR Assessment	-0.342		
FY03-47 IR Iraq Freedom Funds	6.000		
FY03 SBIR Assessment	-0.169		
Sec 8094: Mgmt Improvements		-0.023	
Sec. 8029: FFRDC Reduction		-0.021	
Sec. 8126 Efficiencies/Revised Econ. Assump		-0.072	
Miscellaneous Adjustments		-7.000	
Insufficient justification			
INFLATION			-0.116
FY05 ITR			2.000
Assign new RDTEN project for JBC (69657)			27.213
Realign T2 Resources MID 906 (69944)			-1.100
Total	5.489	-7.116	27.997

(U) Schedule:

Not Applicable

(U) Technical:

Not Applicable

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0305188N - Joint C4ISR Battle Center (JBC)	3043 - Joint Interoperability and Integration

(U) D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
Not Applicable									

(U) E. ACQUISITION STRATEGY: *

Not Applicable.

(U) F. MAJOR PERFORMERS: **

None

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

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**			PROGRAM ELEMENT 0305188N - Joint C4ISR Battle Center (JBC)			PROJECT NUMBER AND NAME 3043 - Joint Interoperability and Integation						
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:												

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)											DATE: **February 2004**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**			PROGRAM ELEMENT 0305188N - Joint C4ISR Battle Center (JBC)			PROJECT NUMBER AND NAME 3043 - 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	5.800	10/03	3.170	10/04	Continuing	Continuing	Continuing
Government Support	MIPR	Various DoD		14.230	Various	24.116	Various	37.449	Various	Continuing	Continuing	Continuing
Contractor Support	C-CPFF	ODU		0.980	10/02	2.050	10/03	1.350	10/04	Continuing	Continuing	Continuing
Contractor Support	C-CPFF	GD/BAH		1.220	10/02	2.050	10/03	1.500	10/04	Continuing	Continuing	Continuing
Travel		Various DoD		0.181	Various	0.350	Various	0.100	Various	Continuing	Continuing	Continuing
											0.000	
Subtotal T&E			0.000	18.561		34.366		43.569		Continuing	Continuing	
Contractor Engineering Support											0.000	
Government Engineering Support											0.000	
Program Management Support											0.000	
Travel											0.000	
Transportation											0.000	
											0.000	
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	
Total Cost				18.561		34.366		43.569		Continuing	Continuing	

Remarks:

Remarks:

R-1 SHOPPING LIST - Item No. 195

EXHIBIT R4, Schedule Profile																									DATE: February 2004			
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											
Fiscal Year	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
Acquisition Milestones																												
Test & Evaluation Milestones																												
Production Milestones																												
Deliveries																												

NO TITLE 10 ACQUISITION AUTHORITY / FORM NOT APPLICABLE

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

CLASSIFICATION:

Exhibit R-4a, Schedule Detail					DATE: **February 2004**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E BA-7**	PROGRAM ELEMENT 0305188N - Joint C4ISR Battle Center (JBC)			PROJECT NUMBER AND NAME X3043 - Joint Interoperability and Integration			
Schedule Profile	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Not applicable.							

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2004**			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT NUMBER AND NAME 0305188N - Joint C4ISR Battle Center (JBC)				PROJECT NUMBER AND NAME 9283 - Strategic Interoperability Initiative					
COST ($ in Millions)	Prior Years Cost	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost		2.693							0.000	2.693
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. 195

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0305188N - Joint C4ISR Battle Center (JBC)	9283 - Strategic Interoperability Initiative

(U) B. Accomplishments/Planned Program

STRATEGIC INTEROPERABILITY INITIATIVE	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	2.693		
RDT&E Articles Quantity			

FY03 ($2.693) 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.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0305188N - Joint C4ISR Battle Center (JBC)	9283 - Strategic Interoperability Initiative

(U) C. PROGRAM CHANGE SUMMARY:

(U) Funding:	FY 2003	FY 2004	FY 2005
FY04 President's Budget:	2.764	0.000	0.000
FY05 President's Budget	2.693	0.000	0.000
Total Adjustments	-0.071	0.000	0.000
Summary of Adjustments			
Issue 66556 - FY03 SBIR Assessment	-0.071		
Subtotal	-0.071	0.000	0.000

(U) Schedule:

Not Applicable

(U) Technical:

Not Applicable

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0305188N - Joint C4ISR Battle Center (JBC)	9283 - Strategic Interoperability Initiative

(U) D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
Not Applicable									

(U) E. ACQUISITION STRATEGY: *

FY 2003. The JBC has a services contract to support the Strategic Interoperability Initiative efforts. Equipment required to support this effort are either bought from other service contracts and/or from the GSA schedule.

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

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**		PROGRAM ELEMENT 0305188N - Joint C4ISR Battle Center (JBC)				PROJECT NUMBER AND NAME 9283 - 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		0.200	Various					0.000	0.200	0.200
Systems Engineering	C-CPFF	South Carolina Res		2.492	08/03					0.000	2.492	9.870
Systems Engineering											0.000	
Gov't Engineering Support											0.000	
Contractor Engineering Support											0.000	
Gov't Engineering Support											0.000	
Travel		Various DoD		0.001	Various						0.001	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Product Development			0.000	2.693		0.000		0.000		0.000	2.693	

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:

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**			PROGRAM ELEMENT 0305188N - Joint C4ISR Battle Center (JBC)			PROJECT NUMBER AND NAME 9283 - 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	
											0.000	
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Total Cost			0.000	2.693		0.000		0.000		0.000	2.693	
Remarks:												

R-1 SHOPPING LIST - Item No. 195

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																																DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**									PROGRAM ELEMENT NUMBER AND NAME 0305188N - Joint C4ISR Battle Center (JBC)														PROJECT NUMBER AND NAME 9283 - Strategic Interoperability Initiative										
Fiscal Year	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				
Acquisition Milestones																																
	NO TITLE 10 ACQUISITION AUTHORITY / FORM NOT APPLICABLE																															
Test & Evaluation Milestones																																
Production Milestones																																
Deliveries																																

R-1 SHOPPING LIST - Item No. 195

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

CLASSIFICATION:

Exhibit R-4a, Schedule Detail					DATE: **February 2004**		
APPROPRIATION/BUDGET ACTIVITY **RDT&BA-7**	PROGRAM ELEMENT 0305188N - Joint C4ISR Battle Center (JBC)			PROJECT NUMBER AND NAME 9283 - Strategic Interoperability Initiative			
Schedule Profile	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Not Applicable.							

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: **February 2004**			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT NUMBER AND NAME 0305188N - Joint C4ISR Battle Center (JBC)					PROJECT NUMBER AND NAME 9431 - Joint Enroute Mission Planning and Rehearsal					
COST ($ in Millions)	Prior Years Cost	FY2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009		Cost to Complete	Total Program
Project Cost			1.978							0.000	1.978
RDT&E Articles Qty											0

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

Continuation of The Unified Command Plan 2002 assigned Commander, USJFCOM with the mission as the Joint Force Integrator. Additionally, the Chairman Joint Chiefs of Staff (CJCS) designated Commander, USJFCOM as lead agent to transform the Armed Forces. In support of these two missions, USJFCOM Joint Interoperability and Integration (JI&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, Materiel, 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) Capability Development Documents (CDDs), Capstone Requirement Documents (CRDs), Capability Production Documents (CPDs), 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.

In addition, Management Initiative Decision (MID) 912 signed 7 January 2003 expanded the JI&I operational role through tactical level joint integration of the following capabilities: Common Operational and Tactical Pictures; Combat Identification; Situational Awareness; Adaptive Mission Planning and Rehearsal; Interoperability among Service/Agency intelligence systems; Interoperable joint fires, maneuver, and intelligence; and Integrated Joint Battle Management Command and Control.

Congressional Add Project 9431: JFCOM JI&I received $2.0M in FY04 only for the Joint Enroute Mission Planning Rehearsal System - Near Term (JEMPRS NT).

R-1 SHOPPING LIST - Item No. 195

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0305188N - Joint C4ISR Battle Center (JBC)	9431 - Joint Enroute Mission Planning and Rehearsal

(U) B. Accomplishments/Planned Program

	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		1.978	
RDT&E Articles Quantity			

USJFCOM JI&I is continuing to execute Secretary of Defense and Chairman Joint Chiefs of Staff efforts to provide **Joint En-route Mission Planning and Re-hearsal capabilities** across the Regional Combatant Commanders and Service Components to support the Global War on Terrorism (GWOT) and in multiple theaters of operations.

	FY03	FY04	FY05
Accomplishments/Effort/Subtotal Cost			
RDT&E Articles Quantity			

	FY03	FY04	FY05
Accomplishments/Effort/Subtotal Cost			
RDT&E Articles Quantity			

R-1 SHOPPING LIST - Item No. 195

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0305188N - Joint C4ISR Battle Center (JBC)	9431-Joint Enroute Mission Planning and Rehearsal

(U) C. PROGRAM CHANGE SUMMARY:

(U) Funding:	FY 2003	FY 2004	FY 2005
FY04 President's Budget		0.000	
FY05 President's Budget		1.978	
Total Adjustments	0.000	1.978	0.000
Summary of Adjustments			
Issue 68586 - JEMPRS-NT		2.000	
Issue 68041 - Section 8094: Management Improvements		-0.005	
Issue 68066 - Section 8126: Efficiencies/Rev Econ Assumptions		-0.017	
Total	0.000	1.978	0.000

(U) Schedule:

Not Applicable

(U) Technical:

Not Applicable

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0305188N - Joint C4ISR Battle Center (JBC)	9431 - Joint Enroute Mission Planning and Rehearsal

(U) D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
Not Applicable									

(U) E. ACQUISITION STRATEGY: *

Not Applicable.

(U) F. MAJOR PERFORMERS: **

None

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

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**			PROGRAM ELEMENT 0305188N - Joint C4ISR Battle Center (JBC)			PROJECT NUMBER AND NAME 9431 - Joint Enroute Mission Planning and Rehearsal						
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:												

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)						DATE: **February 2004**						
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**			PROGRAM ELEMENT 0305188N - Joint C4ISR Battle Center (JBC)			PROJECT NUMBER AND NAME 9431 - Joint Enroute Mission Planning and Rehearsal						
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	
Government Support	MIPR	Various DoD				1.978	Various			0.000	1.978	
Contractor Support											0.000	
Contractor Support											0.000	
Travel											0.000	
											0.000	
Subtotal T&E			0.000	0.000		1.978		0.000		0.000	1.978	
Contractor Engineering Support											0.000	
Government Engineering Support											0.000	
Program Management Support											0.000	
Travel											0.000	
Transportation											0.000	
											0.000	
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Total Cost				0.000		1.978		0.000		0.000	1.978	
Remarks:												

R-1 SHOPPING LIST - Item No. 195

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: February 2004	
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7**					R-1 ITEM NOMENCLATURE 0305204N Tactical Unmanned Aerial Vehicles			
COST ($ in Millions)		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost		**65.493**	**85.713**	**53.439**	**69.753**	**55.957**	**23.244**	**11.504**
A2478 Tactical Control System		**16.074**	**27.106**	**8.917**	**9.293**	**9.450**	**9.619**	**9.796**
A2768 Fire Scout Vertical Takeoff & Landing UAV		**39.279**	**36.050**	**42.876**	**58.815**	**44.865**	**11.949**	
A2910 Joint Technology Center/Sys Integ Lab		**1.649**	**1.633**	**1.646**	**1.645**	**1.642**	**1.676**	**1.708**
A3061 Global Hawk Maritime Demo System*								
A4012 Pioneer Program		**6.832**	**14.002**					
A9155 NBC Payload		**1.659**						
A9432 Coastline Security Technology Initiative			**1.730**					
A9434 Mini Detection Devices for UAV Payload			**0.989**					
A9435 Precision Re-Supply Vehicle			**4.203**					

*Global Hawk Maritime Demonstration System budget shown in Program Element 0305205N.

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.

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 for the Navy Fire Scout Vertical Takeoff and Landing (VTOL) Tactical UAV (VTUAV). TCS will also be evaluated for all future Naval UAVs. TCS is being developed in concert with the development of UAV concept of operations (CONOPS) so as to ensure system functionality within operational requirements.

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 air vehicle is designed for modular mission payloads, autonomous vertical launch and recovery, autonomous waypoint navigation, command override capabilty, and can operate from 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 initial shipboard testing and integration begins design activities for system upgrades including weaponization, survivability, plug-and-play architecture, to meet fielding on LCS in FY07, and initiates the buy of LRIP 2.

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification	DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7**	R-1 ITEM NOMENCLATURE 0305204N Tactical Unmanned Aerial Vehocles

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.

Global Hawk Maritime Demonstration (GHMD) System: Budget reflected under Program Element 0305205N.

Pioneer Unmanned Aerial Vehicle Program: 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 have supported numerous joint military operations and contingencies including Bosnia Herzegovina, Somalia, the Adriatic, Persian Gulf operations, DESERT SHIELD and DESERT STORM and OPERATION IRAQI FREEDOM (OIF). During OIF both Marine Pioneer VMU systems were deployed and flew a total of 2357.3 hours in support of combat operations. The VMUs are preparing for future extended deployments. To date, the system has flown in excess of 26,000 flight hours.

Nuclear, Biological, Chemical (NBC) Payload: The NBC Payload is 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 utilizing Micro-Electro-Mechanical Systems (MEMS) technology and innovative detection devices to identify airborne chemical/biological threats and hazardous materials.

Coastline Security Technology Initiative: Congressional add of $1.75M in RDT&E,N for the Coastline Security Technology Initiative that is only for continuation of work with the Institute for Ocean and Systems Engineering to develop surface and airborne autonomous and remotely operated platform surveillance systems for deployment along US Coastlines.

Miniature Detection Devices for Navy UAV Payload: Congressional add of $1.0M in RDT&E,N. Continued development of lightweight, low power NBC sensors and isotope identification techniques utilizing MEMS technology and innovative detection devices to identify ariborne chemical/biological threats and hazardous material.

Precision Re-Supply Vehicle: Congressional add of $4.25M in RDT&E,N for Precision Re-Supply Vehicle.

R-1 SHOPPING LIST - Item No. 197

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2004**	
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 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
A2478 Tactical Control System		**16.074**	**27.106**	**8.917**	**9.293**	**9.450**	**9.619**	**9.796**
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

*Includes the following Congressional adds: In FY2004: $2.4M for JOTBS, less $.027M Congressional undistributed reductions; In FY 2003: $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.

The Tactical Control System (TCS) is developing a standards based system that provides interoperability and commonality for C4I interfaces and command and control for Navy Unmanned Aerial Vehicles (UAVs) including the Navy Fire Scout Vertical Takeoff and Landing (VTOL) Tactical UAV (VTUAV). TCS will also be evaluated for all future Naval UAVs.

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 different UAV types for reconnaissance, surveillance, and combat assessment.

Provides UAV command, control and processing from land and sea based ground stations.

TCS maximizes the use of contractor and government off-the shelf hardware and software whenever possible. TCS software is interoperable and is compliant with the OSD(C3I) Joint Technical Architecture (JTA) and Distributed Common Ground/Surface System (DCGS) standards.

TCS development continues to meet the updated VTUAV ORD requirements and add key technologies that will be used by UAV Systems.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0305204N Tactical Unmanned Aerial Vehicles	A2478 Tactical Control System

B. Accomplishments/Planned Program

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		7.474	24.733	8.917
RDT&E Articles Quantity				

FY2003: Continued TCS Fire Scout VTUAV development, including validation and flight-testing of the Fire Scout VTUAV payload functions and TCDL command and control, and initiated TCS GHMD UAV development. FY2004: Continue TCS Fire Scout VTUAV development. Complete multi-vehicle UAV control. Initiate new Fire Scout's TCS capabilities to support requirements for Littoral Combat Ship (LCS) integration. Initate TCS STANAG 4586 compliance. Initiate TCS Command, Control, Communications, Computers and Intelligence (C4I) interface testing for Fire Scout VTUAV required C4I systems. FY2005: Continue new TCS capabilities to support requirements for Fire Scout VTUAV LCS integration. Continue standard compliance. Continue TCS Command, Control, Communications, Computers and Intelligence (C4I) interface testing for Fire Scout VTUAV required C4I systems.

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		1.500	0.000	0.000
RDT&E Articles Quantity				

FY2003: 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 in FY03.

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		4.100	2.373	0.000
RDT&E Articles Quantity				

FY2003: Developed for Joint Forces Command the capability to fly multiple dissimilar UAVs by initiating JOTBS enhancements.
FY2004: Continue JOTBS enhancements and support of UAV experimentation.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0305204N Tactical Unmanned Aerial Vehicle	A2478 Tactical Control System

B. Accomplishments/Planned Program (Cont.)

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		3.000	0.000	0.000
RDT&E Articles Quantity				

TCS modifications to receive sensor data from a variety of UAVs, including GHMD HAE UAV.

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

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

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0305204N Tactical Unmanned Aerial Vehicle	A2478 Tactical Control System

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2003	FY 2004	FY 2005
Previous President's Budget:	16.675	36.711	8.954
Current BES/President's Budget	16.074	27.106	8.917
Total Adjustments	-0.601	-9.605	-0.037
Summary of Adjustments			
Economic Assumptions			-0.033
Congressional Undistributed Reductions		-0.305	
Reprioritization		-11.700	-0.004
Reprogrammings	-0.601		
Congressional Increases		2.400	
Subtotal	-0.601	-9.605	-0.037

Schedule:

Current schedule reflects changes from the previous President's Budget submission due to program restructure and reduced funding in FY 2004. Congressional direction for TCS mandated a Navy-centric program focused on sustaining current Navy requirements. The current schedule reflects the restructured acquisition strategy for TCS to support primarily the Navy Fire Scout UAV.

Technical: Not applicable

D. OTHER PROGRAM FUNDING SUMMARY: Not applicable

E. ACQUISITION STRATEGY:

These acquisitions will be made by modifying the competitively awarded TCS contract, awarded to Raytheon in 2000; as well as, through the TCS Basic Order Agreement with Raytheon, both of which are cost plus contracts. TCS development and testing will be accomplished via a Government/Industry team.

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**		PROGRAM ELEMENT 0305204N Tactical Unmanned Aerial Vehicle				PROJECT NUMBER AND NAME 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	5.073	11/02	18.868	03/04	5.912	11/04	Continuing	Continuing	
Ancillary Hardware Development	WX	Various	5.761							Continuing	Continuing	
Aircraft Integration											0.000	
Ship Integration											0.000	
Systems Engineering	WX	NAWCAD, Pax River, MD	2.321							Continuing	Continuing	
Systems Engineering	WX	NSWC-Dahlgren, VA	4.634							Continuing	Continuing	
Training Development	WX	NSWC-IH, Indian Head, MD	5.584							Continuing	Continuing	
Licenses											0.000	
Primary Hardware Development	C/CPIFAR	NGC-Ryan, San Diego, CA		1.571	09/03						1.571	
GFE											0.000	
Award Fees	C/CPAF	Raytheon, Falls Church, VA	2.341	1.620	06/03	3.044	03/04	0.709	06/05	Continuing	Continuing	
Subtotal Product Development			72.021	8.264		21.912		6.621		Continuing	Continuing	
Remarks: FY03 Primary Hardware Development was reduced to reflect moving JOTBS funding from development to testing.												
Software Development	MIPR	JTC/SIL, Redstone, AL	3.800							Continuing	Continuing	
Integrated Logistics Support	WX	Various	1.460	0.170	11/02					Continuing	Continuing	
Technical Data	WX	Various	2.755							Continuing	Continuing	
Contractor Engineering Support	C/FFP	Various	0.100							Continuing	Continuing	
Government Engineering Support	WX	NAWCAD, Pax River, MD	0.300	2.122	11/02	1.686	03/04	1.481	11/04	Continuing	Continuing	
Government Engineering Support	WX	SPAWAR, San Diego, CA				0.050	03/04	0.050	11/04	Continuing	Continuing	
GFE											0.000	
Award Fees											0.000	
Subtotal Support			8.415	2.292		1.736		1.531		Continuing	Continuing	
Remarks:												

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**		PROGRAM ELEMENT 0305204N Tactical Unmanned Aerial Vehicle				PROJECT NUMBER AND NAME 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	WX	JITC, Indian Head, MD	0.990			0.150	03/04	0.350	11/04	Continuing	Continuing	
Developmental Test & Evaluation	WX	NSWC, Dahlgren, VA	2.051							Continuing	Continuing	
Operational Test & Evaluation	WX,MIPR	Various	1.480							Continuing	Continuing	
Test Assets	WX	NSWC. Dahlgren, VA	1.000	1.500	12/03					Continuing	Continuing	
Test Assets	WX	USJFCOM, Norfolk, VA		3.705	07/03	2.373	01/04				6.078	
GFE											0.000	
Award Fees											0.000	
Subtotal T&E			5.521	5.205		2.523		0.350		Continuing	Continuing	
Remarks: FY03 Primary Hardware Development was reduced to reflect moving JOTBS funding from development to testing.												
											0.000	
											0.000	
Program Management Support	WX	Various	1.450	0.296	11/03	0.885	03/04	0.395	11/04	Continuing	Continuing	
Travel	WX	Various	1.422	0.017	11/03	0.050	03/04	0.020	11/04	Continuing	Continuing	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			2.872	0.313		0.935		0.415		Continuing	Continuing	
Remarks:												
Total Cost			88.829	16.074		27.106		8.917		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 197

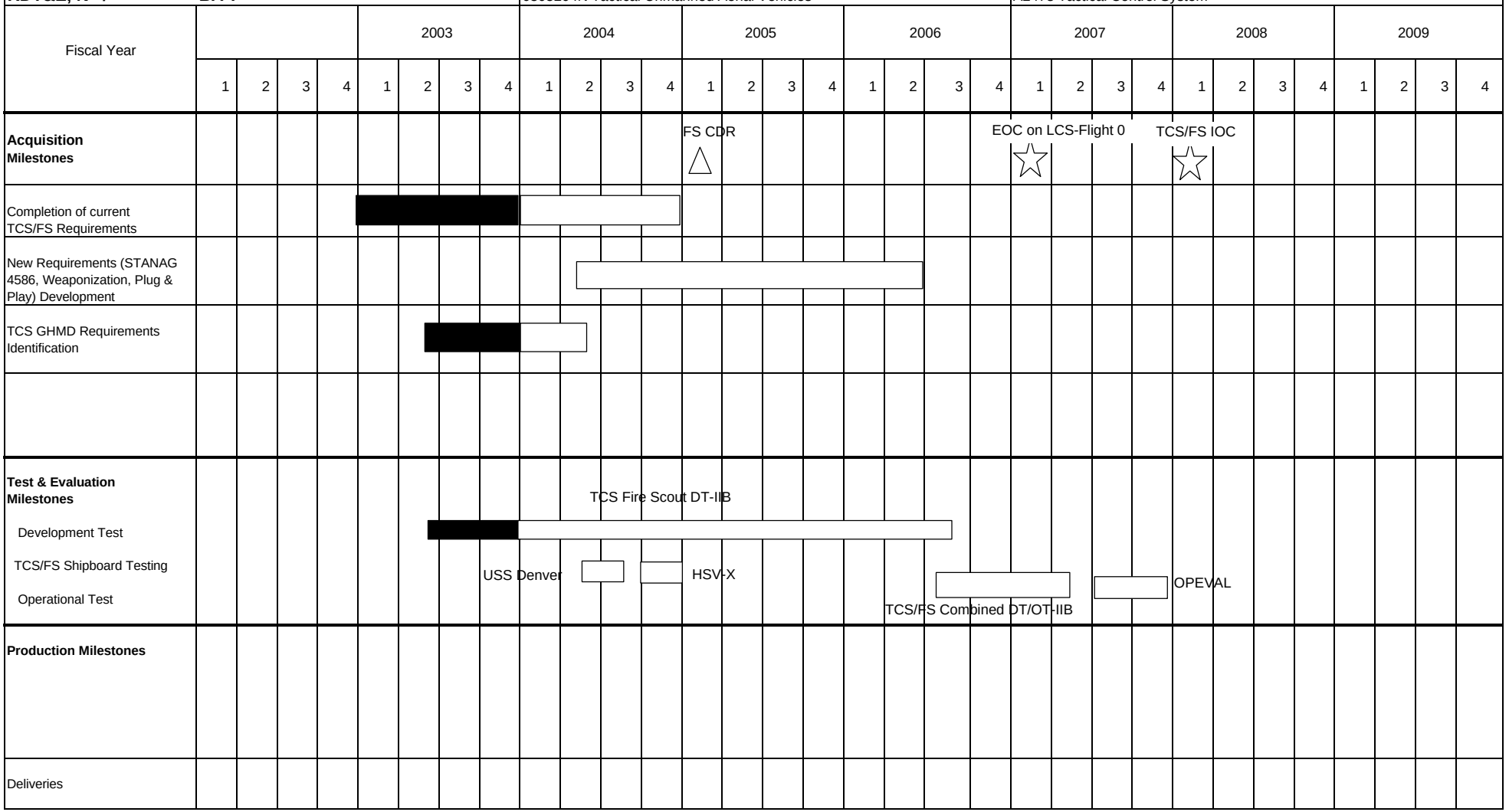
CLASSIFICATION:

EXHIBIT R4, Schedule Profile — DATE: **February 2004**

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



CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **February 2004**		
APPROPRIATION/BUDGET ACTIVITY **RDT&BA-7**	PROGRAM ELEMENT 0305204N Tactical Unmanned Aerial Vehicles				PROJECT NUMBER AND NAME A2478 Tactical Control System			
Schedule Profile		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
TCS Fire Scout Critical Design Review (CDR)				1Q				
Early Operational Capability (EOC) on LCS-Flight 0						1Q		
TCS Fire Scout Initial Operating Capability (IOC)							1Q	
Completion of current TCS Fire Scout Requirements		1Q-4Q	1Q-4Q					
New Requirements Development (includes Standards, Weaponization, Plug & Play)			2Q-4Q	1Q-4Q	1Q-2Q			
TCS GHMD Requirements Identification		2Q-4Q	1Q-2Q					
TCS Fire Scout DT-IIB		2Q-4Q	1Q-4Q	1Q-4Q	1Q-3Q			
TCS/FS Shipboard Testing on USS Denver			2Q-3Q					
TCS/FS Shipboard Testing on HSV-X			4Q					
TCS Fire Scout Combined DT/OT-IIB					3Q-4Q	1Q-2Q		
TCS Fire Scout OT-IIB OPEVAL						3Q-4Q		

R-1 SHOPPING LIST - Item No. 197

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2004**	
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 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
A2768 Fire Scout Vertical Take-off & Landing UAV		**39.279**	**36.050**	**42.876**	**58.815**	**44.865**	**11.949**	
RDT&E Articles Qty			**8**					

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

The Fire Scout Vertical Takeoff and Landing Tactical Unmanned Aerial Vehicle (VTUAV) was designed to provide real-time intelligence, surveillance and reconnaissance data to tactical users without the use of manned aircraft or reliance on limited joint theater or national assets. The baseline Fire Scout VTUAV can accomplish missions including over-the-horizon tactical reconnaissance, classification, targeting and laser designation, and battle management (including communications relay). The Fire Scout VTUAV launches and recovers vertically and can operate from all air capable ships as well as confined area land bases. Other characteristics include autonomous air vehicle launch and recovery, autonomous waypoint navigation with command override capability, a heavy fuel engine and the ability to incorporate Electro-Optical/Infrared/LaserDesignator-Laser Range Finder modular mission payloads. Interoperability is achieved through the use of the Tactical Control System (TCS) software in the ground control station, STANAG-4586 and through 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.

A Fire Scout VTUAV system is composed of three air vehicles, three electro-optical/infrared/laser designator-rangefinder payloads, two Ground Control Stations (with TCS and TCDL integrated for interoperability), one UAV Common Automatic Recovery System (UCARS) for automatic take-off and landings, and associated spares and support equipment.

Fire Scout VTUAV Milestone II was approved during FY00, and LRIP was approved during FY01. In FY02, the Fire Scout VTUAV program was restructured to focus on technology development and demonstration. In FY04 the Navy reinstated Fire Scout VTUAV to field on the Littoral Combat Ship (LCS) in response to current requirements for a flexible, multi-mission VTUAV to support mission areas of Anti-Submarine Warfare, Mine Warfare, and Anti-Surface Warfare.

A program to upgrade the Fire Scout VTUAV to meet the new requirements was initiated in FY04. EMD is continuing in FY04 and will include design activities for system upgrades, testing aboard the USS Denver (LPD) and HSV-X2, and TCS integration. Fabrication of the LRIP 1 system was completed in FY03. LRIP 2 was initiated in FY04. As of December 31, 2003, Fire Scout VTUAV has completed 102 flights, accumulating more than 76 flight hours.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0305204N Tactical Unmanned Aerial Vehicles	A2768 Vertical Take-off Landing UAV

B. Accomplishments/Planned Program

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		35.052	30.565	36.450
RDT&E Articles Quantity			8	

FY03 Continued Engineering and Manufacturing Development and completed LRIP of the Fire Scout VTUAV system. FY04 Continue Engineering and Manufacturing Development of the Fire Scout VTUAV system. Initiate incremental procurement and integration of LRIP 2 Air Vehicles. FY05 funding continues Firescout, development, testing and LRIP 2.

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		0.207	0.732	0.915
RDT&E Articles Quantity				

Continue ILS, technical data, and training system development.

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		1.558	1.096	1.455
RDT&E Articles Quantity				

Continue Developmental testing of the Fire Scout VTUAV system.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0305204N Tactical Unmanned Aerial Vehicles	A2768 Vertical Take-off Landing UAV

B. Accomplishments/Planned Program (Cont.)

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		2.462	3.657	4.056
RDT&E Articles Quantity				

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

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

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0305204N Tactical Unmanned Aerial Vehicles	A2768 Vertical Take-off Landing UAV

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2003	FY 2004	FY 2005
Previous President's Budget:	38.631	4.000	0.000
Current BES/President's Budget	39.279	36.050	42.876
Total Adjustments	0.648	32.050	42.876
Summary of Adjustments			
Congressional Undistributed Reductions		-0.450	
Reprioritization			42.967
Reprogrammings	0.648		
Economic Assumptions			-0.091
Congressional Increases		32.500	
Subtotal	0.648	32.050	42.876

Schedule: Not applicable

Technical: Not applicable

D. OTHER PROGRAM FUNDING SUMMARY: Not applicable

E. ACQUISITION STRATEGY:

Continue sole source to Northrop Grumman to continue Engineering Manufacturing and Design of Fire Scout to increase payload capacity for weaponization. In FY04 design and development of an improved Fire Scout System inititated. LRIP 2 Air Vehicles will be procured, beginning in FY04. Full Rate Production and IOC will follow completion of OPEVAL.

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2004**			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**		PROGRAM ELEMENT 0305204N Tactical Unmanned Aerial Vehicles			PROJECT NUMBER AND NAME 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	111.893	35.052	11/02	30.565	11/03	36.450	11/04		213.960	212.960
Ship Integration	PD	NAVSEA, Arlington, VA	3.466							Continuing	Continuing	
Ship Integration	WX	NSWC, Indian Head, MD	0.152								0.152	
											0.000	
											0.000	
											0.000	
											0.000	
Award Fees	C/CPIFAF	NGC-Ryan, San Diego, CA	4.456								4.456	4.456
											0.000	
											0.000	
											0.000	
Subtotal Product Development			119.967	35.052		30.565		36.450		Continuing	Continuing	
Remarks:												
Integrated Logistics Support	WX	Various	7.416	0.207	01/03	0.732	01/04	0.915	11/04	Continuing	Continuing	
Technical Data	WX	NSWC, Crane, IN	0.900							Continuing	Continuing	
Government Engineering Support	WX	NAWCAD, Pax River, MD	7.388	2.212	11/03	2.184	11/03	2.184	11/04	Continuing	Continuing	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Support			15.704	2.419		2.916		3.099		Continuing	Continuing	
Remarks:												

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2004**			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**		PROGRAM ELEMENT 0305204N Tactical Unmanned Aerial Vehicles			PROJECT NUMBER AND NAME 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	0.364	11/03	0.635	11/04	Continuing	Continuing	
Operational Test & Evaluation	WX	Various	1.691							Continuing	Continuing	
Developmental Test & Evaluation	WX	China Lake, CA	0.780			0.732	02/04	0.820	11/04	Continuing	Continuing	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal T&E			5.583	1.558		1.096		1.455		Continuing	Continuing	
Remarks:												
Program Management Support	C/FFP	Various	7.372	0.170	12/02	1.423	12/03	1.822	11/04	Continuing	Continuing	
											0.000	
											0.000	
Travel	WX	Various	0.387	0.080	11/02	0.050	11/03	0.050	11/04	Continuing	Continuing	
											0.000	
											0.000	
Subtotal Management			7.759	0.250		1.473		1.872		Continuing	Continuing	
Remarks:												
Total Cost			149.013	39.279		36.050		42.876		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 197

EXHIBIT R4, Schedule Profile																																DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**									PROGRAM ELEMENT NUMBER AND NAME 0305204N Tactical Unmanned Aerial Vehicles														PROJECT NUMBER AND NAME A2768 VTUAV										
Fiscal Year					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																																
Firescout EMD																					EOC				IOC FRP							
Test & Evaluation Milestones																																
DTII																																
Combined DT/OT II																																
OPEVAL																																
Shipboard Testing																																
Production Milestones																																
LRIP II Contract Award																																
Deliveries																																
																	Qty 8 (one per quarter)															
Air Vehicles																																

Exhibit R-4a, Schedule Detail						Date: February 2004		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N BA-7**	PROGRAM ELEMENT 0305204N Tactical Unmanned Aerial Vehicles				PROJECT NUMBER AND NAME A2768 VTUAV			
Schedule Profile		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Acquisition Milestones								
Firescout EMD		1Q-4Q	1Q-4Q	1Q-4Q	1Q-3Q	1Q		
FRP							1Q	
IOC							1Q	
Test & Evaluation Milestones								
DT IIB		1Q-4Q	1Q-4Q	1Q-4Q	1Q-3Q			
Combined DT/OT IIB					3Q-4Q	1Q-2Q		
OPEVAL						3Q-4Q		
Shipboard Testing			2Q, 4Q			1Q	1Q	
Production Milestones								
LRIP II Contract Award			2Q					
Delivery								
Air Vehicles				4Q	1Q-4Q	1Q-3Q		

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2004**	
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 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost		**1.649**	**1.633**	**1.646**	**1.645**	**1.642**	**1.676**	**1.708**
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The Joint Technology Center/Systems Integration Laboratory (JTC/SIL) is a center of technical excellence to support all UAV programs within the services. The mission includes 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. The cornerstone of this diverse tool set is the Mulitiple Unified Simulation Environment (MUSE), which is the Department's simulation/training system of choice for ISR systems, sensors, and platforms.

The Services and Warfighting Commanders have a requirement for the capability to train with a system that provides a real-time simulation environment containing multiple intelligence systems that can be integrated with larger force-on force simulations. The MUSE creates a realistic operational environment which supports the ability to assess military utility, architecture and CONOPS development, Tactics, Techniques, and Procedures (TTP) development and refinement, conduct emerging concepts experimentation, and C4I optimization within warfighting exercises and experiments. It is the only simulation system used by the Combat Commanders and Joint Services to support command and battle staff ISR training; there is no alternative available to satisfy those requirements.

The MUSE also creates a realistic operational environment that supports an embedded training capability for multiple Program Managers; tools to minimize acquisition and life cycle cost and schedule impacts; the ability to conduct emerging concepts experimentation, future systems exploration, systems integration, and technology insertion; applications for Joint and Service-specific warfighting exercises; and C4I optimization.

MUSE is currently in use within all services and unified commands simulating PREDATOR, GLOBAL HAWK, HUNTER, Shadow 200, and PIONEER UAVs, National and commercial satellite collectors, P-3, and the U-2. During warfighting exercises, the JTC/SIL integrates imagery simulations with associated 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.

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 UAV (TUAV) ground station developed by the JTC/SIL includes an embedded MUSE trainer. Interim training capabilities for the Tactical Exploitation System (TES) are currently employed in the joint exercises.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / B.A. 7	0305204N Tactical Unmanned Aerial Vehicles	A2910 Joint Technology Center/Systems Integration Lab

B. Accomplishments/Planned Program

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		0.326	0.311	0.326
RDT&E Articles Quantity				

Laboratory Sustainment includes government management, contracts administration, cost accounting, configuration management, administrative support of the lab, MUSE architecture development, property management/accountability, and procurement of equipment.

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		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 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		0.500	0.500	0.500
RDT&E Articles Quantity				

Maintenance, Licenses and Equipment Purchases includes the day-to-day maintenance of lab equipment, license maintenance and license renewals from vendors for individual pieces of equipment, purchases of equipment to support the MUSE, and purchases to upgrade the MUSE capability.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0305204N Tactical Unmanned Aerial Vehicles	A2910 Joint Technology Center/Systems Integration Lab

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2003	FY 2004	FY 2005
Previous President's Budget:	1.649	1.651	1.651
Current BES/President's Budget	1.649	1.633	1.646
Total Adjustments	0.000	-0.018	-0.005
Summary of Adjustments			
Congressional Undistributed Reductions		-0.018	
Economic Assumptions			-0.005
Subtotal	0.000	-0.018	-0.005

Schedule: Not applicable

Technical: Not applicable

D. OTHER PROGRAM FUNDING SUMMARY: Not applicable

E. ACQUISITION STRATEGY: Not applicable

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2004**			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**		PROGRAM ELEMENT 0305204N Tactical Unmanned Aerial Vehicles			PROJECT NUMBER AND NAME 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	
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			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	
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			0.900	0.500		0.500		0.500		Continuing	Continuing	
Remarks:												

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**			PROGRAM ELEMENT 0305204N Tactical Unmanned Aerial Vehicles			PROJECT NUMBER AND NAME 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
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	MIPR	Redstone Arsenal, AL	0.353	0.326	11/02	0.311	11/03	0.326	11/04	Continuing	Continuing	
Government Engineering Support											0.000	
Program Management Support											0.000	
Travel											0.000	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			0.353	0.326		0.311		0.326		Continuing	Continuing	
Remarks:												
Total Cost			2.286	1.649		1.633		1.646		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 197

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2004**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT NUMBER AND NAME 0305204N Tactical Unmanned Aerial Vehicles				PROJECT NUMBER AND NAME A4012 Pioneer			
COST ($ in Millions)		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost		**6.832**	**14.002**					
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

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 have supported numerous joint military operations and contingencies including Bosnia Herzegovina, Somalia, the Adriatic, Persian Gulf operations, DESERT SHIELD and DESERT STORM and OPERATION IRAQI FREEDOM (OIF). During OIF both Marine Pioneer VMU systems were deployed and flew a total of 2357.3 hours in support of combat operations. The VMUs are preparing for future extended deployments. To date, the system has flown in excess of 26,000 flight hours.

The Pioneer Program addresses the critical issues facing the Pioneer system; obsolescence, and mobility. The acquisition strategy uses an Engineering Change Proposal approach, focusing on the most urgent user needs. The mobility enhancements consist of down-sized trailer-mounted launchers, HMMWV-mounted GCS, and UAV transport trailers for improved mobility in theater via C-130 aircraft. To meet the payload shortfall, the Pioneer Program will procure additional Army Shadow TUAV Plug-in Optronic Payloads (POP) 200. A new engine is also planned to replace the current engine that has shown reliability issues and is increasingly difficult to sustain due to limited spares.

Pioneer is fielded with two operational systems which support USMC land based operations. A third system supports training requirements and the fourth supports test and evaluation.

Each operational systems consists of: Five air vehicles that have electro-optical (EO) and infrared (IR) payloads; One GCS; One portable control station; One tracking and communications unit; One to four remote receiving stations.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / B.A. 7	0305204N Tactical Unmanned Aerial Vehicles	A4012 Pioneer

B. Accomplishments/Planned Program

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		4.398	12.059	
RDT&E Articles Quantity				

FY03 Initiated development for replacement engines and Modular Integrated Avionics Group (MIAG). FY04 completes GCS development, MIAG supportability upgrade, and engine replacements.

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		2.434	1.943	
RDT&E Articles Quantity				

Government Engineering, Developmental Testing, Program Management Support.

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

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0305204N Tactical Unmanned Aerial Vehicles	A4012 Pioneer

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2003	FY 2004	FY 2005
Previous President's Budget:	6.832	14.159	
Current BES/President's Budget	6.832	14.002	
Total Adjustments	0.000	-0.157	0.000
Summary of Adjustments			
Congressional Undistributed Reductions		-0.157	
Subtotal	0.000	-0.157	0.000

Schedule: Not applicable

Technical: Not applicable

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0305204N Tactical Unmanned Aerial Vehicles	A4012 Pioneer

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
WPN: 422200									
Pioneer	8.828	10.062	8.775	1.949	1.950	1.989	2.030		

E. ACQUISITION STRATEGY:

Pioneer will continue to use ECPs focusing on the most urgent user needs.

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**		PROGRAM ELEMENT 0305204N Tactical Unmanned Aerial Vehicles				PROJECT NUMBER AND NAME A4012 Pioneer						
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		4.398	03/03	12.059	03/04				16.457	16.457
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	4.398		12.059		0.000		0.000	16.457	
Remarks:												
Development Support											0.000	
Software Development											0.000	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
Studies & Analyses	C/FFP	Anteon, Stafford, VA		1.330	08/04						1.330	1.330
GFE											0.000	
Award Fees											0.000	
Subtotal Support			0.000	1.330		0.000		0.000			1.330	
Remarks:												

CLASSIFICATION:

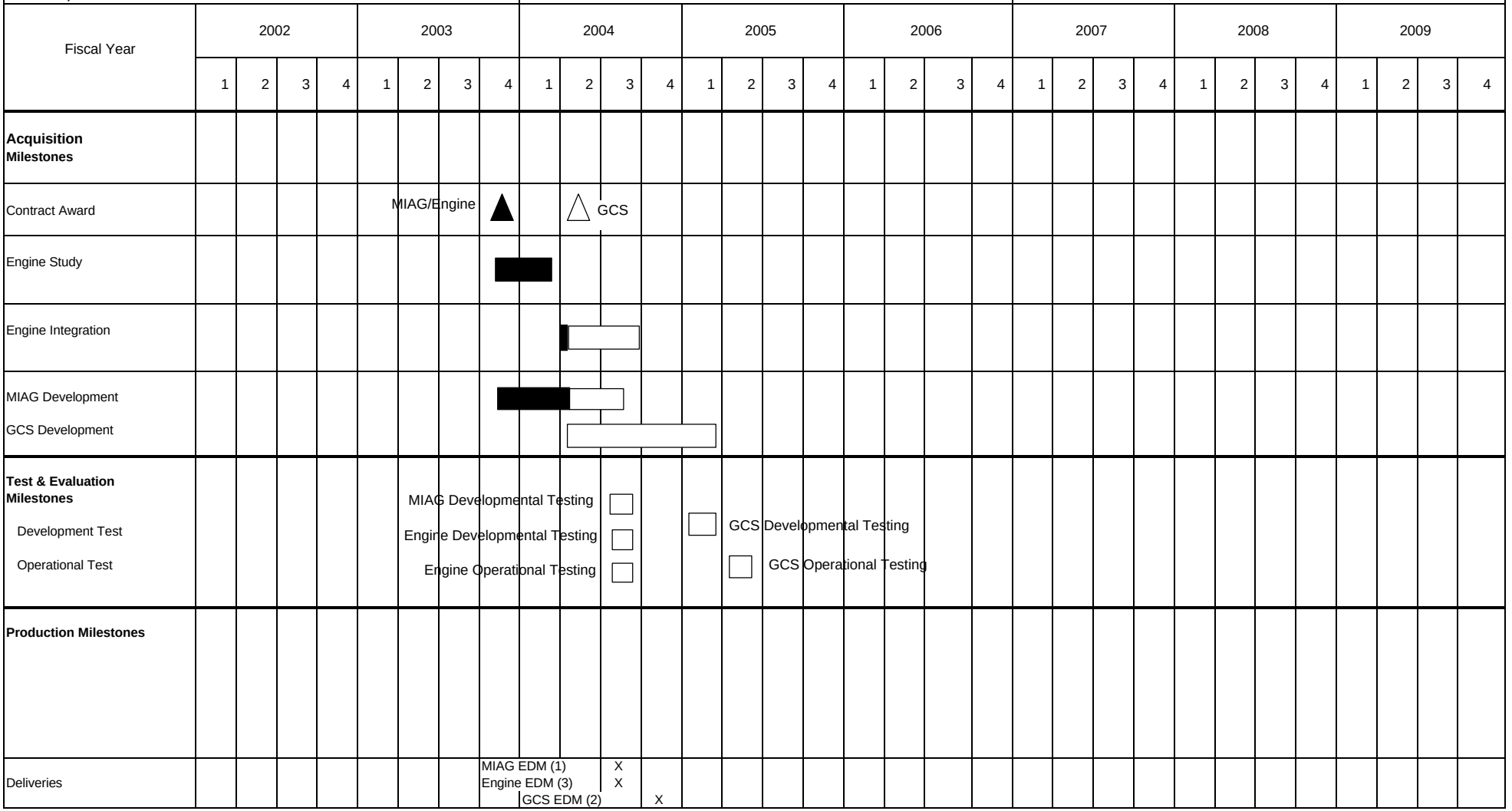
Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**			PROGRAM ELEMENT 0305204N Tactical Unmanned Aerial Vehicles			PROJECT NUMBER AND NAME A4012 Pioneer						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total 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				0.370	03/04			0.000	0.370	
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		0.370		0.000		0.000	0.370	
Remarks:												
Contractor Engineering Support											0.000	
Government Engineering Support	WX	NAWCAD, Pax River, MD		1.084	01/03	0.467	03/04				1.551	
Program Management Support	WX	NAWCAD, Pax River, MD				1.086	03/04				1.086	
Travel	WX	NAWCAD, Pax River, MD		0.020	01/03	0.020	03/04				0.040	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			0.000	1.104		1.573		0.000		0.000	2.677	
Remarks:												
Total Cost			0.000	6.832		14.002		0.000		0.000	20.834	
Remarks:												

R-1 SHOPPING LIST - Item No. 197

CLASSIFICATION:

EXHIBIT R4, Schedule Profile — DATE: **February 2004**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0305204N Tactical Unmanned Aerial Vehicles	A4012 Pioneer



R-1 SHOPPING LIST - Item No. 197

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

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **February 2004**		
APPROPRIATION/BUDGET ACTIVITY **RDT&BA-7**	PROGRAM ELEMENT 0305204N Tactical Unmanned Aerial Vehicles				PROJECT NUMBER AND NAME A4012 Pioneer			
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Pioneer (MIAG/Engine) Contract Award		4Q						
MIAG Development		4Q	1Q-3Q					
Engine Study		4Q	1Q					
Engine Integration			2Q-3Q					
Pioneer GCS Contract Award			2Q					
Pioneer GCS Development			2Q-4Q	1Q				
MIAG Developmental Testing			3Q					
Engine Developmental Testing			3Q					
Engine Operational Testing			3Q					
Developmental Testing				1Q				
Operational Testing				2Q				
MIAG EDM Deliveries			3Q					
Engine EDM Deliveries			3Q					
GCS EDM Deliveries			4Q					

R-1 SHOPPING LIST - Item No. 197

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2004**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT NUMBER AND NAME 0305204N Tactical Unmanned Aerial Vehicles				PROJECT NUMBER AND NAME A9432 Coastline Security Initiative			
COST ($ in Millions)		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
A9432 Coastline Security Initiative			**1.730**					
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

Congressional Add of $1.75M less $.020 Congressional undistributed reductions in RDTE,N for the Coastline Security Technology Initiative that is only for continuation of work with the Institute for Ocean and Systems Engineering to develop surface and airborne autonomous and remotely operated platform surveillance systems for deployment along US Coastlines.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0305204N Tactical Unmanned Aerial Vehicles	A9432 Coastline Security Initiative

B. Accomplishments/Planned Program

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost			1.730	
RDT&E Articles Quantity				

FY04 work with the Institute for Ocean and Systems Engineering to develop surface and airborne autonomous and remotely operated platform surveillance systems for deployment along US Coastlines.

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

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

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0305204N Tactical Unmanned Aerial Vehicles	A9432 Coastline Security Initiative

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2004	FY 2005
Previous President's Budget:	0.000	0.000
Current BES/President's Budget	1.730	0.000
Total Adjustments	1.730	0.000
Summary of Adjustments		
Congressional Undistributed Reductions	-0.020	
Congressional Increases	1.750	
Subtotal	1.730	0.000

Schedule: Not applicable.

Technical: Not applicable.

D. OTHER PROGRAM FUNDING SUMMARY: Not applicable

E. ACQUISITION STRATEGY: Not applicable

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**			PROGRAM ELEMENT 0305204N Tactical Unmanned Aerial Vehicles			PROJECT NUMBER AND NAME A9432 Coastline Security 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
Primary Hardware Development	TBD	TBD				1.730	03/04				1.730	1.730
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		1.730		0.000			1.730	
Remarks:												
Development Support											0.000	
Software Development											0.000	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
Studies & Analyses											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: **February 2004**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**		PROGRAM ELEMENT 0305204N Tactical Unmanned Aerial Vehicles				PROJECT NUMBER AND NAME A9432 Coastline Security 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	
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	0.000		1.730		0.000			1.730	
Remarks:												

R-1 SHOPPING LIST - Item No. 197

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2004**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT NUMBER AND NAME 0305204N Tactical Unmanned Aerial Vehicles				PROJECT NUMBER AND NAME A9434 Miniature Detection Devices			
COST ($ in Millions)		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
A9434 Miniature Detection Devices			**0.989**					
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

Congressional add of $1 million, less $.011 Congressional undistributed reductions, in RDT&E,N to continue the development of lightweight, low power nuclear, chemical, and biological sensors and isotope identification techniques utilizing Micro-Electro-Mechanical Systems (MEMS) technology and innovative detection devices to identify airborne chemical/biological threats and hazardous materials.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0305204N Tactical Unmanned Aerial Vehicles	A9434 Miniature Detection Devices

B. Accomplishments/Planned Program

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost			0.939	
RDT&E Articles Quantity				

Development of lightweight, low power nuclear, chemical, and biological sensors and isotope identification techniques utilizing Micro-Electro-Mechanical Systems (MEMS) technology and innovative detection devices to identify airborne chemical/biological threats and hazardous materials.

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost			0.050	
RDT&E Articles Quantity				

Assist contractor with test planning activities. Coordinate flight test range. Participate in the flight test effort and report results.

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

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0305204N Tactical Unmanned Aerial Vehicles	A9434 Miniature Detection Devices

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2004	FY 2005
Previous President's Budget:	0.000	0.000
Current BES/President's Budget	0.989	0.000
Total Adjustments	0.989	0.000
Summary of Adjustments		
Congressional Undistributed Reductions	-0.011	
Congressional Increases	1.000	
Subtotal	0.989	0.000

Schedule: Not applicable

Technical: Not applicable

D. OTHER PROGRAM FUNDING SUMMARY: Not applicable

E. ACQUISITION STRATEGY: Not applicable

R-1 SHOPPING LIST - Item No. 197

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**			PROGRAM ELEMENT 0305204N Tactical Unmanned Aerial Vehicles			PROJECT NUMBER AND NAME A9434 Miniature Detection Devices						
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	WX	Coalescent, Orlando, FL				0.939	01/04				0.939	
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		0.939		0.000			0.939	
Remarks:												
Development Support											0.000	
Software Development											0.000	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
Studies & Analyses											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**			PROGRAM ELEMENT 0305204N Tactical Unmanned Aerial Vehicles			PROJECT NUMBER AND NAME A9434 Miniature Detection Devices						
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	WX	NAWCAD, Pax River, MD				0.050	12/03				0.050	
Program Management Support											0.000	
Travel											0.000	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			0.000	0.000		0.050		0.000		0.000	0.050	
Remarks:												
Total Cost			0.000	0.000		0.989		0.000			0.989	
Remarks:												

R-1 SHOPPING LIST - Item No. 197

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2004**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT NUMBER AND NAME 0305204N Tactical Unmanned Aerial Vehicles				PROJECT NUMBER AND NAME A9435 Precision Re-Supply Vehicle			
COST ($ in Millions)		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
A9435 Precision Re-Supply Vehicle			**4.203**					
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

Congressional add of $4.25 million, less $.047 Congressional undistributed reductions for precision Re-Supply Vehicle only.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0305204N Tactical Unmanned Aerial Vehicles	A9435 Precision Re-Supply Vehicle

B. Accomplishments/Planned Program

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost			2.182	
RDT&E Articles Quantity				

Contractor will design, develop, test and evaluate, and provide training for a C-130 roll on/roll off platform and UAV Command and Control System with reconnaissance and precision delivery/re-supply capabilities.

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost			1.596	
RDT&E Articles Quantity				

Government engineering support to contract technical direction and administration, review re-supply UAV technology and coordinate with contractor for producibility, conduct testing and evaluation of UAV, provide interface definition between UAV and the control station.

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost			0.425	
RDT&E Articles Quantity				

Program management support.

R-1 SHOPPING LIST - Item No. 197

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0305204N Tactical Unmanned Aerial Vehicles	A9435 Precision Re-Supply Vehicle

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2003	FY 2004	FY 2005
Previous President's Budget:	0.000	0.000	0.000
Current BES/President's Budget	0.000	4.203	0.000
Total Adjustments	0.000	4.203	0.000
Summary of Adjustments			
Congressional Undistributed Reductions		-0.047	
Congressional Increases		4.250	
Subtotal	0.000	4.203	0.000

Schedule: Not applicable

Technical: Not applicable

D. OTHER PROGRAM FUNDING SUMMARY: Not applicable

E. ACQUISITION STRATEGY: Not applicable

R-1 SHOPPING LIST - Item No. 197

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**			PROGRAM ELEMENT 0305204N Tactical Unmanned Aerial Vehicles			PROJECT NUMBER AND NAME A9435 Precision Re-Supply Vehicle						
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				2.182	03/04				2.182	2.182
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		2.182		0.000			2.182	
Remarks:												
Development Support											0.000	
Software Development											0.000	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
Studies & Analyses											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**		PROGRAM ELEMENT 0305204N Tactical Unmanned Aerial Vehicles				PROJECT NUMBER AND NAME A9435 Precision Re-Supply Vehicle						
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	WX	NAWCAD, Pax River, MD				1.596	01/04				1.596	
Program Management Support	WX	NAWCAD, Pax River, MD				0.425	03/04				0.425	
Travel											0.000	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			0.000	0.000		2.021		0.000		0.000	2.021	
Remarks:												
Total Cost			0.000	0.000		4.203		0.000			4.203	
Remarks:												

R-1 SHOPPING LIST - Item No. 197

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: **February 2004**	
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7**				R-1 ITEM NOMENCLATURE 0305205N Endurance Unmanned Aerial Vehicles				
COST ($ in Millions)		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost			**100.212**	**113.438**	**141.796**	**146.127**	**81.324**	**77.507**
A3061 Global Hawk Maritime Demo Sys*		***188.351**	**75.445**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
A4020 BAMS UAV			**24.767**	**113.438**	**141.796**	**146.127**	**81.324**	**77.507**

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

(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 Reconaissance (ISR) asset. This program includes:

1) Global Hawk Maritime Demonstration (GHMD) System. The Secretary of the Navy directed procurement of two USAF Global Hawk Aircraft to include the air vehicle and associated support equipment, integration of maritime payloads, SIGINT and communications for demonstration and experimentation purposes. The GHMD System will serve as 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. This project was initiated in FY 2003 in PE 0305204N, Tactical Unmanned Aerial Vehicles.

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 a FY 2010 IOC. The BAMS UAV will provide Carrier Strike Group (CSG) and Expeditionary Strike Group (ESG) Commanders with a persistent intelligence, surveillance and reconnaissance capability. BAMS UAV will consist of air vehicles, ground systems, sensors, and communications capabilities optimized for the maritime/littoral environment, and will be integrated with other assets to communications relay and ISR missions. The BAMS UAV program is structured to meet the need for persistent ISR as other ISR platforms, specifically as the P-3 and EP-3, begin to reach life expectancy. Although BAMS UAV will not be a one-for-one replacement for any manned platforms, BAMS UAV provides a transformational capability for the Navy.

As of December 2003, the BAMS UAV ORD is with the JROC.

*In FY03, Global Hawk Maritime Demonstration System is funded in PE 0305204N, Tactical Unmanned Aerial Vehicles.

R-1 SHOPPING LIST - Item No.198

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2004**	
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 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
A3061 Global Hawk Maritime Demo System		***188.351**	**75.445**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
RDT&E Articles Qty		**2**						

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

*In FY03, these efforts were executed under PE 0305204N Tactical Unmanned Aerial Vehicles.

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 Global Hawk (GH) Maritime Demonstration (GHMD) system began in FY03. The purpose of the GHMD system is to provide a High Attitude Endurance UAV system for CONOPs, tactics, techniques, and procedures (TTP) in support of maritime ISR mission areas.

The GH High Altitude Endurance (HAE) UAV consists of the GH Aircraft and its Common Ground Segment (CGS). The GH CGS is composed of a Launch and Recovery Element (LRE), a Mission Control Element (MCE) and associated logistics support. The LRE prepares, launches, and recovers the aircraft, while the MCE plans and executes the mission. The MCE dynamically retasks the aircraft including sensors and processes, stores and/or disseminates the data as required. The GH system provides persistent, all-weather, and wide-area coverage in support of military operations.

The Navy's GHMD system is based around the GH aircraft and support equipment procured using the USAF Lot-2 LRIP contract. Modifications for maritime mission sensors will be accomplished under the USAF GHMD EMD contract. The first of the GHMD air vehicles will deliver in 2QFY05 and is scheduled to be used in Fleet Battle Experiments. The second GHMD air vehicle will deliver to the Navy in 3QFY05.

This program was initiated in FY 2003 in Program Element 0305204N, Tactical Unmanned Aerial Vehicle. GHMD capabilities will provide improved "Tandem Thrust" configuration, a modified USAF version flown by the Australians in FY01. FY04 will complete the development tasks.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
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) B. Accomplishments/Planned Program

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		* 140.035	60.000	0.000
RDT&E Articles Quantity		2		

FY 2004: Continue acquisition of air vehicle, LRE, MCE, payload test assets and associated support equipment (fully funded in FY 2003 in PE 0305204N); complete integration of maritime modes in ISS payloads, and communication capabilities; initiate and complete TCS/ MCE platform integration. Conduct integration and testing of payloads, and communication systems. FY04 activities reduces the scope of the GHMD to integrated sensor suite payload modification, LR100 integration, and communications modes.

* FY 03, Global Hawk Maritime Demonstration System funed in PE 0305204N, Tactical Unmanned Aerial Vehicles.

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		* 9.375	11.552	0.000
RDT&E Articles Quantity				

Continued government and contractor engineering including, systems engineering, system certification, logistics analysis, planning for test & evaluation of maritime payloads, test facility infrastructure preparation, assessment of the contractor's compliance with security requirements. The FY 2004 program also supports test agency planning for the demonstration efforts, satellite coordination efforts and the shipboard integration efforts.

* FY 03, Global Hawk Maritime Demonstration System funed in PE 0305204N, Tactical Unmanned Aerial Vehicles.

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		* 4.941	3.893	0.000
RDT&E Articles Quantity				

Contractor Support Services, Program Management Support and Travel.

* FY 03, Global Hawk Maritime Demonstration System funed in PE 0305204N, Tactical Unmanned Aerial Vehicles.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / B.A. 7	0305204N Tactical Unmanned Aerial Vehicles	A3061 Global Hawk Maritime Demonstration System

B. Accomplishments/Planned Program

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		* 20.000		
RDT&E Articles Quantity				

Initiated 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 03, Global Hawk Maritime Demonstration System funed in PE 0305204N, Tactical Unmanned Aerial Vehicles.

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		* 7.000		
RDT&E Articles Quantity				

Developed 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 03, Global Hawk Maritime Demonstration System funed in PE 0305204N, Tactical Unmanned Aerial Vehicles.

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		* 7.000		
RDT&E Articles Quantity				

Established requirements for utilizing existing infrastructure at the Tactical Support Centers (TSC) to support BAMS UAV. Efforts incuded, 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 03, Global Hawk Maritime Demonstration System funed in PE 0305204N, Tactical Unmanned Aerial Vehicles.

R-1 SHOPPING LIST - Item No. 198

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
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) C. PROGRAM CHANGE SUMMARY:

(U) Funding:	*FY 2003	FY 2004	FY 2005
Previous President's Budget:	0.000	76.358	57.316
Current BES/President's Budget:	0.000	75.445	0.000
Total Adjustments	0.000	-0.913	-57.316
Summary of Adjustments			
Congressional Undistributed Reductions		-0.913	
Reprioritization			-57.316
Subtotal	0.000	-0.913	-57.316

(U) Schedule:

(U) Technical: Stops integration, testing, and experimentation with new maritime payloads.

R-1 SHOPPING LIST - Item No.198

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
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

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
PE 0305204N	188.351								

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 of the maritime Integrated Sensor Suite and payloads.

R-1 SHOPPING LIST - Item No.198

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**			PROGRAM ELEMENT 0305205N Endurance Unmanned Aerial Vehicles			PROJECT NUMBER AND NAME 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				60.000	60.000
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		60.000		0.000		0.000	60.000	
Remarks:												
Development Support											0.000	
Software Development											0.000	
Integrated Logistics Support	WX	Various				2.500	12/03				2.500	
Configuration Management											0.000	
Technical Data											0.000	
Studies & Analyses	MIPR	MITRE				0.505	11/03				0.505	
GFE											0.000	
Award Fees											0.000	
Subtotal Support			0.000	0.000		3.005		0.000		0.000	3.005	
Remarks:												

R-1 SHOPPING LIST - Item No.198

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**			PROGRAM ELEMENT 0305205N Endurance Unmanned Aerial Vehicles			PROJECT NUMBER AND NAME 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
Developmental Test & Evaluation	WX	Various				0.950	11/03				0.950	
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		0.950		0.000		0.000	0.950	
Remarks:												
Contractor Engineering Support	RX	Various				0.535	12/03				0.535	
Government Engineering Support	WX	Various				7.062	11/03				7.062	
Program Management Support	WX	NAWC-AD, Pax River, MD				3.818	11/03				3.818	
Travel						0.075	11/03				0.075	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			0.000	0.000		11.490		0.000		0.000	11.490	
Remarks:												
Total Cost			0.000	0.000		75.445		0.000		0.000	75.445	
Remarks:												

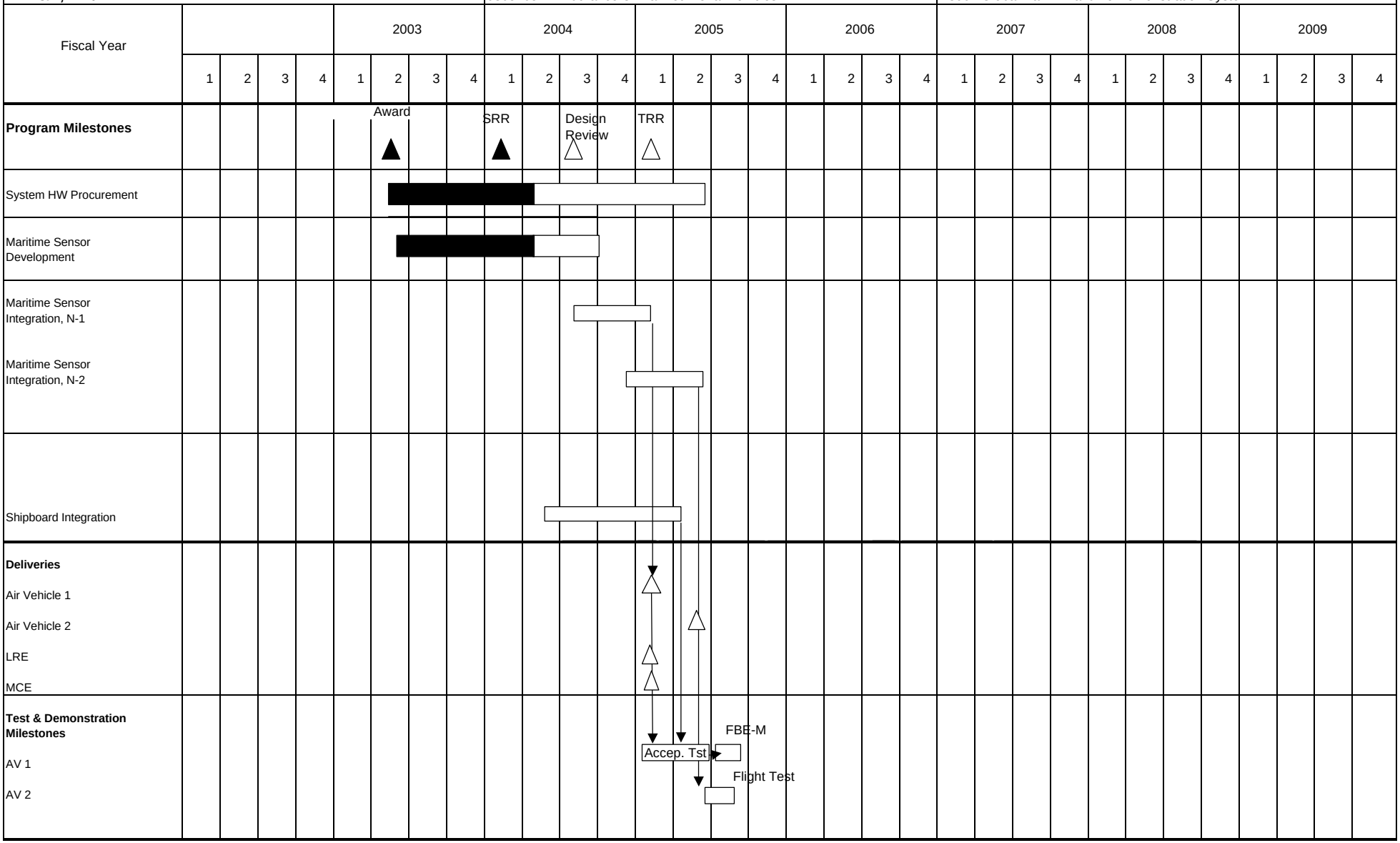
R-1 SHOPPING LIST - Item No.198

EXHIBIT R4, Schedule Profile | DATE: **February 2004**

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



CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **February 2004**		
APPROPRIATION/BUDGET ACTIVITY **RDT&BA-7**	PROGRAM ELEMENT 0305205N Endurance Unmanned Aerial Vehicles				PROJECT NUMBER AND NAME A3061 Global Hawk Maritime Demonstration System			
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Contract Award		2Q						
System Requirements Review			1Q					
Design Review			3Q					
Test Readiness Review (TRR)				1Q				
System Hardware Development		2Q-4Q	1Q-4Q	1Q-2Q				
Maritime Sensor Development		2Q-4Q	1Q-3Q					
Maritime Sensor Integration, N-1			3Q-4Q	1Q				
Maritime Sensor Integration, N-2			4Q	1Q-2Q				
Shipboard Integration			3Q-4Q	1Q-2Q				
Air Vehicle 1 Delivery				1Q				
Air Vehicle 2 Delivery				2Q				
LRE Delivery				1Q				
MCE Delivery				1Q				
Air Vehicle 1 Acceptance Flight Testing				1Q-2Q				
Air Vehicle 2 Acceptance Flight Testing				3Q				

R-1 SHOPPING LIST - Item No.198

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2004**	
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 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
A4020 BAMS UAV			**24.767**	**113.438**	**141.796**	**146.127**	**81.324**	**77.507**
RDT&E Articles Qty				**1**				

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The Broad Area Maritime Surveillance (BAMS) UAV has been designated a pre-Major Defense Acquisition Program (MDAP) for the development and fielding of an HAE UAV for the maritime/littoral environment, with an FY2010 IOC. The BAMS UAV will provide Carrier Strike Group (CSG), Expeditionary Strike Group (ESG) and Joint Forces Maritime Component Commanders (JFMCC) with a persistent Intelligence, Surveillance and Reconnaissance (ISR) capability. BAMS UAV will consist of air vehicles, payloads and ground/surface systems. The BAMS UAV program is structured to meet the need for persistent ISR and to complement other ISR platforms.

BAMS UAV leverages two mission needs statement (MNS); 1) BAMS and Littoral Armed ISR MNS, and 2) Long Endurance, Reconnaissance, Surveillance and Target Acquisition (RSTA) Capability MNS. The BAMS UAV ORD is scheduled for JROC approval in January 2004.

The BAMS UAV AoA investigated air vehicle and payload options in terms of cost, performance and risk. The BAMS UAV AoA was completed June 2003 and concluded, from the three main alternatives, that no one single platform and payload dominated in every category. An acquisition plan is in the final stages of review with ASN (RDA) for development of the BAMS UAV system.

The BAMS UAV will be a spiral based acquisition, entering the System Development and Demonstration (SDD) phase with Milestone B decision at the end of 1QFY05.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0305205N Endurance Unmanned Aerial Vehicles	A4020 BAMS UAV

(U) B. Accomplishments/Planned Program

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost			3.000	90.000
RDT&E Articles Quantity				

Initiate System Demonstration and Development, to include:
FY 2004: Requirements flow-down and initiation of functional and detailed system specifications. Develop modeling and simulation tools for proposal evaluation. Release of Request for Proposal (RFP) and Source Selection activities. Develop Milestone B documentation.
FY 2005: -Enter Systems Demonstration & Development (SD&D) phase of the BAMS UAV program. Award BAMS UAV contract. Initiate development test of articles to include airframes, sensors, payloads, ground elements and communications (Maritime Synthetic Aperature Radar, turreted EO/IR Sensor, Communications Suite) and UAV control stations.
-BAMS system software development.
-Development and acquisition of a systems integration capability, including modeling and simulation, test equipment and software development tools.

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost			17.192	18.863
RDT&E Articles Quantity				

FY 2004: Complete Government efforts on pre-Milestone B and Request for Proposal activities.

FY 2005: Initiates government activities including System Engineering, logistics support, contractor engineering support, and flight clearances. Conduct system functional and System Requirements and Analysis Reviews. Begin JITC, JTA and security certification activities as well as begin satellite coordination. Establish test plan working groups for developmental and operational testing.

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost			4.575	4.575
RDT&E Articles Quantity				

Contractor Support Services, Program Management Support, and Travel.

R-1 SHOPPING LIST - Item No. 198

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0305205N Endurance Unmanned Aerial Vehicles	A4020 BAMS UAV

(U) C. PROGRAM CHANGE SUMMARY:

(U) Funding:	FY 2003	FY 2004	FY 2005
Previous President's Budget	0.000	25.090	224.427
Current BES/President's Budget	0.000	24.767	113.438
Total Adjustments	0.000	-0.323	-110.989
Summary of Adjustments			
Congressional Undistributed Reductions		-0.323	
Economic Assumptions			-0.315
Reprioritization			-110.674
Subtotal	0.000	-0.323	-110.989

(U) Schedule:

(U) Technical: Not applicable

R-1 SHOPPING LIST - Item No. 198

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0305205N Endurance Unmanned Aerial Vehicles	A4020 BAMS UAV

(U) D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
APN 044200 BAMS UAV					161.823	272.278	269.901

(U) E. ACQUISITION STRATEGY:

The BAMS UAV program will develop and rapidly field an ISR capability with a FY10 Initial Operational Capability (IOC).
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 BAMS UAV will be milestone based acquisition, entering the System Development and Demonstration (SDD) phase with a Milestone B decision in 1QFY05. The BAMS UAV AoA was completed in June 2003. The BAMS UAV AoA examined air vehicle and payload options. Acquisition strategy decision is pending.

R-1 SHOPPING LIST - Item No. 198

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**			PROGRAM ELEMENT 0305205N Endurance Unmanned Aerial Vehicles			PROJECT NUMBER AND NAME 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/CP	TBD				3.000	05/04	90.000	11/04		93.000	93.000
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		3.000		90.000		0.000	93.000	
Remarks:												
Development Support											0.000	
Software Development											0.000	
Integrated Logistics Support	WX	Various				4.700	11/03	4.700	11/04	Continuing	Continuing	
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		4.700		4.700			9.400	
Remarks:												

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**		PROGRAM ELEMENT 0305205N Endurance Unmanned Aerial Vehicles			PROJECT NUMBER AND NAME 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	WX	TBD						1.900	11/04	Continuing	Continuing	
Operational Test & Evaluation	WX	TBD						0.300	11/04	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			0.000	0.000		0.000		2.200		0.000	2.200	
Remarks:												
Contractor Engineering Support	RX	Various				0.535	11/03	0.535	11/04	Continuing	Continuing	
Government Engineering Support	WX	NAWC-AD, Pax River, MD				11.957	11/03	11.428	11/04	Continuing	Continuing	
Program Management Support	WR/RX	NAWC-AD, Pax River, MD				4.500	11/03	4.500	11/04	Continuing	Continuing	
Travel	WX	NAWC-AD, Pax River, MD				0.075	11/03	0.075	11/04	Continuing	Continuing	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			0.000	0.000		17.067		16.538			33.605	
Remarks:												
Total Cost			0.000	0.000		24.767		113.438		0.000	138.205	
Remarks:												

R-1 SHOPPING LIST - Item No.198

CLASSIFICATION:

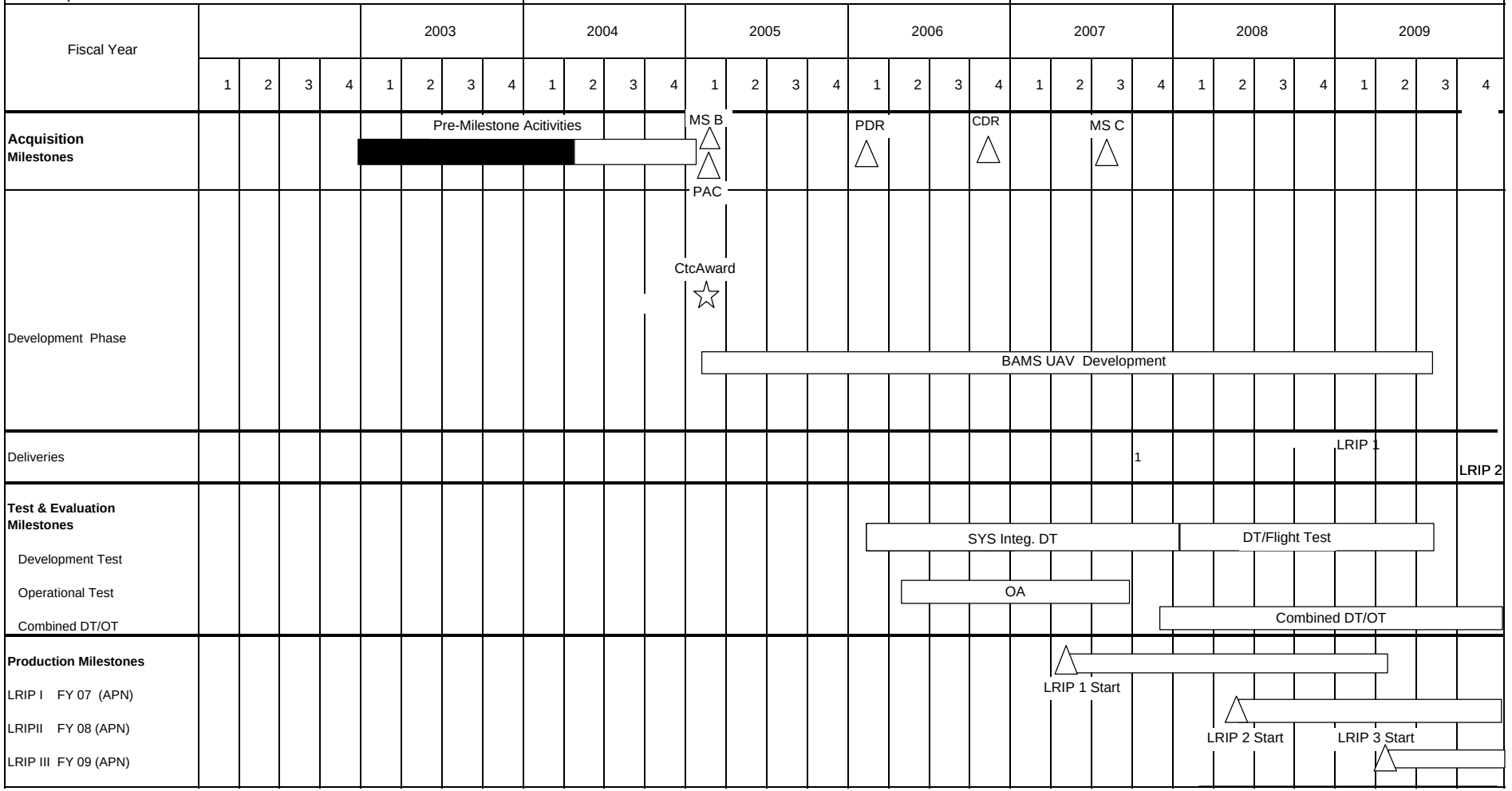
EXHIBIT R4, Schedule Profile

DATE: **February 2004**

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



R-1 SHOPPING LIST - Item No. 198

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

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **February 2004**		
APPROPRIATION/BUDGET ACTIVITY **RDT&BA-7**	PROGRAM ELEMENT 0305205N Endurance Unmanned Aerial Vehicles				PROJECT NUMBER AND NAME A4020 BAMS UAV			
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Pre Milestone Activities		1Q-4Q	1Q-4Q	1Q				
Milestone B				1Q				
Contract Award				1Q				
Post Award Conference (PAC)				1Q				
Operational Assessment					2Q-4Q	1Q-3Q		
Milestone C						3Q		
IOC								4Q
PDR					1Q			
CDR					4Q			
BAMS UAV Development				1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-3Q
Deliveries (EMDs)						4Q		
Deliveries (LRIP1)								1Q
Deliveries (LRIP2)								4Q
System Integration/DT					1Q-4Q	1Q-4Q		
DT/Flight Test							1Q-4Q	1Q-3Q
Combined DT/OT						3Q-4Q	1Q-4Q	1Q-4Q
LRIP 1						2Q-4Q	1Q-4Q	1Q-2Q
LRIP 2							2Q-4Q	1Q-4Q
LRIP 3								2Q-4Q
OPEVAL (FY 10)								
FRP (FY 10)								

R-1 SHOPPING LIST - Item No.198

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: **February 2004**	
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7**					R-1 ITEM NOMENCLATURE 0305206N Airborne Reconnaissance Systems			
COST ($ in Millions)		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost		**16.171**	**26.989**	**10.191**	**29.125**	**18.745**	**19.124**	**19.504**
H2694 Advanced Digital Sensors		**2.521**	**12.206**	**10.191**	**29.125**	**18.745**	**19.124**	**19.504**
R2476 Framing Reconnaissance Camera		**2.817**						
R2807 Hyperspectral Upgrade to Airborne Cameras		**3.416**	**3.955**					
R9114 Electro-Optical Framing Reconnaissance Camera		**4.977**	**3.461**					
R9115 NRL Applied Optics Reconnaissance Technology		**2.440**						
R9437 Deploy Unmanned Sys for Targeting, Exploitation, Reconn (DUSTER)			**5.142**					
R9438 Multi-spectral glass windows for Airborne Reconn Poded Sensors			**2.225**					

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. Starting in FY05, the advanced sensor developments will provide the technology transition modules for operational use necessary to support the EP-3E JMOD Baseline program 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 components for the EP-3E and Special Projects (SP) aircraft and follow-on candidate aircraft.

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.

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification	DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5**	R-1 ITEM NOMENCLATURE 0305206N Airborne Reconnaissance Systems

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.

R-1 SHOPPING LIST - Item No. 199

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2004**	
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			
COST ($ in Millions)		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost		**2.521**	**12.206**	**10.191**	**29.125**	**18.745**	**19.124**	**19.504**

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.

FY05 begins the development of JMOD Baseline Configuration into all EP-3 aircraft. These efforts carry forward the developments from prior years and continues the development efforts to ensure that EP-3 aircraft maintain their interoperability and relevance to emerging threats and changing technology. This funding provides for the development of the JMOD Baseline capabilites and Spirals. The JMOD Baseline program builds on a common baseline with two spirals. Spiral 1 (ForceNet) includes high band and special collection subsystems (Story Finder and MPEG) and data dissemination (Story Teller). Spiral 2 (Precision Targeting) includes a precision targeting capabilities, obsolescence and Story Maker. The Special Projects development efforts are on-going as planned.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
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) B. Accomplishments/Planned Program

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		0.386	0.700	0.000
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 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		0.733	2.684	0.000
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 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		0.462	0.400	0.000
RDT&E Articles Quantity				

Story Finder integration and DT. DT slipped due to aircraft availability and requires FY04 funding. Story Finder OT now included with Spiral 1 OT.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
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) B. Accomplishments/Planned Program

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		0.000	0.317	0.000
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 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		0.450	0.813	0.000
RDT&E Articles Quantity				

Story Maker development, integration and demonstration. Story Maker into Systems Integration Lab (SIL) and perform flight test.

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		0.000	4.943	3.490
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 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		0.490	2.349	0.000
RDT&E Articles Quantity				

Story Finder MPEG upgrades and continued software development. Story Finder MPEG integration into SIL. Add MPEG message set to Story Teller.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
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) B. Accomplishments/Planned Program

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		0.000	0.000	4.043
RDT&E Articles Quantity				

Spiral 1 integration and test includes high band and special collection subsystems (Story Finder and MPEG) and data dissemination (Story Teller), developed under H2694 in previous years.

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		0.000	0.000	2.658
RDT&E Articles Quantity				

Spiral 2 development includes precision targeting capabilities, obsolescence and Story Maker.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
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 2003	FY 2004	FY 2005
Previous President's Budget:	2.521	13.345	10.313
Current BES/President's Budget	2.521	12.206	10.191
Total Adjustments	0.000	-1.139	-0.122
Summary of Adjustments			
Congressional program reductions			
Congressional undistributed reductions		-0.148	
Congressional rescissions			
SBIR/STTR Transfer			
Economic Assumptions			-0.033
Reprogrammings			
Other adjustments			
Reprioritization of requirements		-0.991	-0.089
Congressional increases			
Subtotal	0.000	-1.139	-0.122

(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 DTcompletes 4Q/03. OT originally scheduled to complete in 1Q/04 is now combined with Spiral 1 OT in 2Q/05. Story Finder DT slipped due to aircraft availability to 1Q/04. The FY05 Story Maker DT/OT was deleted since it is now included in Spiral 2 DT/OT. Spiral 1 DT/OT is 2Q/05. Spiral 2 DT/OT is 1Q/06. 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. Both Spiral 1 and Spiral 2 contract awards are expected 2Q/05.

(U) Technical:

Not Applicable

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: **February 2004**
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) D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
Line Item #33 APN-5 EP-3E OSIP 11-01	57.646	55.392	28.339	55.554	62.415	29.063	30.218	10.389	329.016
Line Item #44 APN-5 Special Projects Aircraft OSIP 19-97	10.807	56.131	12.415	20.686	14.205	14.475	14.714	0.000	143.433

(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.

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2004**				
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
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	04/04				1.633	1.633
Ancillary Hdwre Development-S.T.	SS/CPFF	Raytheon Systems, IN		0.100	12/02	0.300	01/04				0.400	0.400
Ancillary Hdwre Development-S.B.	SS/CPFF	Raytheon Systems, TX		0.400	12/02						0.400	0.400
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-	SS/CPFF	CTC, Johnstown, PA	4.228								4.228	4.228
Weight Reduction, Congressional												
Ancillary Hdwre Development-S.C.	SS/CPFF	Raytheon Indianapolis, IN				5.162	02/04				5.162	5.162
Ancillary Hdwre Development-J2	SS/CPFF	L3Com,TX				1.148	02/04				1.148	1.148
Ancillary Hdwre Development-S.P.	SS/CPFF	Argon, VA				2.500	01/04				2.500	2.500
Ancillary Hdwre Development-S.P.	SS/CPFF	TBD						3.490	12/04		3.490	3.527
Ancillary Hdwre Development	SS/CPFF	Raytheon Systems, TX								12.897	12.897	12.897
Ancillary Hdwre Dev - Spiral 1		TBD						2.425	01/05	Continuing	Continuing	
Ancillary Hdwre Dev - Spiral 2		TBD						1.580	01/05	Continuing	Continuing	
Subtotal Product Development			17.119	0.886		9.380		7.495		Continuing	Continuing	

Remarks:

R-1 SHOPPING LIST - Item No. 199

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2004**				
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
Develop Support	C/CPFF	GRCI, Vienna, VA	1.994	0.262	12/02	0.560	01/04				2.816	2.816
Develop Support	WX	NAWC,WD, China Lake, CA	3.511	0.434	12/02	0.835	01/04				4.780	
Develop Support	WX	NSWC, Dahlgren, VA	0.589			0.225	12/03				0.814	
Software Development - Story Maker	SS/CPFF	GD, Sunnyvale, CA	1.806	0.550	12/02	0.326	02/04				2.682	2.682
Develop Support - Spiral 1		TBD						1.096	01/05	Continuing	Continuing	
Develop Support - Spiral 2		TBD						0.730	01/05	Continuing	Continuing	
Subtotal Support			7.900	1.246		1.946		1.826		Continuing	Continuing	

Remarks:

R-1 SHOPPING LIST - Item No. 199

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2004**				
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	02/04				0.520	
DT/OT & Eval	WX	NRL, MD	0.100	0.100	11/02	0.110	02/04				0.310	
T&E - Spiral 1	TBD	TBD						0.370	01/05	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	0.811	0.139	11/02	0.350	01/04	0.350	01/05	Continuing	Continuing	
Travel	WX	NAWC,AD Pax River, MD	0.100	0.100	11/02	0.100	11/03	0.100	01/05	Continuing	Continuing	
ILS Suppt	WX	NAWC,AD Pax River, MD	0.050	0.050	11/02	0.050	02/04	0.050	01/05	Continuing	Continuing	
Subtotal Management			0.961	0.289		0.500		0.500		Continuing	Continuing	
Remarks:												
Total Cost			26.330	2.521		12.206		10.191		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 199

CLASSIFICATION:

EXHIBIT R4, Schedule Profile — DATE: **February 2004**

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

Fiscal Year	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
Program Milestones **Milestones**						LRIP II				SP SRR	FRP																	
Engineering **Milestones**						PDR		CDR																				
Test & Evaluation Milestones Development Test							Complete DT		SF DT					Spiral 1				Spiral 2										
Development Test/ Operational Test																												
Contract Milestones												Spiral 1 Contract Award		Spiral 2 Contract Award															

CLASSIFICATION:

Exhibit R-4a, Schedule Detail					DATE: **February 2004**			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT 0305206N Airborne Reconnaissance Systems				PROJECT NUMBER AND NAME H2694 Advanced Digital Sensors			
Schedule Profile		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
System Requirements Review (SRR)			SP 2Q					
Preliminary Design Review (PDR)		2Q						
LRIP II		2Q						
Critical Design Review (CDR)		4Q						
Developmental Testing		3Q-4Q						
Full Rate Production (FRP)			3Q					
Story Finder DT			1Q					
Spiral 1 DT/OT				2Q				
Spiral 2 DT/OT					1Q			
Spiral 1 Contract Award				2Q				
Spiral 2 Contract Award				2Q				

R-1 SHOPPING LIST - Item No. 199

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2004**	
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 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost		**2.817**						
RDT&E Articles Qty								

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.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
RDT&E, N / BA-7	0305206N Airborne Reconnaissance Systems	R2476 Framing Reconnaissance Camera	

(U) B. Accomplishments/Planned Program

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		0.500	0.000	0.000
RDT&E Articles Quantity				

Demonstration of JPEG 2000 Image Decompression Boards completed.

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		0.500	0.000	0.000
RDT&E Articles Quantity				

Hyperspectral Target Cueing Demonstration. End-to-end demonstration using JPEG 2000 Boards completed.

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

EO Framing Camera Upgrades for Precision Strike. Real time data fusion processor completed.

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		1.817	0.000	0.000
RDT&E Articles Quantity				

Airborne Image Exploitation System upgrades completed.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
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 2003	FY 2004	FY 2005
Previous President's Budget:	2.887	0.000	0.000
Current BES/President's Budget	2.817	0.000	0.000
Total Adjustments	-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 adjustments			
Reprioritization of requirements			
Congressional increases			
Subtotal	-0.070	0.000	0.000

(U) Schedule:

Not Applicable.

(U) Technical:

Not Applicable

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
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:

Line Item No. & Name	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
PE 0305207N, DARP, Special Project A/C	29.335	10.649	10.939	11.410	11.589			11.764	85.686

(U) E. ACQUISITION STRATEGY:

The program is to develop framing reconnaissance camera technology to support improved capabilities for programs such as SHARP.

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE:				February 2004
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0305206N Airborne Reconnaissance Advanced Develo			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	0.350	09/03						1.006	1.006
EO Framing Camera Upgrades	CPFF	Recon Opt., Barrington, IL	5.903	0.200	10/03						6.103	6.103
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		0.350	09/03						0.350	0.350
ARIES Upgrades	CPFF	Space Dyn. Lab. Logan, UT		1.417	03/03						1.417	1.417
Subtotal Product Development			54.365	2.317		0.000		0.000			56.682	56.682

Remarks:

R-1 SHOPPING LIST - Item No. 199

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: **February 2004**		
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
Technical Support	WR	NRL, Wash, DC		0.500	09/03						0.500	
Subtotal T&E			0.672	0.500						0.000	1.172	
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.												

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																																DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**									PROGRAM ELEMENT NUMBER AND NAME 0305206N Airborne Reconnaissance Systems												PROJECT NUMBER AND NAME R2476 Framing Reconnaissance 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**	JPEG 2000						JPEG 2000 Demo			Target Cueing			Aries Upgrades																			
Test & Evaluation **Milestones** Development Test Operational Test																																
Contract **Milestones**																																

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **February 2004**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT 0305206N Airborne Reconnaissance Systems				PROJECT NUMBER AND NAME R2476 Framing Reconnaissance Cameras			
Schedule Profile		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Complete Decompression Boards		4Q						
JPEG 2000 Demonstration			2Q					
Target Cueing Demonstration			3Q					
Complete Aries Upgrades			4Q					

R-1 SHOPPING LIST - Item No. 199

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2004**	
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 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost		**3.416***	**3.955**					
RDT&E Articles Qty								

*The FY2003 includes Congressional adds reflecting Hyperspectral Upgrades to Airborne Cameras ($3.416 million) which will be executed under R2807 .
**The FY2004 includes Congressional adds reflecting Modular Upgrades to Airborne Reconnaissance Sensors ($3.9 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.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: **February 2004**
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 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		3.200	0.000	0.000
RDT&E Articles Quantity				

Hyperspectral upgrade to airborne cameras completed.

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		0.216	0.000	0.000
RDT&E Articles Quantity				

Camera test support.

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		0.000	3.955	0.000
RDT&E Articles Quantity				

Longwave infrared hyperspectral upgrade to airborne reconnaissance camera planned.

R-1 SHOPPING LIST - Item No. 199

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0305206N Airborne Reconnaissance Systems	R2807 Hyperspectral Upgrade to Airborne Cameras

(U) C. PROGRAM CHANGE SUMMARY:

(U) Funding:	FY 2003	FY 2004	FY 2005
Previous President's Budget:	3.416	0.000	0.000
Current BES/President's Budget	3.416	3.955	0.000
Total Adjustments	0.000	3.955	0.000
Summary of Adjustments			
Congressional program reductions			
Congressional undistributed reductions			
Congressional rescissions			
SBIR/STTR Transfer			
Economic Assumptions			
Reprogrammings			
Other Adjustments			
Reprioritization of requirements			
Congressional increases		3.955	
Subtotal	0.000	3.955	0.000

(U) Schedule:

Not Applicable.

(U) Technical:

Not Applicable

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
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:

Line Item No. & Name	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
PE 0305207N, DARP, Special Project A/C	29.335	10.649	10.939	11.410	11.589			11.764	85.686

(U) E. ACQUISITION STRATEGY:

The program is to develop framing reconnaissance camera technology to support improved capabilities for programs such as SHARP.

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)											DATE: **February 2004**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, 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	
Hyperspectral Modular Upgrades	C/CPFF	TBD		3.200	09/03						3.200	3.200	
Longwave Infrared Upgrade	C/CPFF	TBD				3.655	05/04				3.655	3.655	
Subtotal Product Development				3.200		3.655					6.855	6.855	

Remarks:

R-1 SHOPPING LIST - Item No. 199

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)

DATE: **February 2004**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, 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		0.216						0.000	0.216	0.000
Camera test support	C/CPFF	NRL, Wash, DC				0.300	02/04					
Subtotal T&E			0.000	0.216		0.300				0.000	0.516	
Remarks:												
											0.000	0.000
											0.000	0.000
Subtotal Management			0.000	0.000				0.000			0.000	
Remarks:												
Total Cost			0.000	3.416		3.955		0.000			7.371	6.855

Remarks: This program has no support costs.

CLASSIFICATION:

EXHIBIT R4, Schedule Profile | DATE: **February 2004**

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																																
						Hyperspectral Module																										
Engineering											Camera Upgrade																					
Milestones																																
Engineering															Longwave Infrared																	
Milestones															Upgrade																	
Test & Evaluation																																
Milestones																																
Development Test																																
Operational Test																																
Contract																																
Milestones																																

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **February 2004**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT 0305206N Airborne Reconnaissance Systems				PROJECT NUMBER AND NAME R2807 Hyperspectral Upgrade to Airborne Cameras			
Schedule Profile		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Camera Upgrade			3Q					
Hyperspectral Module		4Q						
Commence Longwave Infrared Upgrade			3Q					
Complete Longwave Infrared Upgrade				2Q				

R-1 SHOPPING LIST - Item No. 199

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2004**	
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 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost		* **4.977**	** **3.461**					
RDT&E Articles Qty								

*The FY2003 includes Congressional adds reflecting Electro-Optical Framing Reconnaissance Cameras ($4.977 million) which will be executed under R9114 .
**The FY2004 includes Congressional adds reflecting Advanced Airborne Image Processor ($3.461 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.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
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 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		0.000	0.000	0.000
RDT&E Articles Quantity				

Electro-Optical Framing Reconnaissance Cameras completed.

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		0.450	0.000	0.000
RDT&E Articles Quantity				

Electro-Optical Framing Reconnaissance Cameras completed.

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		1.977	0.000	0.000
RDT&E Articles Quantity				

Electro-Optical Framing Reconnaissance Cameras completed.

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		0.000	3.461	0.000
RDT&E Articles Quantity				

An Advanced Airborne Image Processor with software for target detection is planned.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
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 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		0.700	0.000	0.000
RDT&E Articles Quantity				

Electro-Optical Framing Reconnaissance Cameras completed.

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		1.850	0.000	0.000
RDT&E Articles Quantity				

Electro-Optical Framing Reconnaissance Cameras completed.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0305206N Airborne Reconnaissance Systems	R9114 Electro-Optical Framing Reconnaissance Camera

(U) C. PROGRAM CHANGE SUMMARY:

(U) Funding:	FY 2003	FY 2004	FY 2005
Previous President's Budget:	4.977	0.000	0.000
Current BES/President's Budget	4.977	3.461	0.000
Total Adjustments	0.000	3.461	0.000
Summary of Adjustments			
Congressional program reductions			
Congressional undistributed reductions			
Congressional rescissions			
SBIR/STTR Transfer			
Economic Assumptions			
Reprogrammings			
Othre Adjustments			
Reprioritization of requirements			
Congressional increases	0.000	3.461	
Subtotal	0.000	3.461	0.000

(U) Schedule:

Not Applicable.

(U) Technical:

Not Applicable

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
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:

Line Item No. & Name	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
PE 0305207N, DARP, Special Project A/C	29.335	10.649	10.939	11.410	11.589			11.764	85.686

(U) E. ACQUISITION STRATEGY:

The program is to develop framing reconnaissance camera technology to support improved capabilities for programs such as SHARP.

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)											DATE: **February 2004**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**			PROGRAM ELEMENT 0305206N Airborne Reconnaissance Advanced Develop			PROJECT NUMBER AND NAME 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	
Framing Camera Upgrades	C/CPFF	Recon Opt., Barrington, IL		4.460	10/03						4.460	4.460	
Airborne Image Processor	C/CPFF	TBD				3.261	05/04				3.261	3.261	
Subtotal Product Development				4.460		3.261					7.721	7.721	

Remarks:

R-1 SHOPPING LIST - Item No. 199

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)

DATE: **February 2004**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME
RDT&E, 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	WR	NRL, Wash, DC	0.000	0.517						0.000	0.517	0.517
Camera test support	WR	NRL, Wash, DC				0.200	02/04				0.200	
Subtotal T&E			0.000	0.517		0.200				0.000	0.717	0.517
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		3.461		0.000			8.438	8.238

Remarks: This program has no support costs.

R-1 SHOPPING LIST - Item No. 199

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																																DATE: **February 2004**
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										
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**																																
									IRFPA producibility demo																									
Engineering **Milestones**																																
Engineering **Milestones**																																
Test & Evaluation **Milestones** Development Test Operational Test																																
Contract **Milestones**																																

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **February 2004**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT 0305206N Airborne Reconnaissance Systems				PROJECT NUMBER AND NAME R9114 Electro-Optical Framing Reconn Camera			
Schedule Profile		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
IRFPA Producibility			2Q/3Q					
Improved Camera			3Q/4Q					
Commence Airborne Image processor			3Q					
Complete Airborne Image processor				2Q				

R-1 SHOPPING LIST - Item No. 199

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2004**	
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 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost		**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.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
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 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		0.790	0.000	0.000
RDT&E Articles Quantity				

NRL Applied Optics Reconnaissance Technology completed.

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		0.500	0.000	0.000
RDT&E Articles Quantity				

NRL Applied Optics Reconnaissance Technology completed.

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		0.750	0.000	0.000
RDT&E Articles Quantity				

NRL Applied Optics Reconnaissance Technology completed.

R-1 SHOPPING LIST - Item No. 199

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0305206N Airborne Reconnaissance Systems	R9115 NRL Applied Optics Reconnaissance Technology

(U) B. Accomplishments/Planned Program

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		0.400	0.000	0.000
RDT&E Articles Quantity				

NRL Applied Optics Reconnaissance Technology completed.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0305206N Airborne Reconnaissance Systems	R9115 NRL Applied Optics Reconnaissance Technology

(U) C. PROGRAM CHANGE SUMMARY:

(U) Funding:	FY 2003	FY 2004	FY 2005
Previous President's Budget:	2.440	0.000	0.000
Current BES/President's Budget	2.440	0.000	0.000
Total Adjustments	0.000	0.000	0.000
Summary of Adjustments			
Congressional program reductions			
Congressional undistributed reductions			
Congressional rescissions			
SBIR/STTR Transfer			
Economic Assumptions			
Reprogrammings			
Other Adjustments			
Reprioritization of requirements			
Congressional increases			
Subtotal	0.000	0.000	0.000

(U) Schedule:

Not Applicable.

(U) Technical:

Not Applicable

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
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:

Line Item No. & Name	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
PE 0305207N, DARP, Special Project A/C	29.335	10.649	10.939	11.410	11.589			11.764	85.686

(U) E. ACQUISITION STRATEGY:

The program is to develop framing reconnaissance camera technology to support improved capabilities for programs such as SHARP.

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)											DATE: **February 2004**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, 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
Reconnaissance Technologies	CPFF	TBD		2.000	12/03						2.000	2.000
Subtotal Product Development				2.000							2.000	2.000

Remarks:

R-1 SHOPPING LIST - Item No. 199

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)

DATE: **February 2004**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0305206N Airborne Reconnaissance Advanced Develop	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	WR	NRL, Wash, DC	0.000	0.440	09/03					0.000	0.440	
Subtotal T&E			0.000	0.440						0.000	0.440	
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. 199

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																																DATE: **February 2004**
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										
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**										Ball Gimbal Mount		Advanced Camera																				
Test & Evaluation **Milestones** Development Test Operational Test																																
Contract **Milestones**																																

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **February 2004**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT 0305206N Airborne Reconnaissance Systems				PROJECT NUMBER AND NAME R9115 NRL Applied Optics Reconnaissance Tech			
Schedule Profile		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Ball Gimbal Mount			2Q/3Q					
Long focal length lens			4Q					
Interchangeable EO and IR			3Q					
High frame rate camera			4Q					
Advanced Camera			4Q					

R-1 SHOPPING LIST - Item No. 199

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2004**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, BA-7**	PROGRAM ELEMENT NUMBER AND NAME 0305206N Airborne Reconnaissance Systems				PROJECT NUMBER AND NAME R9437 Deployable Unmanned Sys for Targeting, Exploitation, and Reconn (DUSTER)			
COST ($ in Millions)		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost		**0.000**	**5.142***					
RDT&E Articles Qty								

*The FY2004 includes Congressional adds reflecting Deployable Unmanned Aerial Vehicle (UAV) System for Targeting Exploitation and Reconnaissance (DUSTER) ($5.142 million) which will be executed under R9437 .

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.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0305206N Airborne Reconnaissance Systems	R9437 Deployable Unmanned Sys for Targeting, Exploitation, and Reconn (DUSTER)

(U) B. Accomplishments/Planned Program

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		0.000	5.142	0.000
RDT&E Articles Quantity				

Plans are to integrate newly developed technologies in the areas of real-time reconnaissance, imagery processing/exploitation, avionics, and control stations with command and control and imagery exploitation capabilities onto a single long-range airborne capability suitable for UAV's.

R-1 SHOPPING LIST - Item No. 199

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0305206N Airborne Reconnaissance Systems	R9437 Deployable Unmanned Sys for Targeting, Exploitation, and Reconn (DUSTER)

(U) C. PROGRAM CHANGE SUMMARY:

(U) Funding:	FY 2003	FY 2004	FY 2005
Previous President's Budget:	0.000	0.000	0.000
Current BES/President's Budget	0.000	5.142	0.000
Total Adjustments	0.000	5.142	0.000
Summary of Adjustments			
Congressional program reductions			
Congressional undistributed reductions			
Congressional rescissions			
SBIR/STTR Transfer			
Economic Assumptions			
Reprogrammings			
Other Adjustments			
Reprioritization of requirements			
Congressional increases	0.000	5.142	
Subtotal	0.000	5.142	0.000

(U) Schedule:

Not Applicable.

(U) Technical:

Not Applicable

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME 0305206N Airborne Reconnaissance Systems	PROJECT NUMBER AND NAME R9437 Deployable Unmanned Sys for Targeting, Exploitation, and Reconn (DUSTER)

(U) D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
PE 0305207N, DARP, Special Project A/C	29.335	10.649	10.939	11.410	11.589			11.764	85.686

(U) E. ACQUISITION STRATEGY:

The program is to develop framing reconnaissance camera technology to support improved capabilities for programs such as SHARP.

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)											DATE: **February 2004**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**			PROGRAM ELEMENT 0305206N Airborne Reconnaissance Advanced Develop			PROJECT NUMBER AND NAME R9437 Deployable Unmanned Sys for Targeting, Exploitation, and Reconn (DUSTER)							
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	
Reconnaissance System for UAV	C/CPFF	TBD				4.742	05/04				4.742	4.742	
Subtotal Product Development						4.742					4.742	4.742	

Remarks:

R-1 SHOPPING LIST - Item No. 199

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2) | DATE: **February 2004**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-7**

PROGRAM ELEMENT: 0305206N Airborne Reconnaissance Advanced Develop

PROJECT NUMBER AND NAME: R9437 Deployable Unmanned Sys for Targeting, Exploitation, and Reconn (DUSTER)

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	WR	NRL, Wash, DC	0.000	0.000		0.400	02/04			0.000	0.400	0.000
Subtotal T&E			0.000	0.000		0.400				0.000	0.400	0.000
Remarks:												
											0.000	0.000
											0.000	0.000
Subtotal Management			0.000	0.000				0.000			0.000	
Remarks:												
Total Cost			0.000	0.000		5.142		0.000			5.142	4.742
Remarks: This program has no support costs.												

R-1 SHOPPING LIST - Item No. 199

CLASSIFICATION:

EXHIBIT R4, Schedule Profile			DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT NUMBER AND NAME 0305206N Airborne Reconnaissance Systems	PROJECT NUMBER AND NAME R9437 Deployable Unmanned Sys for Targeting, Exploitation, and Reconn (DUSTER)	

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**																																
Test & Evaluation **Milestones** Development Test Operational Test																																
Contract **Milestones**																																

Reconnaissance System for UAV

CLASSIFICATION:

Exhibit R-4a, Schedule Detail					DATE: **February 2004**			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT 0305206N Airborne Reconnaissance Systems				PROJECT NUMBER AND NAME R9437 Deployable Unmanned Sys for Targeting, Exploitation, and Reconn (DUSTER			
Schedule Profile		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Commence Reconnaissance System for UAV			3Q					
Complete Reconnaissance System for UAV				2Q				

R-1 SHOPPING LIST - Item No. 199

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2004**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, BA-7**	PROGRAM ELEMENT NUMBER AND NAME 0305206N Airborne Reconnaissance Systems				PROJECT NUMBER AND NAME R9438 Multi-spectral glass windows for Airborne Reconnaissance Podded Sensors			
COST ($ in Millions)		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost		**0.000**	**2.225***					
RDT&E Articles Qty								

*The FY2004 includes Congressional adds reflecting Multi-Spectral Glass Windows for Airborne Reconnaissance Podded Sensors ($2.225 million) which will be executed under R9438 .

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.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0305206N Airborne Reconnaissance Systems	R9438 Multi-spectral glass windows for Airborne Reconnaissance Podded Sensors

(U) B. Accomplishments/Planned Program

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		0.000	2.225	0.000
RDT&E Articles Quantity				

Plans are to develop techniques for making optical quality multi-spectral glass windows for airborne reconnaissance podded sensors.

R-1 SHOPPING LIST - Item No. 199

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0305206N Airborne Reconnaissance Systems	R9438 Multi-spectral glass windows for Airborne Reconnaissance Podded Sensors

(U) C. PROGRAM CHANGE SUMMARY:

(U) Funding:	FY 2003	FY 2004	FY 2005
Previous President's Budget:	0.000	0.000	0.000
Current BES/President's Budget	0.000	2.225	0.000
Total Adjustments	0.000	2.225	0.000
Summary of Adjustments			
Congressional program reductions			
Congressional undistributed reductions			
Congressional rescissions			
SBIR/STTR Transfer			
Economic Assumptions			
Reprogrammings			
Other Adjustments			
Reprioritization of requirements			
Congressional increases	0.000	2.225	
Subtotal	0.000	2.225	0.000

(U) Schedule:

Not Applicable.

(U) Technical:

Not Applicable

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME 0305206N Airborne Reconnaissance Systems	PROJECT NUMBER AND NAME R9438 Multi-spectral glass windows for Airborne Reconnaissance Podded Sensors

(U) D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
PE 0305207N, DARP, Special Project A/C	29.335	10.649	10.939	11.410	11.589			11.764	85.686

(U) E. ACQUISITION STRATEGY:

The program is to develop framing reconnaissance camera technology to support improved capabilities for programs such as SHARP.

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)											DATE: **February 2004**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**			PROGRAM ELEMENT 0305206N Airborne Reconnaissance Advanced Develop			PROJECT NUMBER AND NAME R9438 Multi-spectral glass windows for Airborne Reconnaissance Podded 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	
Optical Quality Windows	C/CPFF	TBD				1.975	05/04				1.975	1.975	
Subtotal Product Development						1.975					1.975	1.975	

Remarks:

R-1 SHOPPING LIST - Item No. 199

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2) | DATE: **February 2004**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-7**

PROGRAM ELEMENT: 0305206N Airborne Reconnaissance Advanced Develop

PROJECT NUMBER AND NAME: R9438 Multi-spectral glass windows for Airborne Reconnaissance Podded 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
Camera test support	WR	NRL, Wash, DC	0.000	0.000		0.250	02/04			0.000	0.250	0.000
Subtotal T&E			0.000	0.000		0.250				0.000	0.250	0.000
Remarks:												
											0.000	0.000
											0.000	0.000
Subtotal Management			0.000	0.000				0.000			0.000	
Remarks:												
Total Cost			0.000	0.000		2.225		0.000			2.225	1.975

Remarks: This program has no support costs.

R-1 SHOPPING LIST - Item No. 199

CLASSIFICATION:

EXHIBIT R4, Schedule Profile			DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT NUMBER AND NAME 0305206N Airborne Reconnaissance Systems	PROJECT NUMBER AND NAME R9438 Multi-spectral glass windows for Airborne Reconnaissance Podded Sensors	

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**																																
Test & Evaluation **Milestones** Development Test Operational Test																																
Contract **Milestones**																																

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

CLASSIFICATION:

Exhibit R-4a, Schedule Detail					DATE: **February 2004**			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT 0305206N Airborne Reconnaissance Systems				PROJECT NUMBER AND NAME R9438 Multi-spectral glass windows for Airborne Reconnaissance Podded Sensors			
Schedule Profile		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Commence Optical Quality Reconnaissance Windows			3Q					
Complete Optical Quality Reconnaissance Windows				2Q				

R-1 SHOPPING LIST - Item No. 199

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: **February 2004**	
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7**					R-1 ITEM NOMENCLATURE 0305207N Manned Reconnaissance Systems			
COST ($ in Millions)		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost		**22.505**	**16.521**	**20.203**	**23.162**	**23.445**	**23.944**	**24.432**
Z0117*	REEF POINT	**8.096**	**11.748**	**20.203**	**23.162**	**23.445**	**23.944**	**24.432**
E2673	F/A-18E/F TACTICAL RECONNAISSANCE (SHARP)	**14.409**	**3.784**					
H9439**	ADVANCED AIRCRAFT COLLECTION SYSTEM		**0.989**					

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 Feb 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.

*Executed at a higher level of classification (no project R-2 exhibits). Project unit changed from R0117 to Z0117.
**Executed at a higher level of classification (no project R-2 exhibits).

R-1 SHOPPING LIST - Item No. 200

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2004**	
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 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost		****** **14.409**	**3.784**					

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

**The FY 2003 budget reflects an $11.9 million dollar 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 Feb 2003.

In the FY2003 President's budget, Congress added $11.9M for development and integration of a solid state recorder in Advance Tactical Airbone Reconnaisance System (ATARS). This develeopment is fully funded with this Congressional Add.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0305207N Manned Reconnaissance Systems	E2673 F/A-18E/F Tactical Reconnaissance (SHARP)

(U) B. Accomplishments/Planned Program

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		0.231	0.240	
RDT&E Articles Quantity				

Continue program management to coordinate development activities during the EMD phase of the program.

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost			2.000	
RDT&E Articles Quantity				

Congressional Add for digital shutter development.

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		2.235		
RDT&E Articles Quantity				

Continue testing and integration of SHARP into the F/A-18E/F SCS.

R-1 SHOPPING LIST - Item No. 200

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0305207N Manned Reconnaissance Systems	E2673 F/A-18E/F Tactical Reconnaissance (SHARP)

(U) B. Accomplishments/Planned Program

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost			0.993	
RDT&E Articles Quantity				

Software development.

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost			0.151	
RDT&E Articles Quantity				

Complete ancillary hardware development/EMD upgrades.

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		11.543		
RDT&E Articles Quantity				

Develop and intergrate solid state recorder in ATARS.

R-1 SHOPPING LIST - Item No. 200

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0305207N Manned Reconnaissance Systems	E2673 F/A-18E/F Tactical Reconnaissance (SHARP)

(U) B. Accomplishments/Planned Program

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		0.400	0.400	
RDT&E Articles Quantity				

Perform Operational Testing.

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

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

R-1 SHOPPING LIST - Item No. 200

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0305207N Manned Reconnaissance Systems	E2673 F/A-18E/F Tactical Reconnaissance (SHARP)

(U) C. PROGRAM CHANGE SUMMARY:

(U) Funding:	FY 2003	FY 2004
Previous President's Budget:	14.414	1.827
Current BES/President's Budget	14.409	3.784
Total Adjustments	-0.005	1.957
Summary of Adjustments		
Congressional program reductions		
Congressional undistributed reductions		-0.043
Congressional rescissions		
SBIR/STTR Transfer		
Economic Assumptions		
Reprogrammings	-0.005	
Reprioritization		
Congressional increases		2.000
Subtotal	-0.005	1.957

(U) Schedule:

SHARP: OT-IIC OPEVAL has moved to third and fourth quarter in FY2004 to allow completion of high altitude sensor development.

ATARS DSS: Development completion was delayed because of the challenges in defining the aircraft integration.

(U) Technical:

Not Applicable.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0305207N Manned Reconnaissance Systems	E2673 F/A-18E/F Tactical Reconnaissance (SHARP)

(U) D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
P-1 LINE ITEM 3-F/A-18E/F (FIGHTER) HORNET (MYP)									
APN-1/ BLI 014500 Weapons System Cost	65.299	69.300	0.000	0.000	0.000	0.000	0.000	0.000	134.599

(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. Integration of the "off-the-shelf" solid state recorder onto USMC F/A-18Ds will be accomplished within this project through a sole source contract to BAE. Due to the value of the equipment , no OPEVAL will be required and the change will be incorporated prior to retrofit procurement.

R-1 SHOPPING LIST - Item No. 200

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)											DATE: **February 2004**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**			PROGRAM ELEMENT 0305207N Manned Reconnaissance Systems			PROJECT NUMBER AND NAME E2673 F/A-18E/F Tactical Reconnaissance (SHARP)						
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 HW Dev POD Prototype	SS/FP-LOE	Raytheon, Indianapolis, IN	14.373								14.373	14.373
Ancillary HW Dev Sensor Prototype	C/FFP	VARIOUS	2.507								2.507	2.507
Ancillary HW Dev RMS Prototype	C/Plus	Space Dyn Lab, Logan , UT	3.500								3.500	3.500
Ancillary HW Dev Prototype	WX	NRL, Washington, DC	4.050			2.000	04/04				6.050	
Primary HW Dev POD EMD	SS/FP-LOE	Raytheon, Indianapolis, IN	39.718								39.718	39.718
Ancillary HW Dev Sensor EMD	FFP/CPIF	Recon Optical, Barrington, IL	17.841								17.841	17.841
Ancillary HW Dev Datalink EMD	PD	SPAWAR, San Diego, CA	0.778								0.778	
Ancillary HW Dev / EMD Upgrades	WX	VARIOUS				0.151	11/03				0.151	
Primary HW Dev ATARS	SS/CPFF	BAE, NY		9.500	01/04						9.500	9.500
Subtotal Product Development			82.767	9.500		2.151					94.418	

Remarks:

R-1 SHOPPING LIST - Item No. 200

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**		PROGRAM ELEMENT 0305207N Manned Reconnaissance Systems				PROJECT NUMBER AND NAME E2673 F/A-18E/F Tactical Reconnaissance (SHARP)						
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 Support	WX	VARIOUS	1.660	0.200	11/02	0.200	11/03				2.060	
Software Development Prototype	WX	NRL, Washington, DC	8.509								8.509	
Software Development /RMS	WX	NAWCWD, China Lake, CA	16.756	2.235	11/02	0.993	11/03				19.984	
Software Development /OFP	WX	NAWCWD, China Lake, CA	8.831								8.831	
Integrated Logistics Support	WX	NAWCAD, Lakehurst, NJ	2.474								2.474	
Development Support(ATARS)	WX	VARIOUS		2.043	06/03						2.043	
Subtotal Support			38.230	4.478		1.193					43.901	

Remarks:

R-1 SHOPPING LIST - Item No. 200

CLASSIFICATION:

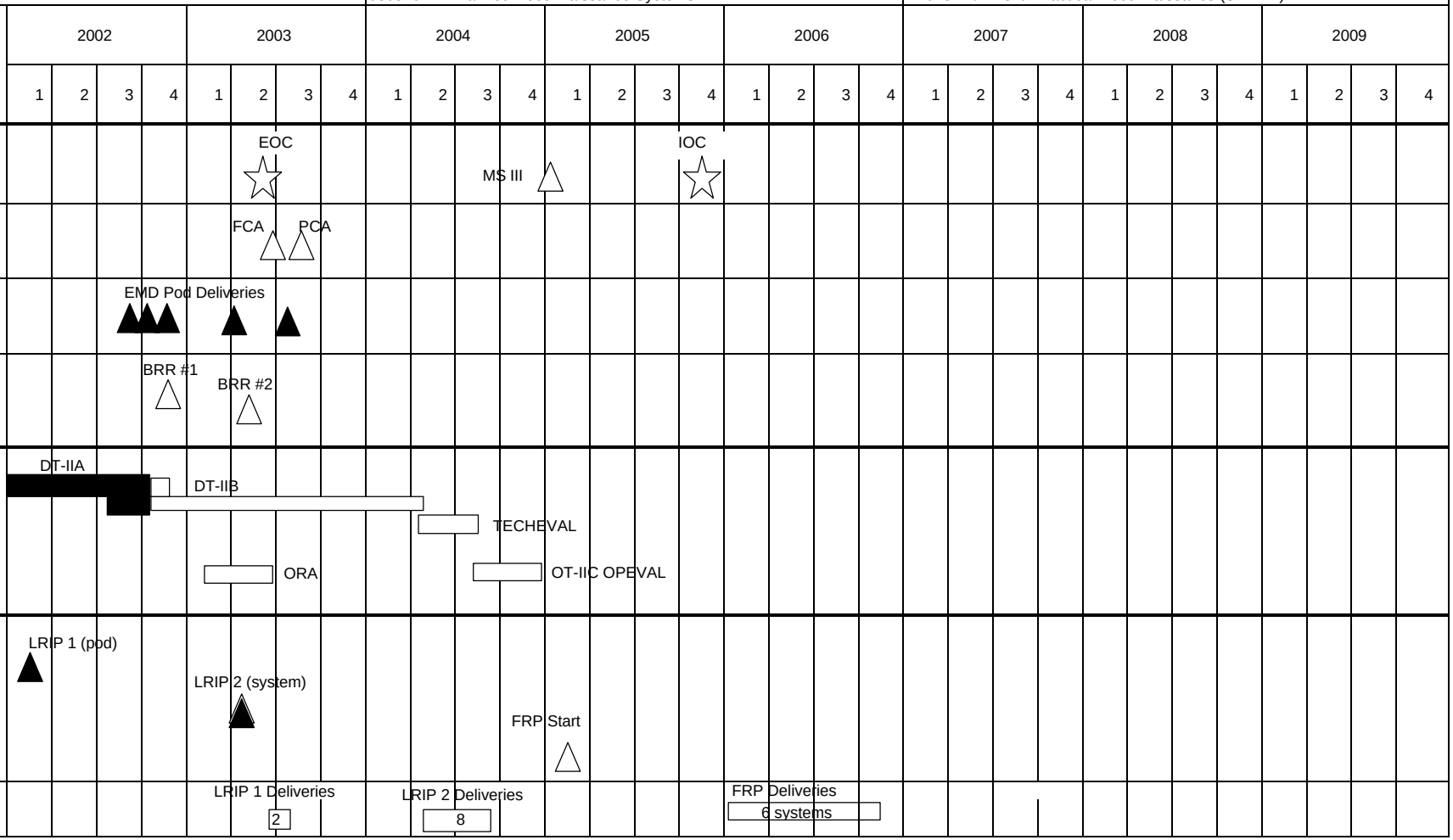
Exhibit R-3 Cost Analysis (page 2)											DATE: **February 2004**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**		PROGRAM ELEMENT Program Element (PE) No. and Name				PROJECT NUMBER AND NAME 0305207N Manned Reconnaissance Systems						
Cost Categories	Contract Method & Type	Performing Activity & 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	0.400	02/04				0.833	
Subtotal T&E			17.388	0.400		0.400					18.188	
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			140.214	14.409		3.784					158.407	
Remarks:												

R-1 SHOPPING LIST - Item No. 200

CLASSIFICATION:

EXHIBIT R4, Schedule Profile — DATE: **February 2004**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0305207N Manned Reconnaissance Systems	E2673 F/A-18E/F Tactical Reconnaissance (SHARP)



R-1 SHOPPING LIST - Item No. 200

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

CLASSIFICATION:

Exhibit R-4a, Schedule Detail					DATE: **February 2004**			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT 0305207N Manned Reconnaissance Systems				PROJECT NUMBER AND NAME E2673 F/A-18E/F Tactical Reconnaissance (SHARP)			
Schedule Profile for SHARP	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Developmental Testing (DT-IIA)	1Q-4Q							
Software Delivery 1XXSW	4Q							
EMD Pod Deliveries	3Q-4Q	2Q-3Q						
Low-Rate Initial Production I (LRIP I) Decision	1Q							
Software Delivery 2XXSW		2Q						
Developmental Testing (DT-IIB)	3Q-4Q	1Q-4Q	1Q-2Q					
Low-Rate Initial Production II Decision		2Q						
Operational Readiness Assessment (ORA)		1Q-2Q						
Functional Configuration Audit (FCA)		2Q						
Low-Rate Initial Production I Delivery		2Q-3Q						
Technical Evaluation (TECHEVAL)			2Q-3Q					
Physical Configuration Audit		3Q						
Operational Evaluation (OT-IIC) (OPEVAL)			3Q-4Q					
Low-Rate Initail Production II Delivery			2Q-3Q					
EOC		2Q						
IOC				4Q				
Milestone III/FRP				1Q				
Full Rate Contract Award				1Q				
Full Rate Production Deliveries					1Q-4Q			

R-1 SHOPPING LIST - Item No. 200

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																															DATE: **February 2004**
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)											
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
ATARS Solid State Recorder Contract Award										△																						
Integration/Development																																
Test & Evaluation Milestones Development Test												DT																				

R-1 SHOPPING LIST - Item No. 200

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **February 2004**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT 0305207N Manned Reconnaissance Systems				PROJECT NUMBER AND NAME E2673 F/A-18E/F Tactical Reconnaissance (SHARP)			
Schedule Profile for ATARS	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Development Phase			2Q-4Q	1Q-2Q				
Developmental Testing (DT)			4Q	1Q				
Contract Award			2Q					

R-1 SHOPPING LIST - Item No. 200

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: **February 2004**	
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7**					R-1 ITEM NOMENCLATURE 0305208N Distributed Common Ground Systems (DCGS)			
COST ($ in Millions)		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost		**8.518**	**8.818**	**3.635**	**3.694**	**3.762**	**3.848**	**3.925**
A2174 CIGSS (JSIPS-N)		**4.322**	**4.319**	**3.635**	**3.694**	**3.762**	**3.848**	**3.925**
A9118 Prec Targeting Sys Modernization								
A9157 Cross Program DCGS-N Integration		**2.927**						
A9158 Converged Architecture for NFN		**1.269**						
9440 Enterprise Targeting and Strike System			**4.499**					

(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; $1.3 million in FY 2003 for Converged Architecture for Naval Fires Network, less Congressional undistributed reductions; and $4.5 million in FY 2004 for Enterprise Targeting and Strike System, 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 exisitng group modification (GRP MOD) actions comprising the JSIPS-N life cycle modernization plan.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2004**	
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)			
COST ($ in Millions)		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost		**4.322**	**4.319**	**3.635**	**3.694**	**3.762**	**3.848**	**3.925**
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.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0305208N Distributed Common Ground Systems (DCGS	A2174 CIGSS (JSIPS-N)

B. Accomplishments/Planned Program

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		4.322	4.319	3.635
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 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost				
RDT&E Articles Quantity				

R-1 SHOPPING LIST - Item No. 201

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0305208N Distributed Common Ground Systems (DCGS)	A2174 CIGSS (JSIPS-N)

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2003	FY 2004	FY 2005
Previous President's Budget:	4.322	4.421	3.647
Current BES/President's Budget	4.322	4.319	3.635
Total Adjustments	0.000	-0.102	-0.012
Summary of Adjustments			
Congressional program reductions			
Congressional undistributed reductions		-0.102	
Congressional rescissions			
SBIR/STTR Transfer			
Economic Assumptions			-0.012
Reprioritization			
Other Navy/OSD Adjustments			
Congressional increases			
Subtotal		-0.102	-0.012

Schedule:

Not Applicable.

Technical:

Not Applicable.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0305208N Distributed Common Ground Systems (DCGS)	A2174 CIGSS (JSIPS-N)

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
OPN, BLI 291400 Common Imagery Ground Support/Systems (CIGSS)	51.157	40.288	53.173	16.095	74.254	117.274	61.782	Continuing	Continuing

E. ACQUISITION STRATEGY: *

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.

F. MAJOR PERFORMERS: **

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**		PROGRAM ELEMENT 0305208N Distributed Common Ground Systems (DCGS)			PROJECT NUMBER AND NAME 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	18.514	4.322	11/02	4.319	11/03	3.635	11/04	Continuing	Continuing	
Integrated Logistics Support												
Configuration Management												
Technical Data												
Studies & Analyses												
GFE												
Award Fees												
Subtotal Support			18.514	4.322		4.319		3.635		Continuing	Continuing	
Remarks:												

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**		PROGRAM ELEMENT 0305208N Distributed Common Ground Systems (DCGS)				PROJECT NUMBER AND NAME 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	COMOPTEVFOR, VA	0.375								0.375	
Operational Test & Evaluation												
Live Fire Test & Evaluation												
Test Assets												
Tooling												
GFE												
Award Fees												
Subtotal T&E			0.375	0.000		0.000		0.000			0.375	
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			18.889	4.322		4.319		3.635		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 201

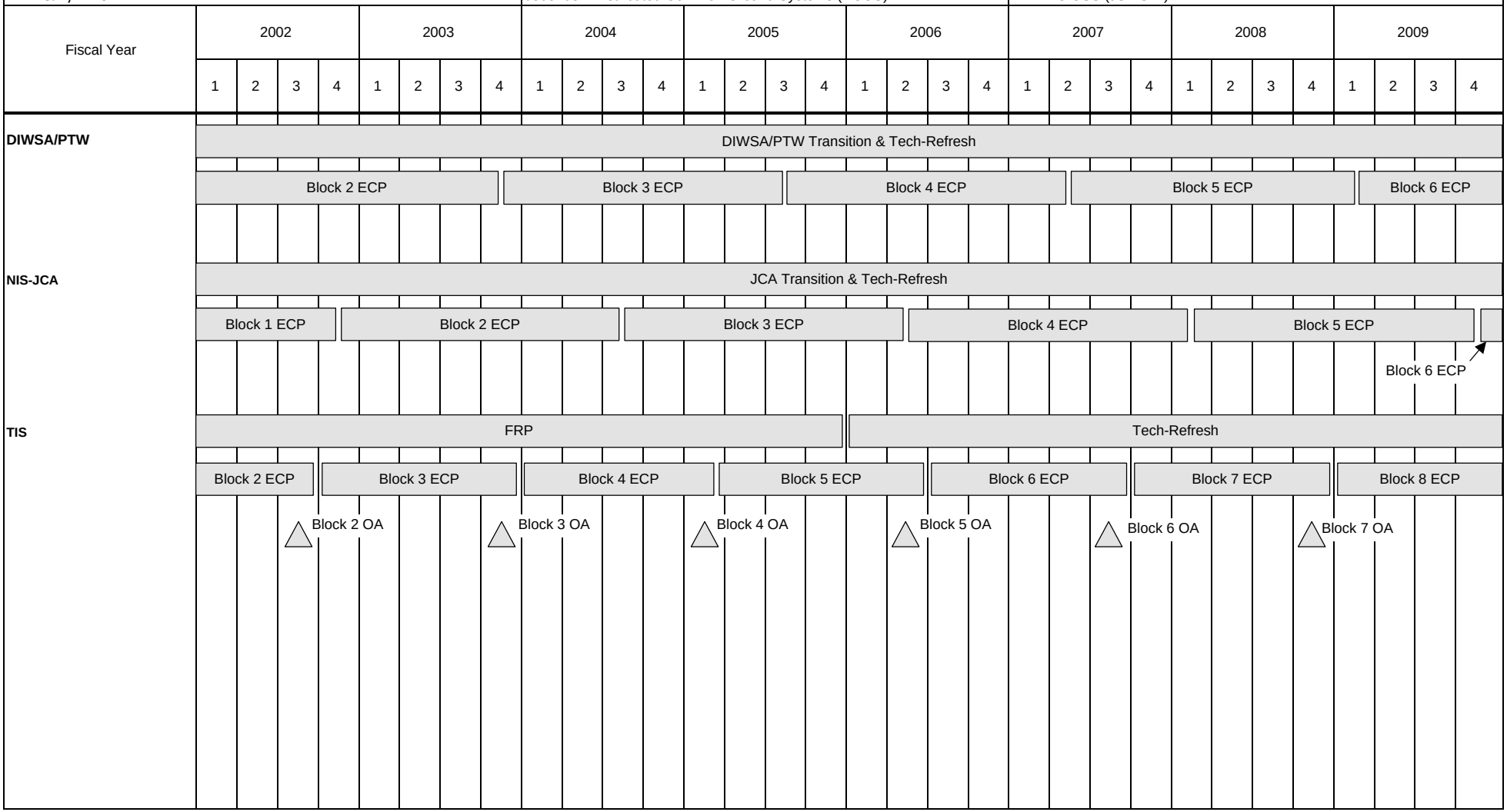
CLASSIFICATION:

EXHIBIT R4, Schedule Profile | DATE: **February 2004**

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)



R-1 SHOPPING LIST - Item No. 201

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

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **February 2004**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT 0305208N Distributed Common Ground Systems (DCGS)				PROJECT NUMBER AND NAME A2174 CIGSS (JSIPS-N)			
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
DIWSA/PTW Transition & Tech-Refresh	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
Block 2 (V4.1) ECP	1Q-4Q	1Q-4Q						
Block 3 (V4.2) ECP		4Q	1Q-4Q	1Q-3Q				
Block 4 (V4.X) ECP				3Q-4Q	1Q-4Q	1Q-2Q		
Block 5 (V4.X) ECP						2Q-4Q	1Q-4Q	1Q
Block 6 (V4.X) ECP								1Q-4Q
NIS-JCA Transition & Tech-Refresh	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
Block 1 ECP	1Q-4Q							
Block 2 ECP	4Q	1Q-4Q	1Q-3Q					
Block 3 ECP			3Q-4Q	1Q-4Q	1Q-2Q			
Block 4 ECP					2Q-4Q	1Q-4Q	1Q	
Block 5 ECP							1Q-4Q	1Q-4Q
Block 6 ECP								4Q
TIS Baseline Full Rate Production	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q				
Tech Refresh					1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
Block 2 ECP	1Q-3Q							
Block 2 OA	3Q							
Block 3 ECP	4Q	1Q-4Q						
Block 3 OA		4Q						
Block 4 ECP			1Q-4Q	1Q				
Block 4 OA				1Q				
Block 5 ECP				1Q-4Q	1Q-2Q			
Block 5 OA					2Q			
Block 6 ECP					3Q-4Q	1Q-3Q		
Block 6 OA						3Q		
Block 7 ECP						4Q	1Q-4Q	
Block 7 OA							4Q	
Block 8 ECP								1Q-4Q

R-1 SHOPPING LIST - Item No. 201

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2004**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT NUMBER AND NAME 0305208N Distributed Common Ground Systems (DCGS)				PROJECT NUMBER AND NAME 9440 Enterprise Targeting and Strike System			
COST ($ in Millions)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY
Project Cost		**4.499**						
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.

R-1 SHOPPING LIST - Item No. 201

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0305208N Distributed Common Ground Systems (DCGS	9440 Enterprise Targeting and Strike System

B. Accomplishments/Planned Program

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost			4.499	
RDT&E Articles Quantity				

Development of an open architecture, modernization and enhancement of precision strike capabilities for NFN.

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

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

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0305208N Distributed Common Ground Systems (DCGS)	9440 Enterprise Targeting and Strike System

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2003	FY 2004	FY 2005
Previous President's Budget:		0.000	
Current BES/President's Budget		4.499	
Total Adjustments	0.000	4.499	0.000
Summary of Adjustments			
Congressional undistributed reductions		-0.051	
Congressional increases			
SBIR/STTR Transfer			
Economic Assumtions			
Reprioitization		4.550	
Reprogrammings			
Subtotal			
	0.000	4.499	0.000

Schedule:

Not Applicable.

Technical:

Not Applicable.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
RDT&E, N / BA-7	0305208N Distributed Common Ground Systems (DCGS)	9440 Enterprise Targeting and Strike System	

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
OPN, BLI 291400 Common Imagery Ground Support/Systems (CIGSS)	51.157	40.288	53.173	16.095	74.254	117.274	61.782	Continuing	Continuing

E. ACQUISITION STRATEGY: *

F. MAJOR PERFORMERS: **

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**			PROGRAM ELEMENT 0305208N Distributed Common Ground Systems (DCGS)			PROJECT NUMBER AND NAME 9440 Enterprise Targeting and Strike 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												
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				4.499	11/04					
Integrated Logistics Support												
Configuration Management												
Technical Data												
Studies & Analyses												
GFE												
Award Fees												
Subtotal Support			0.000	0.000		4.499		0.000				
Remarks:												

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**			PROGRAM ELEMENT 0305208N Distributed Common Ground Systems (DCGS)			PROJECT NUMBER AND NAME A9158 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											0.000	
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	
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			0.000	0.000		4.499					4.499	
Remarks:												

R-1 SHOPPING LIST - Item No. 201

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification									DATE: February 2004		
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7**						R-1 ITEM NOMENCLATURE PE 0305927N Navy Space Surveillance System (NSSS)					
COST ($ in Millions)	Prior Years Cost		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Total PE Cost	**2.635**		**5.017**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**7.652**
Project X0125 Navy Space Surveillance System	**2.635**		**5.017**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**7.652**
Quantity of RDT&E Articles											

(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.

The Fence program transfers to US Air Force cognizance effective 2004. **(X0125)**

(**U) JUSTIFICATION FOR BUDGET ACTIVITY:**

This program is funded under Operational Sytems Development because it encompasses engineering and manufacturing development for upgrading existing operational systems.

R-1 SHOPPING LIST - Item No. 202

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: **February 2004**			
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 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	**2.635**		**5.017**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**7.652**
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. 202

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**		PROJECT NUMBER AND NAME X0125 Navy Space Surveillance System (NSSS)

(U) B. Accomplishments/Planned Program

	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	5.017	0.000	0.000
RDT&E Articles Quantity	0	0	0

(U) FY 2003 ACCOMPLISHMENTS: ($5.017)
($.487) Completed development of detailed architecture and design for RF sensors, communications, processing, modeling and simulation.
($4.530) Developed 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**

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	PE 0305927N Navy Space Surveillance System (NSSS)	X0125 Navy Space Surveillance System (NSSS)

(U) C. PROGRAM CHANGE SUMMARY:

(U) Funding:	FY 2003	FY 2004	FY 2005
President's Budget :	9.548	0.000	0.000
Current BES/President's Budget	5.017	0.000	0.000
Total Adjustments	-4.531	0.000	0.000

Summary of Adjustments

SSGN	-3.999		
SEASNIPER	-0.200		
Section 8100: Business Process Reform	-0.038		
Section 8135: Economic Assumptions	-0.054		
Section 8109: IT Cost Growth	-0.018		
Section 8029: PL107-248 FY03 FFRDC Reduction	-0.006		
Miscellaneous Navy Adjustments			
Miscellaneous Department Adjustments	-0.216		
Subtotal	-4.531	0.000	0.000

(U) Schedule:

NOT APPLICABLE

(U) Technical:

NOT APPLICABLE

R-1 SHOPPING LIST - Item No. 202

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	PE 0305927N Navy Space Surveillance System (NSSS)	X0125 Navy Space Surveillance System (NSSS)

(U) D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
(U) OPN Line #2901	1.992	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing

(U) E. ACQUISITION STRATEGY:

NOT APPLICABLE

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2004**				
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)						
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	3.206	05/03						4.406	
Ancillary Hardware Development											0.000	
Aircraft Integration											0.000	
Ship Integration											0.000	
Ship Suitability											0.000	
Systems Engineering			1.435	1.800							3.235	
Training Development											0.000	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			2.635	5.006		0.000		0.000		0.000	7.641	
Remarks:												
Development Support											0.000	
Software Development											0.000	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
Studies & Analyses											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2004**				
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)						
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			2.635	5.017		0.000		0.000		0.000	7.652	
Remarks:												

R-1 SHOPPING LIST - Item No. 202

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																																	DATE: **February 2004**
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																																
Prototype Phase																																
Radar System Development						PDR △		CDR △																								
Test & Evaluation Milestones Development Test Operational Test								DT △																								
Procurements																																
Deliveries																																

R-1 SHOPPING LIST - Item No. 202

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

CLASSIFICATION:

Exhibit R-4a, Schedule Detail					DATE: **February 2004**			
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)								
Contract Preparation								
Preliminary Design Review (PDR)		2Q						
System Development		1Q-4Q						
Critical Design Review (CDR)		4Q						
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. 202

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: **February 2004**	
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7**					R-1 ITEM NOMENCLATURE 0307207N Aerial Common Sensor			
COST ($ in Millions)		FY 2003	*FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost			**3.955**	**24.909**	**49.864**	**99.783**	**193.824**	**74.043**
H3015 Aerial Common Sensor			**3.955**	**24.909**	**49.864**	**99.783**	**193.824**	**74.043**

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

Provides funding for development of the Navy's Aerial Common Sensor (ACS) involvement in a post-Milestone B joint Army/Navy program. Provides funds for the Navy's unique requirements to the Army's ACS platform. The ACS is the Navy's recapitalization of the the EP-3E and offers a transformational platform to fullfill the Navy and OSD requirements for migration to the Joint Airborne SIGINT Architecture (JASA). Development will be made to integrate additional workstations, ensure connectivity to multi-service platforms and ground stations, procure two ACS test platforms and to develop an initial mission systems spiral that will integrate the Navy's unique maritime SIGINT mission requirements.

* FY 2004 funding was a congressional add in PE 0605152N Studies and Analysis Support for Future SIGINT Requirements/Joint ACS Program. Those funds will be executed in that R-1 line item and used to study the available replacement options and the viability of ACS as a replacement program for the EP-3. Follow on development funding for ACS is budgeted and will be executed in this R-1 line item.

R-1 SHOPPING LIST - Item No. 203

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2004**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT NUMBER AND NAME 0307207N Aerial Common Sensor				PROJECT NUMBER AND NAME H3015 Aerial Common Sensor			
COST ($ in Millions)		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost				**24.909**	**49.864**	**99.783**	**193.824**	**74.043**
RDT&E Articles Qty							**2**	

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

Provides funding for development of the Navy's Aerial Common Sensor (ACS) involvement in a post-Milestone B joint Army/Navy program. Provides funds for the Navy's unique requirements to the Army's ACS platform. The ACS is the Navy's recapitalization of the the EP-3E and offers a transformational platform to fullfill the Navy and OSD requirements for migration to the Joint Airborne SIGINT Architecture (JASA). Development will be made to integrate additional workstations, ensure connectivity to multi-service platforms and ground stations, procure two ACS test platforms and to develop an initial mission systems spiral that will integrate the Navy's unique maritime SIGINT mission requirements.

* FY 2004 funding was a congressional add in PE 0605152N Studies and Analysis Support for Future SIGINT Requirements/Joint ACS Program. Those funds will be executed in that R-1 line item and used to study the available replacement options and the viability of ACS as a replacement program for the EP-3. Follow on development funding for ACS is budgeted and will be executed in this R-1 line item.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0307207N Aerial Common Sensor	H3015 Aerial Common Sensor

B. Accomplishments/Planned Program

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost				15.000
RDT&E Articles Quantity				

Development and integration for additional operator workstations. Design efforts to incorporate 2 additional workstations for the Army's present architecture of 4 workstations; to include design changes to interfaces, cooling and power requirements, center of gravity, EMI/EMC etc.

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost				5.709
RDT&E Articles Quantity				

Development of a reachback capability and interoperability to multiservice platforms and ground stations

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost				4.200
RDT&E Articles Quantity				

ACS Program management and Engineering supt

R-1 SHOPPING LIST - Item No. 203

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0307207N Aerial Common Sensor	H3015 Aerial Common Sensor

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2003	FY 2004	FY 2005
Previous President's Budget:	0.000	0.000	0.000
Current BES/President's Budget	0.000	0.000	24.909
Total Adjustments	0.000	0.000	24.909
Summary of Adjustments			
Congressional program reductions			
Congressional undistributed reductions			
Congressional rescissions			
SBIR/STTR Transfer			
Economic Assumtions			
Reprogrammings			
Other Adjustments			24.909
Congressional increases			
Subtotal	0.000	0.000	24.909

Schedule:

Not Applicable

Technical:

Not Applicable

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0307207N Aerial Common Sensor	H3015 Aerial Common Sensor

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
0605152N (H9411) Future SIGINT Rqmts/Joint ACS Program		3.955							3.955
APN BLI 019100 Aerial Common Sensor (ACS)						6.006	226.733	1,464.278	1,697.017

E. ACQUISITION STRATEGY:

Leverages off of the Army's ACS development efforts to decrease Navy cost and joint development of technology insertions during the System Development and Demonstration Phase.

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**		PROGRAM ELEMENT 0307207N Aerial Common Sensor			PROJECT NUMBER AND NAME H3015 Aerial Common Sensor							
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	Army Prime TBD						15.000	12/04	300.000	315.000	315.000
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		15.000		300.000	315.000	
Remarks:												
Development Support	C/CPFF	TBD						1.000	12/04	5.000	6.000	6.000
Development Support	WX	NAWC/WD, China Lake, CA						4.709	12/04	19.514	24.223	
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		5.709		24.514	30.223	
Remarks:												

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**		PROGRAM ELEMENT 0307207N Aerial Common Sensor			PROJECT NUMBER AND NAME H3015 Aerial Common Sensor							
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	TBD	TBD								45.000	45.000	
Operational Test & Evaluation	TBD	TBD								33.000	33.000	
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		78.000	78.000	
Remarks:												
Contractor Engineering Support	C/CPFF	TBD						0.400	12/04	2.000	2.400	2.400
Government Engineering Support	WX	NAWC/AD, Pax River, MD						2.500	12/04	8.000	10.500	
Program Management Support	WX	NAWC/AD, Pax River, MD						1.000	12/04	4.000	5.000	
Travel	WX	NAWC/AD, Pax River, MD						0.300	12/04	1.000	1.300	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			0.000	0.000		0.000		4.200		15.000	19.200	
Remarks:												
Total Cost			0.000	0.000		0.000		24.909		417.514	442.423	
Remarks:												

R-1 SHOPPING LIST - Item No. 203

CLASSIFICATION:

EXHIBIT R4, Schedule Profile | DATE: **February 2004**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0307207N Aerial Common Sensor	H3015 Aerial Common Sensor

Fiscal Year	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
Army Acquisition Milestones								MS B																MS C		LUT* LRIP		
Contract Milestone										Contract Award Army				Contract Award Navy option														
Spiral Milestone																	Navy Spiral											
PDR Army											FDR																	
CDR Army												CDR																
Navy Requirements Design Review																												
Test & Evaluation Milestones																				DT 1		DT 2						
Development Test Army																										IOT&E		
IOT&E																												
Navy Production Options																												

R-1 SHOPPING LIST - Item No. 203

* Limited User Test (LUT)

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **February 2004**		
APPROPRIATION/BUDGET ACTIVITY **RDT&BA-7**	PROGRAM ELEMENT 0307207N Aerial Common Sensor				PROJECT NUMBER AND NAME H3015 Aerial Common Sensor			
Schedule Profile		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Army Acquisition Milestone B (MS B)		4Q						
Army Acquisition Milestone C (MS C)						4Q		
LUT LRIP							2Q	
Contract Award Army			2Q					
Contract Award Navy option				1Q				
Navy Spiral Commences					1Q			
Navy Spiral Completes							2Q	
PDR Army			3Q					
CDR Army			4Q					
Navy Requirements Design Review				4Q				
Developmental Testing 1 (DT 1) Army					4Q			
Developmental Testing 2 (DT 2) Army						2Q		
IOT&E Commences							3Q	
IOT&E Completes								1Q
Navy Production options								1Q

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

BA: 07 PROGRAM ELEMENT: 0308601N
PROGRAM ELEMENT TITLE: Modeling and Simulation Support

COST: (Dollars in Thousands)

Project Number & Title	FY 2003 Actual	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate
R2222 Modeling & Simulation	7,417	6,948	7,262	7,564	8,653	8,807	8,972
R2810 ENHANCED M&S INITIATIVES	2,038	6,527	0	0	0	0	0
Totals	9,455	13,475	7,262	7,564	8,653	8,807	8,972

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 to 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.

BA: 07 PROGRAM ELEMENT: 0308601N
PROGRAM ELEMENT TITLE: Modeling and Simulation Support

PROGRAM CHANGE SUMMARY:

	FY 2003	FY 2004	FY 2005
FY 2004-2005 President's Budget Submission	9,612	7,044	8,248
Cong. Rescissions/Adjustments/Undist.Reductions	0	-161	0
Congressional Actions	0	6,600	0
Execution Adjustment	-75	0	0
Inflation Savings	0	0	-27
Rate Adjustments	0	-8	-6
SBIR Assessment	-82	0	0
Technical Adjustments	0	0	-953
FY 2005 President's Budget Submission	9,455	13,475	7,262

PROGRAM CHANGE SUMMARY EXPLANATION:
Technical: Not applicable.

Schedule: Not applicable.

FY 2005 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET DATE: Feb 2004
Exhibit R-2a

BA: 07 PROGRAM ELEMENT: 0308601N PROGRAM ELEMENT TITLE: Modeling and Simulation Support
PROJECT NUMBER: R2222 PROJECT TITLE: Modeling & Simulation

COST: (Dollars in Thousands)

Project Number & Title	FY 2003 Actual	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate
R2222 Modeling & Simulation	7,417	6,948	7,262	7,564	8,653	8,807	8,972

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This project specifically provides critical coordination of Navy Modeling and Simulation (M&S) efforts, integrates individual programs into a coherent whole, promotes reuse of resources, and aligns Navy efforts with Joint programs. 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. Enhances 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 2003	FY 2004	FY 2005
Engineering Studies and Analysis	1,260	1,196	1,075

This activity conducts engineering studies and analyses aimed at determining the feasibility and applicability of proposed standards or technical approaches to Navy Modeling and Simulation, 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). This activity develops methodologies and standards that will result in model and data reusability and interoperability through the formulation of a technical framework. These standards will support the full range of architecture and engineering design and analysis requirements across the Navy. This effort also provides an M&S degree program through the Naval Postgraduate School, Modeling Virtual Environments and Simulation (MOVES) curriculum.

FY 2003 Accomplishments:

- Demonstrated the capability of collecting network data for local and wide area networks at Navy Computer Telecommunications Area Masters Station (NCTAMS) Wahiawa.
- Performed communication burden analysis at a Joint Task Force (JTF).
- Provided capabilities to optimize deployed communication plans.
- Determined impact of new modeling and simulation and visualization technologies on Battle Group operations.
- Developed 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.
- Provided interoperability links between Command, Control Communications, Computers, and Intelligence (C4I) systems and internal simulations as the means to integrate existing Defense Information Infrastructure (DII) Common Operating Environment (COE) services and applications into simulations.

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 Global Command and Control System (GCCS) and GCCS/M.
- Continue to develop a set of standards for communications modeling and simulation for the US Navy.
- The MOVES Institute will continue to work in tandem with the MOVES degree program to provide military relevant thesis topics for research.

	FY 2003	FY 2004	FY 2005
Products and Services	2,522	2,392	2,150

This activity supports development of common services, tools, databases and standards to ensure the integration and connectivity of modeling and simulation (M&S) products employed in Naval assessments, in training and acquisition, and among operational communities. It manages and maintains the Navy Modeling and Simulations Information System (NMSIS), as a central M&S information resource to support informed M&S investment decision making across Navy. It provides essential planning and coordination of M&S efforts with other Services, the Office of Secretary of Defense (OSD), the Joint Staff, and other agencies to develop policies and procedures necessary for M&S standardization within the Navy. It provides annual updates to the Naval M&S Catalog, Master Plan, and Investment Strategy.

FY 2003 Accomplishments:

- Staffed an updated Navy Modeling and Simulation Master Plan.
- Promoted and enhanced the state-of-practice and technology within the Navy M&S community.
- Organized 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.
- Initiated development, via NMSIS, of a centralized 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, and to function 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.
- Assisted development of the Navy's response to new requirements and policy governing High Level Architecture (HLA) compliance.
- Continued 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:

- Implement the requirements to perform as the Functional Data Manager for M&S as submitted by Department of Navy (DoN) Chief Information Officer (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, servicing and use of NMSIS as directed under applicable DoD DIR, SECNAVINST, and OPNAVINST.
- Organize and facilitate a continuing series of quarterly Navy M&S Technical Interchange Meetings to bring together the Navy M&S community for a direct interchange of M&S requirements, technology, standards and

experience.
• 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, servicing and use of NMSIS as directed under applicable DoD DIR, SECNAVINST, and OPNAVINST.
• 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 2003	FY 2004	FY 2005
M&S Quality Assurance Program	742	704	633

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 2003 Accomplishments:

• Developed the VV&A Architecture within the VV&A Handbook.
• Developed the draft Navy Instruction update for VV&A.
• Developed a Department of Navy (DoN) M&S VV&A Annual Assessment Report.
• Developed an initial version of a Navy VV&A Documentation Tool.
• Developed 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.

	FY 2003	FY 2004	FY 2005
Simulation Experiments	2,893	2,656	3,404

This activity supports Fleet exercises and experiments through the application of distributed simulations across a wide variety of warfighting and supporting communities. Specifically, it develops and integrates appropriate models and simulations into the Fleet Battle Experiments (FBE), and develops simulation efforts to test and evolve the standards for models, interfaces, and data. It supports development of tools necessary to enable the seamless access and use of operationally relevant Modeling and Simulation (M&S) products to support Navy training, warfare assessments and acquisition requirements.

FY 2003 Accomplishments:

- Reviewed 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.
- Participated in all aspects of planning and conducting the synthetic portion of Joint training events, as directed by Commander Second Fleet (COMSECONDFLT).
- Researched and defined Fleet training requirements (per TYCOMs), delivery (school houses), and execution (Numbered Fleet and Battle Groups) to increase the efficiency and effectiveness of intermediate phase training

employing the use of M&S.

- Used the fleet battle experimentation process to provide insight to future Navy efforts, organizations and technologies required to carry the Navy into the end of this decade and the next. Efforts represented a synergetic Modeling and Simulation approach that will benefit Battle Fleet Tactical Training (BFTT), Virtual Training Range, FBE-J and Millennium Challenge (MC02).
- Focused on development of standardized M&S capabilities, including the Probability of Raid Annihilation (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).
- Through Maritime Virtual Environmental Data Specification (MARVEDS), continued 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).
- Conducted Virtual Missile Range (VMR) development supporting the capability for operational ships to detect realistic, synthetically generated targets as real threats, and "fire" virtual missiles residing at weapons laboratories. The initial VMR capability has a virtual TRACKEX for the Evolved SeaSparrow Missile (ESSM) system enabling 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 Probability of Raid Annihilation (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.
- Continue development of Virtual at Sea Training Deployable Prototype (VAST DP) to exercise Naval Surface Fire Support (NSFS) missions. Support inclusion of tactical aircraft (TacAir) in the VAST training system to complete the combined arms team training capability.
- Continue development of a Virtual at Sea Training – Aviation Component (VAST-AC) to allow USN/USMC TacAir to participate in mission specific training to include amphibious or urban operations training by providing close air support (CAS) services against synthetic targets within a 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, and would otherwise be cost or schedule prohibitive.
- Document the elements of the maritime virtual environment and effects models that can be used 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:

RELATED RDT&E:

PE 0603235N (Common Picture Advanced Technology)

NON-NAVY RELATED RDT&E:

Not applicable

D. ACQUISITION STRATEGY:

Not applicable

CONGRESSIONAL PLUS-UPS:

R2810	FY 2003	FY 2004
ENHANCED M&S INITIATIVES	2,038	0

FY 03: This effort supported the development and enhancement of technologies that support fleet training, distributed simulation and production engineering. Provided the Naval Tool Interoperability and Risk Assessment (NTIRA) tool-kit, to enhance Maritime Battle Center Joint Semi-Automated Forces (MBDJSAF). Demonstrated 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). Enhanced production engineering simulation capabilities with the Virtual Shipboard and Lab Facilitator (VSLF).

R2810	FY 2003	FY 2004
NAVAL MODELING AND SIMULATION	0	6,527

FY 04: This program provides for development and enhancement of technologies that support fleet training, distributed simulation, and production engineering. The progam will support Modeling & Simulation initiatives in architecture assessment, command and control assessment, model development to support network/communications analysis, and production engineering and training, to include the development of composability standards for simulations architectures.

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: **February 2004**	
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7**					R-1 ITEM NOMENCLATURE 0702207N Depot Maintenance (Non-IF)			
COST ($ in Millions)		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost		**12.839**	**8.972**					
E3030 F-18 SLAP		**3.575**						
H2451 P-3 SLAP		**9.264**	**8.972**					
W2454 AN/ARC-210-RT-1794(C)								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

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 includes 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.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2004**	
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 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost		**9.264**	**8.972**					
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) performed a full scale fatigue test on a P-3 test article in order to more accurately determine the aircraft fatigue life. Subsequent test article teardown is comparing post-test results with the original P-3 FLE predictions. SLAP will identify specific components that require inspection, repair, or replacement during Specific Structural Inspections (SSI), Enhanced Special Structural Inspections (ESSI), and Special Structural Insections - Kits (SSI-K) in order to ensure safe operations. This SLAP effort was previously budgeted under APN-5 (BLI 053800) funding within OSIP 02-99.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
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) B. Accomplishments/Planned Program

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		9.264	8.972	
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, Test article engineering analysis, Fatigue Life Expended Rebaselining, Structural Data Recording Set (SDRS) Tracking Algorithm, SSI-K definition/prototyping, and P-3 Inventory Fatigue Life management.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
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 2003	FY 2004	FY 2005
Previous President's Budget:	5.006	9.073	0.000
Current BES/President's Budget	9.264	8.972	0.000
Total Adjustments	4.258	-0.101	0.000
Summary of Adjustments			
Congressional program reductions			
Congressional undistributed reductions		-0.101	
Congressional rescissions			
SBIR/STTR Transfer	-0.117		
Economic Assumptions			
Reprogrammings	4.375		
Other Navy/OSD Adjustments			
Congressional increases			
Subtotal	4.258	-0.101	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. Completion of fatigue life expended rebaseline moved from 1Q/04 to 4Q/04 due to extensive failures to test article during fatigue test article teardown.

(U) Technical:

Not Applicable

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: **February 2004**
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:

Line Item No. & Name	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
Line Item #34 P-3/EP-3 SSI-K (OSIP 05-05)			18.065	33.392	37.852	37.495	32.652	165.937	325.393

(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.

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2004**				
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	6.080	01/03	4.960	01/04				81.140	81.140
Systems Engineering	WX	NRL		0.050	03/03						0.050	
Systems Engineering	C/CPIF	NLR		0.800	07/03						0.800	0.800
Govt Engineering Support	WX	NADEP Jax		0.870	12/02	0.799	12/03				1.669	
Govt Engineering Support	WX	NAWCAD		0.600	01/03	1.700	12/03				2.300	
Subtotal Product Development			70.100	8.400		7.459		0.000		0.000	85.959	
Remarks:												
Subtotal Support			0.000	0.000		0.000		0.000			0.000	
Remarks:												

R-1 SHOPPING LIST - Item No. 205

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2004**				
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	0.737	12/02	0.713	12/03				3.597	3.597
Government Engineering Support	WX	NAWCAD	4.538	0.127	12/02	0.800	12/03				5.465	
Subtotal Management			6.685	0.864		1.513		0.000		0.000	9.062	
Remarks:												
Total Cost			76.785	9.264		8.972		0.000		0.000	95.021	
Remarks:												

R-1 SHOPPING LIST - Item No. 205

CLASSIFICATION:

EXHIBIT R4, Schedule Profile			DATE: **February 2004**
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	

Fiscal Year					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
Test & Evaluation Milestones																																
Full Scale Fatigue Test																																
Landing Gear Test																																
Fatigue Life Expended (FLE) Rebaseline																																
SDRS Tracking Algorithm																																
Test Article Teardown																																
Post Test Analysis																																

R-1 SHOPPING LIST - Item No. 205

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

CLASSIFICATION:

Exhibit R-4a, Schedule Detail					DATE: **February 2004**			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT 0702207N Depot Maintenance (Non-IF)				PROJECT NUMBER AND NAME H2451 P-3 SLAP			
Schedule Profile		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Full Scale Fatigue Test completion		1Q						
Initiate Test Article Teardown		2Q						
Fatigue Life Expended (FLE) Rebaseline		3Q						
Commence Post Test Analysis		3Q						
Complete SDRS Tracking Algorithm			1Q					
Complete Fatigue Life Expended Rebaseline			4Q					
Complete Test Article Teardown			3Q					
Complete Post Test Analysis			4Q					

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

BA: 07 PROGRAM ELEMENT: 0708011N
PROGRAM ELEMENT TITLE: Industrial Preparedness

COST: (Dollars in Thousands)

Project Number & Title	FY 2003 Actual	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate
Total PE	71,704	64,270	56,565	57,790	57,984	59,277	60,629
1050 MANUFACTURING TECH	67,401	53,985	56,565	57,790	57,984	59,277	60,629
2674 MANUFACTURING TECHNOLOGY	4,303	10,285	0	0	0	0	0

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Manufacturing Technology (ManTech) Program is intended to improve the productivity and responsiveness of the U.S. defense industrial base by funding the development of manufacturing technologies. The ManTech program, 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.

PROGRAM CHANGE SUMMARY:

	FY 2003	FY 2004	FY 2005
FY 2004-2005 President's Budget Submission	73,320	54,593	56,810
Cong. Rescissions/Adjustments/Undist.Reductions	0	-723	0
Congressional Actions	0	10,400	0
Misc. Adjustments	149	0	-245
SBIR Assessment	-1,765	0	0
FY 2005 President's Budget Submission	71,704	64,270	56,565

PROGRAM CHANGE SUMMARY EXPLANATION:
Technical: Not applicable.

BA: 07 PROGRAM ELEMENT: 0708011N
PROGRAM ELEMENT TITLE: Industrial Preparedness

Schedule: Not applicable.

FY 2005 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET DATE: Feb 2004
Exhibit R-2a

BA: 07 PROGRAM ELEMENT: 0708011N PROGRAM ELEMENT TITLE: Industrial Preparedness
PROJECT NUMBER: 1050 PROJECT TITLE: MANUFACTURING TECH

COST: (Dollars in Thousands)

Project Number & Title	FY 2003 Actual	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate
1050 MANUFACTURING TECH	67,401	53,985	56,565	57,790	57,984	59,277	60,629

A. 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. 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 2003	FY 2004	FY 2005
Metals Processing and Fabrication	19,000	19,000	19,000

The objective of the Metals Processing and Fabrication activity is to develop affordable, robust manufacturing processes and capabilities for metals and special materials critical to Defense weapon system applications. Major areas that support this objective include: processing methods, special materials, joining, and inspection and compliance. These efforts directly impact the cost and performance of future aircraft, rotorcraft, land combat vehicles, surface and subsurface naval platforms, space systems, artillery and ammunition, and defense industry manufacturing equipment.

FY 2003 Accomplishments:

- High Strength Marine Grade Fasteners Extended Development: Resulted in cost avoidance of $1.1 million per Sea Wolf and Virginia Class sub.
- Advanced Thermal Battery Production: Reduced battery manufacturing costs resulting in cost avoidance of $29 million for the Air Deployable Low Frequency Projector (ADLFP) and AN/SSQ-62E sonobuoy programs.
- Distortion and Accuracy Control: Improved dimensional accuracy of thermal cut plates to reduce ship fabrication and assembly costs by 30% for the DD(X) program.
- Single-Melt Process for Reduced-Cost Aluminum Alloys for LW-155 Howitzer: Developed new process which will become industry standard for producing low cost titanium ingots to be used on the M777 Howitzer, ingot cost reduced by 27%.
- Propulsor Affordability Initiative: Improved manufacturing technologies to reduce cycle time by 6 - 12 months and cost by over $3M for the Virginia class sub.
- Automated Paint Application Containment and Treatment System Process Development: New paint application and containment system results in cost avoidance estimated to be $2 million per year by reducing paint acquisition costs, reducing dry dock time and complying with environmental guidelines.
- Titanium Welding: Improved erosion and corrosion resistance of titanium pipes on LPD 17, extending their life resulting in large cost savings due to reduced maintenance and support costs.
- Weld Fume Manufacturing: Reduced hazardous weld fumes for Navy personnel fabricating the DDG, CVN, SSN sub, LPD-17, and F-14, F/A-18.
- Enhanced Processing for High Strength Steel Castings and Forgings for Naval Components (CVN): Reduced weight and improved performance of castings and forgings used on subs and ships.
- Concept Exploration for CVN 21 Metalworking Technology: Identified issues related to metalworking.
- Modeling and Simulation for Carrier Construction Planning and Sequencing: Developed pilot assembly process model and simulation.
- Laser Welded Lightweight Structure Panel Fabrication for CVN 21: Fabricated laser welded NAVTRUSS panels for analysis.

FY 2004 Plans:

- Propulsor Affordability Initiative: Continue Single-Melt Process for Reduced-Cost Aluminum Alloys for LW-155 Howitzer. Continue High Strength Marine Grade Fasteners Extended Development. Continue Advanced Thermal Battery Production. Continue Distortion and Accuracy Control program. Continue Automated Paint Application Containment and Treatment System Process Development.
- Laser Welded Lightweight Structure Panel Fabrication for CVN 21: Deliver Navy approved process for fabrication.

- Availability of SubMergable Arc Weld (SMAW) Electrode (Mil-10718-M) Required for Ballistic Performance Requirements: Manufacture and test initial electrodes.
- Modeling and Simulation for Carrier Construction Planning and Sequencing: Demonstrate the simulated construction of major ship modules for CVN 21.
- Issues Associated with the Fabrication of Titanium Components: Select 5 candidate applications for evaluation.
- Manufacturing Process Development for Elimination of Weld Distortion of CVN 21 Heavy Plate Erection Units: Develop a weld-sequence plan to minimize weld distortion for prototype assemblies.
- Development of Cost Effective, Low-Manganese Flux Core Welding Electrode for Joining High Strength Steels: Manufacture test lots of modified flux covered welding wire.
- High Strength and Toughness Naval Steels for Ballistic Protection: Determine optimal welding parameters.

FY 2005 Plans:

- Propulsor Affordability Initiative: Continue Single-Melt Process for Reduced-Cost Aluminum Alloys for LW-155 Howitzer. Continue High Strength Marine Grade Fasteners Extended Development. Continue Advanced Thermal Battery Production. Continue Distortion and Accuracy Control program.
- Laser Welded Lightweight Structure Panel Fabrication for CVN 21: Weld and process validation.
- Availability of SMAW Electrode (Mil-10718-M) Required for Ballistic Performance Requirements: Develop recommendations on improving electrode manufacturing process.
- Modeling and Simulation for Carrier Construction Planning and Sequencing: Demonstrate the simulated construction of major ship modules for CVN 21.
- Issues Associated with the Fabrication of Titanium Components: Develop process for manufacture and joining of titanium structures to bimetallic transition joints.
- Manufacturing Process Development for Elimination of Weld Distortion of CVN 21 Heavy Plate Erection Units: Complete the construction of a prototype.
- Development of Cost Effective, Low-Manganese Flux Core Welding Electrode for Joining High Strength Steels: Verification of new wire.
- High Strength and Toughness Naval Steels for Ballistic Protection: Determine optimal welding parameters.

	FY 2003	FY 2004	FY 2005
Other (Repair Tech, Program Initiatives)	26,901	13,485	16,065

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.

FY 2003 Accomplishments:

• Initiated second year of the Navy International Cooperative Program for Shipbuilding Process Simulation and Advanced Composites Research. Initiated Phase 2 Wide Band Gap Materials Technology project based on the industry data from Phase 1. Continued Composites Affordability Initiative Phase II – Integrated and Bonded Structures Validation. Completed Pathways for Continuous Improvement program for the Standoff Land Attack Missile - Expanded Response (SLAM-ER) program. Continued Supply Chain Integration for Newport News Shipbuilding. Assessed transition path for MicroElectroMechanical Systems for Inertial Measurement Units (MEMS IMU) for go-no-go decision. Provided technical engineering support for the Manufacturing Technology (ManTech) program.

• Initiated Virtual Training in Welding in support of Program Executive Officer (PEO) Subs. Initiated Phase 2 of the Collarless Construction for DD(X). Completed Computer Numerically Controlled (CNC) Thermal Plate Forming in support of DD(X). Completed Amphibious Assault Vehicle (AAV) Enhanced Applique Armor Kit Product Improvement. Completed evaluation and repair of Lightweight Armored Vehicle (LAV) Armor. Completed heavy equipment repair. Completed Steering Block Repair. Completed Low Cost, Reliable Packaging and Integration of Miniaturized Explosive Components, and, Low Cost, Improved Quality CL-20 Material, Co Layered Propellant Manufacturing. Initiated Phase 2 for Dimensional and Accuracy Control. Initiated Phase 2 Large Marine Composite-to-Steel Adhesive Joints.

FY 2004 Plans:

• Continue to develop Manufacturing Process Improvements supporting DD(X), CVN-21, and LPD-17.

• Conduct a Pathways for Continuous Improvement program aboard the USS George Washington and USS Harry S. Truman. Develop comprehensive study in Supply Chain Integration for selected acquisition program. Close-out MEMS IMU, and publish industry-government guidelines. Provide technical engineering support for the ManTech program.

FY 2005 Plans:

• Continue to pursue Manufacturing Process Improvements supporting DD(X), CVN-21, and LPD-17. Establish manufacturing development teams and initiate projects in support of the Littoral Combat Ship. Provide technical engineering support for the ManTech program.

	FY 2003	FY 2004	FY 2005
Electronics Processing and Fabrication	10,000	10,000	10,000

Electronics Processing and Fabrication efforts develop and deploy affordable, robust manufacturing processes and capabilities for electronics critical to Defense applications over their full life cycle. Efforts create new and improved manufacturing processes on the shop floor, as well as to repair and maintenance facilities such as depots and logistics centers, with a strong emphasis on process maturation.

FY 2003 Accomplishments:

• LINK-16 Low Cost Terminal: SPAWAR Program Officer established as stakeholder. Developed insertion path into Multifunctional Information Distribution System Land Vehicle Track 1 (MIDS LVT1) effective in FY05.
• Monolithic Miniature Integrated Circuit (MMIC) Flip Chip Attach Production Processing: Transitioned from prototype to high speed commercial manufacturing line.
• Teaching Factory Outreach, Rapid Response: Received ISO9001-2000 certification, demonstration factory supported the transition of MicroElectroMechanical Systems Inertial Measurement Unit (MEMS IMU), Radio Frequency (RF) devices for data links and solid state power switching Thyristors for DD(X).
• Infrared Focal Plane Array Manufacturing: Manufacturing process improved, cost metrics indicate costs goals will be met.
• Affordable Diode Array Manufacturing: Updated quality and testing procedures, fabricated submodule test station, and performed accelerated life-cycle testing of 10 “before” tiles.
• Fiber Optic Electrical Splice: Several improvements to the fabrication process to improve strength, and reduce manufacturing time per sensor.

FY 2004 Plans:

• LINK-16 Low Cost Terminal: Test vehicles to be identified, evaluated, verified, and conclusions drawn with follow-on.
• MMIC Flip Chip Attach Production Processing: Reliability testing for bump process. Complete 2nd source transition. Deliver MMIC flip chip devices to F/A-18.

• Teaching Factory Outreach, Rapid Response: Direct weapon support of AEGIS Radar, MIDS LVT-1, Joint Tactical Radio System (JTRS), F/A-18, and the Army's Future Combat System. Support transition of manufacturing technology of PRC-112 radio, the BB5590 battery for the USMC Single Channel Ground and Airborne Radio System (SINCGARS) radio, and the US Navy SEAL Delivery Vehicle.
• Infrared Focal Plane Array Manufacturing: Demonstration runs and final report to be completed.
• New efforts in Wide Band Gap Materials that support ship platforms.

FY 2005 Plans:
• LINK-16 Low Cost Terminal: Delivery of 3 new Power Amplifiers.
• Complete MMIC Flip Chip Attach Production Processing.
• Teaching Factory Outreach. Continue Rapid Response. Continue support of Multi-Function-Fuze (MFF), Extended Range Guided Munition (ERGM), and Small Diameter Bomb (SDB).
• Manufacturing process improvement work for the new EA-18G.

	FY 2003	FY 2004	FY 2005
Composites Processing and Fabrication	6,000	6,000	6,000

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 2003 Accomplishments:
• Composite Pressure Vessel Fabrication: Developed high burst strength vessels competitive with conventional metal containers used in tactical missiles, cost avoidance of $37.5 million.
• Automation of Z-Fiber for Complex Shape: Reduced touch labor which results in cost avoidance of $8,600 per F/A-18E/F and improves quality of Z-Pin Fiber insertion.
• Teaching Factory Outreach: Developed "Introduction to Composites and Composite Repair" courseware.
• Manufacturing Technology for Silicon Carbide Flaps and Seals: Optimized manufacturing process to result in cost avoidance of over $5 million for 520 F414 engines.
• Propulsion Shaft Composite Surface Treatment: Developed a coating system that increases service life of ship propulsion shafts from seven to 15 years and results in estimated cost avoidance of $24 million every five year period.

FY 2004 Plans:

- Composite Pressure Vessel Fabrication: Target implementation into Rolling Airframe Missile Pre-Planned Product Improvement program.
- Automation of Z-Fiber for Complex Shape: Target implementation into F/A-18E/F.
- Rapid Response initiatives supporting critical fleet manufacturing problems: Improve Manufacturing Technology for Silicon Carbide Flaps and Seals. Develop Propulsion Shaft Composite Surface Treatment.
- Expeditionary Fighting Vehicle (EFV) Troop Ramp: Develop SURMAX armor system to reduce weight by 25% and reduce the cost of door assemblies on 1000 Expeditionary Fighting Vehicles (formerly Advanced Amphibious Assault Vehicle (AAAV)).
- Systems Design & Manufacturing Demonstrations: Develop composites processing for carrier-compatible Joint - Unmanned Combat Aerial System (J-UCAS).

FY 2005 Plans:

- Manufacturing Technology for Silicon Carbide Flaps and Seals: Develop propulsion shaft composite surface treatment.
- Systems Design & Manufacturing Demonstrations: Develop composites processing for carrier compatible J-UCAS.
- Develop new manufacturing processes supporting F/A-18 and the new EA-18G.
- Continue Rapid Response initiatives supporting critical fleet manufacturing problems.

	FY 2003	FY 2004	FY 2005
Advanced Manufacturing Enterprise	5,500	5,500	5,500

American Manufacturing Enterprise (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 2003 Accomplishments:

- Continued the following efforts: 5 Best Manufacturing Practices Surveys, Port Security Homeland Security efforts, Shipbuilding and Simulation Based Design, Occupational Safety and Health Administration (OSHA)

Compliance Management System, Development of High Strength Corrosion Resistant Aluminum Alloys for Maritime Applications, and continuous improvements in Drydock Management.

- Continued the Maritime Environmental Information Center. Continued Ship Propeller Thrust and Torque Measurement. Continued Fiber-Bragg Optical Damage Control System. Continued Quality Assurance of Reliability Data in the 3-M Database of the U.S. Navy. Completed the Ships Works Robotic Laboratory. Continued Light Distance and Ranging Technology for Shipyards. Initiated Modeling of Residual Stress in Steel Plates.
- Initiated manufacturing technology process change portfolios for DD(X), CVX, and LPD-17.

FY 2004 Plans:

- Conduct 6 Best Manufacturing Practices Surveys. Complete Shipbuilding and Simulation Based Design.
- Complete the following efforts: OSHA Compliance Management System, Development of High Strength Corrosion Resistant Aluminum Alloys for Maritime Applications, and continuous improvements in Drydock Management.

FY 2005 Plans:

- Conduct 8 Best Manufacturing Practices Surveys. Complete Shipbuilding and Simulation Based Design.
- Continue manufacturing technology process changes for the DD(X), CVN, and LPD-17.

C. OTHER PROGRAM FUNDING SUMMARY:

RELATED RDT&E:
Major Acquisition programs, such as: DD(X), LPD-17, V-22, EFV, F/A-18, and CVN.

NON-NAVY RELATED RDT&E:
PE 0708011F Industrial Preparedness
PE 0708045A End Item Industrial Preparedness Activities
PE 0708011S Manufacturing Technology

D. ACQUISITION STRATEGY:

Not applicable.

FY 2005 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET DATE: Feb 2004
Exhibit R-2a
BA: 07 PROGRAM ELEMENT: 0708011N PROGRAM ELEMENT TITLE: Industrial Preparedness
PROJECT NUMBER: Various PROJECT TITLE: Congressional Plus-Ups

CONGRESSIONAL PLUS-UPS:

2674	FY 2003	FY 2004
MANUFACTURING TECHNOLOGY	4,303	10,285

FY 2003: Funding was used to initiate three Transformational Technology Initiatives: Technology refresh in support of the Joint Strike Fighter program, Special Delivery Vehicle (SDV) Storage Battery in support of the Navy Seals, and Tin Whisker Mitigation. Also funded were two technology solution manufacturing efforts: Salinity Cell in support of CVN-21, and Long-Life Non-Skid Surfaces on Carriers. These projects were kicked-off, transition insertion paths identified, and program plans developed. Technical engineering work is being conducted in accordance with the prescribed SOWs.

FY 2004: Funding will be used to support continuing efforts under the Manufacturing Technology (ManTech) Integrated Investment Strategy focusing on CVN-21 weight reduction initiatives, J-UCAS production vehicle, and composite-to-steel processes for DD(X). Initiate a study with the FNC community to look at enabling capabilities that are similar to the ManTech platforms, and select a candidate technology for ManTech affordability/transition work. Initiate a program to improve energy density to increase battery lifetime in operational (especially dismounted) units.

EXHIBIT R-2, RDT&E Budget Item Justification						DATE: February 2004	
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 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost	**11.673**	**12.724**	**10.265**	**0.000**	**0.000**	**0.000**	**0.000**
Automatic Identification Technology/T9441	**0.000**	**2.769**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
NSRP/ASE/S2466/S2811	**9.330**	**9.955**	**10.265**	**0.000**	**0.000**	**0.000**	**0.000**
Maritime Tech, Ship Design & Sys Develop Init/R9121	**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 2466/2811 (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 9121 (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.

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification						DATE: February 2004	
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAV Engineering & Manufacturing**				R-1 ITEM NOMENCLATURE 0708730N Maritime Technology/T9441			
COST ($ in Millions)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE0708730N Cost	**0.000**	**2.769**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
Automatic Identification Technology	**0.000**	**2.769**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
Quantity of RDT&E Articles **Not Applicable**							

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:
The Navy Automatic Identification Technology (AIT) Engineering Support Center (ESC) will support the Navy AIT Project Office (NAVSUP) customers comprised of 35 Navy-wide Echelon II and subordinate commands with AIT integration into supply chain business processes and automated information systems to enhance Fleet readiness and improve logistics

(U)B. JUSTIFICATION OF BUDGET ACTIVITY: This is a new Congressional Add.

R-1 SHOPPING LIST - Item No. 207

EXHIBIT R-2a, RDT&E Project Justification						DATE: **February 2004**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N/BA-7**				PROJECT NUMBER AND NAME 2466/2811/NSRP ASE			
COST ($ in Millions)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	**9.330**	**9.955**	**10.265**	**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**

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

Project 2466/2811 (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.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N/BA-7	0708730N/NSRP ASE	2466/2811/NSRP ASE

B. Accomplishments/Planned Program

	FY 03	FY04	FY05	FY06
Accomplishments/Effort/Subtotal Cost			9.055	
RDT&E Articles Quantity				

Initiate technology development projects in the six major initiate areas selected from Research Announcement 4. 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.

	FY03	FY04	FY05	
Accomplishments/Effort/Subtotal Cost	8.385			
RDT&E Articles Quantity	N/A	N/A		

Complete remaining technology development projects in the six major initiative areas selection from Research Announcement Two and Two Prime: Projects to be completed include SPARS, Lean Manufacturing LASOX. All projects are being performed jointely by the Executive control board of the National Shipbuilding Research Program to support current and future Navy shipbuilding programs.

	FY03	FY04	FY05	
Accomplishments/Effort/Subtotal Cost	0.400	0.400	0.500	
RDT&E Articles Quantity	N/A	N/A	N/A	

Continue utilization of industry-led major initiative teams and NSRP panels to perform the execution and annual review of the Strategic Investment Plan, including technology projects, technology transfer among the Navy, shipbuilding industry, academia, equipment and material suppliers and the R&D community.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N/BA-7	0708730N/NSRP ASE	2466/2811/NSRP ASE

B. Accomplishments/Planned Program

	FY03	FY04	FY05	
Accomplishments/Effort/Subtotal Cost		9.015		
RDT&E Articles Quantity		N/A		

Initiate technology development projects in the six major initiative areas selected from Research Announcement 3. Proposed projects include: Auto Generation, World Class Material Stds, SPARS, SPARS-2, ISE-2, ISE-3, Lean Manufacturing, Extended Lean Manufacturing, Lasox, WEMACS, Common Parts Catalog, Lean Simulation Training Exercises, Second Tier Design Enhancements. 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 03	FY 04	FY 05	
Accomplishments/Effort/Subtotal Cost	0.250	0.250	0.250	
RDT&E Articles Quantity	N/A	N/A		

Continue transition of projects to shipbuilding programs.

	FY 03	FY 04	FY 05	
Accomplishments/Effort/Subtotal Cost	0.295	0.290	0.460	
RDT&E Articles Quantity	N/A			

Operate multi-agency support office to facilitate technology transfer between Government and industry.

R-1 SHOPPING LIST - Item No. 207

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N/BA-7	0708730N/NSRP ASE	2466/2811/NSRP ASE

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2003	FY 2004	FY 2005
Previous President's Budget: (FY 04 Pres Controls)	9.703	10.068	0.000
Current BES/President's Budget (FY 05 President's Controls)	9.330	9.955	10.265
Total Adjustments	-0.373	-0.113	10.265
Summary of Adjustments			
Reprogrammings	-0.373		
Programmatic Adjustements			10.265
Economic Adjustments		-0.113	
Subtotal	-0.373	-0.113	10.265

Schedule:

Not Applicable.

Technical:

Not Applicable.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N/BA-7**	PROGRAM ELEMENT NUMBER AND NAME 0708730N/NSRP ASE	PROJECT NUMBER AND NAME 2466/2811/NSRP ASE	

D. 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 Complete	Total Cost
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)

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N/BA-7**			PROGRAM ELEMENT 0708730N/NSRP ASE			PROJECT NUMBER AND NAME 2466/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	8.996	VARIOUS	9.665	VARIOUS	9.805			92.279	
	RX	ONR		0.110							0.110	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Technology Development			63.813	9.106		9.665		9.805		0.000	92.389	

Remarks:
* Other Transactions IAW 10 USC 2371
** Executive Control Board of the National Shipbuilding Research Program

Gov't Support Serv/Other Agencies	IPR/WR	MARAD	2.533	0.030		0.030		0.030			2.623	
Support Services Revolving Accts	MIPR/WR	VARIOUS	0.846	0.169		0.230		0.400			1.645	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Support			3.379	0.199		0.260		0.430		0.000	4.268	

Remarks:

R-1 SHOPPING LIST - Item No. 207

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N/BA-7**		PROGRAM ELEMENT 0708730N/NSRP ASE			PROJECT NUMBER AND NAME 2466/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					0.400	
Travel			0.099	0.025		0.030		0.030			0.184	
SBIR Assessment			0.593	0.000		0.000					0.593	
Subtotal Management			2.357	0.025		0.030		0.030		0.000	2.442	
Remarks: * Procure under GSA Schedule												
Total Cost			69.549	9.330		9.955		10.265		0.000	99.099	
Remarks:												

R-1 SHOPPING LIST - Item No. 207

EXHIBIT R-2a, RDT&E Project Justification						DATE: February 2004	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N/BA-7**				PROJECT NUMBER AND NAME 9121/Maritime Tech, Ship Design & Systems Development Initiative			
COST ($ in Millions)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	**2.283**	**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**

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.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N/BA-7	0708730N/NSRP ASE	9121/Maritime Tech, Ship Design & Systems Development Initiative

B. Accomplishments/Planned Program

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

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 Gurmman Ship Systems Avondale Operations to support Navy ship programs such as LPD-17.

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

Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 638.

		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		2.253	1.780	
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. 207

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N/BA-7	0708730N/NSRP ASE	9121/Maritime Tech, Ship Design & Systems Development Initiative

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2003	FY 2004	FY 2005
Previous President's Budget: (FY 04 Pres Controls)	2.343	0.000	
Current BES/President's Budget (FY 05 President's Controls)	2.283	1.780	
Total Adjustments	-0.060	1.780	
Summary of Adjustments			
SBIR/STTR Transfer	-0.060		
Congressional Action		1.780	
Subtotal	-0.060	1.780	

Schedule:

Not Applicable.

Technical:

Not Applicable.

R-1 SHOPPING LIST - Item No. 207

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N/BA-7	0708730N/NSRP ASE	9121/Maritime Tech, Ship Design & Systems Development Initiative

D. 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 Complete	Total Cost
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. 207

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N/BA-7**		PROGRAM ELEMENT 0708730N/NSRP ASE				PROJECT NUMBER AND NAME 9121/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	
											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. 207

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N/BA-7**		PROGRAM ELEMENT 0708730N/NSRP ASE				PROJECT NUMBER AND NAME 9121/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. 207