

UNCLASSIFIED

EXHIBIT R-2, RDT&E Budget Item Justification						DATE:		
APPROPRIATION/BUDGET ACTIVITY						February 2007		
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7						R-1 ITEM NOMENCLATURE		
						0101402N, NAVY STRATEGIC COMMUNICATIONS		
COST (\$ in Millions)	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Total PE Cost	38.093	37.317	36.531	31.725	39.807	15.453	9.047	
0793 E-6 SERVICE LIFE ASSESSMENT PROGRAM	3.556							
3002 NAVY STRATEGIC COMMUNICATIONS BLOCK I	30.600	37.317	36.531	31.725	39.807	15.453	9.047	
9999 CONGRESSIONAL ADD	3.937							

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

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

(3002) The E-6B Block I program corrects Airborne National Command Post program FOT&E operational suitability deficiencies and addresses legacy system obsolescence issues. Without the Block I program, legacy system obsolescence will result in several unsupportable mission systems by 2010. Block I consists of the design, development, integration, and testing of the replacements for the existing Digital Airborne Intercommunications Switching System (DAISS) / Intercommunications System (ICS), Mission Computer System (MCS), and Ultra-High Frequency Command, Control and Communications (UHFC3) system. The Block I project also incorporates a Multi-level Security (MLS) Open Systems Architecture (OSA), and adds improved operator workstations throughout the aircraft to reduce workload and improve system interoperability, and provide a foundation for future evolutionary upgrades. Other modifications include: An additional Auxiliary Power Unit (APU) to enhance power and cooling capabilities supporting the additional systems in the MLS OSA, address impacts of Internet Protocol Bandwidth Expansion (IPBE) changes to the Block I baseline aircraft, a Very Low Frequency Transmitter (VLF-TX) obsolescence replacement, and High Power Transmit Set (HPTS) subsystem refurbishment.

(9999) CONGRESSIONAL ADD: The E-6B Aircraft Block I Mod program: APU/Environmental Control System (ECS) upgrade. This funding added to the Block I Program performs non-recurring engineering to modify the ECS to accommodate obsolescence, to include Secure Telephone Equipment (STE) and Time Frequency Distribution (TFD)-8000 updates, in the Block I Mod design prior to developmental testing.

B. PROGRAM CHANGE SUMMARY

Funding:	FY 2006	FY 2007	FY 2008	FY 2009
Previous President's Budget:	35.067	37.464	38.833	33.467
Current President's Budget:	38.093	37.317	36.531	31.725
Total Adjustments	3.026	-0.147	-2.302	-1.742
Summary of Adjustments				
Congressional Reductions	-0.025			
Congressional Rescissions				
Congressional Undistributed Reductions	-0.840			
Congressional Increases	0.000			
Economic Assumptions	0.000	-0.147	0.161	0.330
Miscellaneous Adjustments	3.891		-2.463	-2.072
Subtotal	3.026	-0.147	-2.302	-1.742

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EXHIBIT R-2, RDT&E Budget Item Justification		DATE: February 2007
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7	R-1 ITEM NOMENCLATURE 0101402N, NAVY STRATEGIC COMMUNICATIONS	

Schedule:

(0793) Delays in Phase 1 contract award resulted in Phase 2 delays due to contract renegotiations. Phase 2 must be completed before Milestone C can be reached, so MSC has been moved from 4Q FY07 to 1Q FY08.

(3002) Changes in the schedule are a result of additional funding to support the APU/ECS upgrade and IPBE impacts to the pre-Block I baseline aircraft. Design Readiness Review was moved from 1Q to 2Q FY07 to align with System Integration Lab (SIL) Test Readiness Review at which point the design will be ready for testing. SIL integration has been extended to 2Q FY07 due to commercial component availability.

Technical:

(3002) Due to the additional funding the following efforts have been added to the program: Environmental Control System (ECS), Auxiliary Power Unit (APU), High Power Transmit Set (HPPTS), Very Low Frequency Transmitter (VLF-TX), and the Internet Protocol Bandwidth Expansion (IPBE) upgrade effort.

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2007		
APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0101402N, NAVY STRATEGIC COMMUNICATIONS			PROJECT NUMBER AND NAME 0793, E-6 SERVICE LIFE ASSESSMENT PROGRAM				
COST (\$ in Millions)		FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
0793 E-6 SERVICE LIFE ASSESSMENT PROGRAM		3.556							
RDT&E Articles Qty									

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

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

B. ACCOMPLISHMENTS / PLANNED PROGRAM:

Completed Contract Phase 1A	FY 2006	FY 2007	FY 2008	FY 2009
Accomplishments / Effort / Sub-total Cost	3.556			
RDT&E Articles Qty				

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

C. OTHER PROGRAM FUNDING SUMMARY:

	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Complete	Total Cost
056400 E-6 A/B Series	11.068	58.647	126.185	106.224	112.748	126.862	125.201	116.273	451.067	1,234.275

D. ACQUISITION STRATEGY:

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

EXHIBIT R-2a, RDT&E Project Justification

DATE:
February 2007

APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0101402N, NAVY STRATEGIC COMMUNICATIONS			PROJECT NUMBER AND NAME 3002, NAVY STRATEGIC COMMUNICATIONS BLOCK I				
COST (\$ in Millions)	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
3002 NAVY STRATEGIC COMMUNICATIONS BLOCK I	30.600	37.317	36.531	31.725	39.807	15.453	9.047	
RDT&E Articles Qty	1	1						

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

(3002) The E-6B Block I program corrects Airborne National Command Post program FOT&E operational suitability deficiencies and addresses legacy system obsolescence issues. Without the Block I program, legacy system obsolescence will result in several unsupported 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 (UHFC3) system. The Block I project also incorporates a Multi-level Security (MLS) Open Systems Architecture (OSA), and adds improved operator workstations throughout the aircraft to reduce workload and improve system interoperability, and provide a foundation for future evolutionary upgrades. Other modifications include: An additional Auxiliary Power Unit (APU) to enhance power and cooling capabilities supporting the additional systems in the MLS OSA, address impacts of Internet Protocol Bandwidth Expansion (IPBE) changes to the Block I baseline aircraft, a Very Low Frequency Transmitter (VLF-TX) obsolescence replacement, and High Power Transmit Set (HPTS) subsystem refurbishment. Block I Systems Integration Lab (SIL) RDT&E articles will be procured and installed to support Contractor Testing (CT), Developmental Testing (DT), and Operational Testing (OT). The SIL comprises a fully functional set of E-6B mission avionics in a lab environment. The purpose of the SIL is to reduce risk and verify the design prior to pre-production aircraft modification. During CT, DT, and OT, the SIL will be used where feasible to reduce total flight test hours and costs. Pre-production aircraft RDT&E articles will be procured to support CT, DT, and OT testing.

B. ACCOMPLISHMENTS / PLANNED PROGRAM:

Conducted Aircraft Critical Design Review (CDFY 2006	FY 2007	FY 2008	FY 2009	
Accomplishments / Effort / Sub-total Cost	3.443	8.323	9.879	3.342
RDT&E Articles Qty				

Funding supports acquisition planning, acquisition strategy adjustment, requirements analysis and refinement, industry conferences, DoD 5000 series document development and revision, program management, technical review and oversight, Systems Integration Lab modification and test, contract management activities, preliminary and critical design reviews, CDRL reviews, technical interchange and program management meetings; developmental and operational test and evaluation planning, execution, and reporting in support of government review and design approval for the replacement of DAISS, MCS, UHF C3 System, incorporation of MLS OSA with new servers, operator stations, fixes in ground electrical, and cooling capabilities for austere operations. Development of design changes to accommodate Internet Protocol Bandwidth Expansion (IPBE) impacts to the pre-Block I baseline aircraft, will begin in FY07. The Block I Recapture (Block IA), which includes the Auxiliary Power Unit (APU), the High Power Transmit Set (HPTS), and the Very Low Frequency Transmitter (VLF-TX), will begin in FY08.

CDR and Systems Integration Lab (SIL) Support	FY 2006	FY 2007	FY 2008	FY 2009
Accomplishments / Effort / Sub-total Cost	2.846	2.677	2.873	3.017
RDT&E Articles Qty				

Funding supports engineering, management, trade studies, studies and analysis contract support services for acquisition planning and development of acquisition documents, schedule development and monitoring, industry conferences, DoD 5000 series document development and revision, engineering and C3 architectural studies and analysis, Systems Integration Lab modification and test, logistics planning, training planning and CDRL reviews for the replacement of DAISS, MCS, UHF C3 System, incorporation of MLS OSA with new servers and operator stations, and fixes in ground electrical and cooling capabilities for austere operations. Development of design changes to accommodate Internet Protocol Bandwidth Expansion (IPBE) impacts to the pre-Block I baseline aircraft, will begin in FY07. The Block I Recapture (Block IA), which includes the Auxiliary Power Unit (APU), the High Power Transmit Set (HPTS), and the Very Low Frequency Transmitter (VLF-TX), will begin in FY08.

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2007
APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0101402N, NAVY STRATEGIC COMMUNICATIONS	PROJECT NUMBER AND NAME 3002, NAVY STRATEGIC COMMUNICATIONS BLOCK I

CDR and SIL Install	FY 2006	FY 2007	FY 2008	FY 2009
Accomplishments / Effort / Sub-total Cost	24.311	26.317	21.779	20.456
RDT&E Articles Qty				

Funding supports all prime contract tasks following Block I contract award including program initiation, engineering research, design development, integration and test of MLS OSA, MCS, DAISS, electrical, cooling, and other subsystems related to Block I; prepare and conduct design reviews (engineering, logistics, training, test) including PDR, CDR, and TRRs; Systems Integration Laboratory modification, preparation for and presentation of the Block I design, contractor developmental test and evaluation planning, leading to LRIP approval and award. Development of design changes to accommodate Internet Protocol Bandwidth Expansion (IPBE) impacts to the pre-Block I baseline aircraft, will begin in FY07. The Block I Recapture (Block IA), which includes the Auxiliary Power Unit (APU), the High Power Transmit Set (HPTS), and the Very Low Frequency Transmitter (VLF-TX), will begin in FY08.

DT/OT Testing	FY 2006	FY 2007	FY 2008	FY 2009
Accomplishments / Effort / Sub-total Cost			2.000	4.910
RDT&E Articles Qty				

Funding supports Developmental Testing (DT) and Operational Testing (OT).

C. OTHER PROGRAM FUNDING SUMMARY:	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Complete	Total Cost
056400 E-6 A/B Series	11.068	58.647	126.185	106.224	112.748	126.862	125.201	116.273	451.067	1,234.275

D. ACQUISITION STRATEGY:

Competively awarded Cost Plus Award Fee (CPAF) development contract and CPAF/Cost Plus Incentive Fee (CPIF) Low Rate Initial Production (LRIP) option with sole source follow-on Firm Fixed Price(FFP) Full Rate Production (FRP) contract.

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Exhibit R-3 Cost Analysis (page 1)										DATE: February 2007		
APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-7			PROGRAM ELEMENT 0101402N, NAVY STRATEGIC COMMUNICATIONS				PROJECT NUMBER AND NAME 3002, NAVY STRATEGIC COMMUNICATIONS BLOCK I					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
PRODUCT DEVELOPMENT												
Award Fee	C/CPAF	ROCKWELL COLLINS, INC., Cedar Rapids	3.751	1.876	VARIOUS	1.914	VARIOUS	.900	VARIOUS		8.441	8.441
Primary Hdw Development	C/CPAF	ROCKWELL COLLINS, INC., Cedar Rapids	50.482	14.076	Nov 2006	8.088	Nov 2007	2.726	Nov 2008		75.372	75.372
Primary Hdw Development	C/CPAF	TBD		10.365	VARIOUS	10.577	VARIOUS	16.830	VARIOUS	47.215	84.987	84.987
Training Development WST	C/CPAF	TBD				1.200	Nov 2007				1.200	1.200
SUBTOTAL PRODUCT DEVELOPMENT			54.233	26.317		21.779		20.456		47.215	170.000	

Remarks: First award fee (April 2004-Sep 2004) Contractor earned 77.56%. Second award fee (Oct 2004-Mar 2005) Contractor earned 85%. Third award fee (April 2004-Sep 2005) Contractor earned 85.79%. Fourth award fee (Oct 2005-Mar 2006) Contractor earned 31%. Fifth award fee (April 2006-Sept 2006) Contractor earned 45.69%.

SUPPORT												
Studies & Analyses	RX	VARIOUS	3.476	.207	Nov 2006	.217	Nov 2007	.228	Nov 2008	.513	4.641	
SUBTOTAL SUPPORT			3.476	.207		.217		.228		.513	4.641	

Remarks:

TEST & EVALUATION												
Developmental Test & Evaluation	WX	NAWCAD, PATUXENT RIVER MD				2.000	Nov 2007					2.000
Operational Test & Evaluation	WX	NAWCAD, PATUXENT RIVER MD						4.910	Nov 2008			4.910
SUBTOTAL TEST & EVALUATION						2.000		4.910				6.910

Remarks:

Contractor Engineering Support	RX	VARIOUS	8.021	1.307	Nov 2006	1.496	Nov 2007	1.830	Nov 2008	2.850	15.504	
Government Engineering Support	WX	NAWCAD, PATUXENT RIVER, MD	16.874	4.062	Nov 2006	5.508	Nov 2007			2.690	29.134	
Government Engineering Support	RX	VARIOUS	3.777	3.961	Nov 2006	4.071	Nov 2007	3.042	Nov 2008	7.903	22.754	
Program Management Support	RX	VARIOUS	8.723	1.163	Nov 2006	1.160	Nov 2007	.959	Nov 2008	2.436	14.441	
Travel	TO	NAVAIR HQ, PAXTUXENT RIVER, MD	.668	.300	VARIOUS	.300	VARIOUS	.300	VARIOUS	.700	2.268	
SUBTOTAL MANAGEMENT			38.063	10.793		12.535		6.131		16.579	84.101	

Remarks: RDT&E funding for Government Engineering Support (NAWCAD) ends in FY08 and resumes in FY11 to support remaining R&D efforts.

Total Cost			95.772	37.317		36.531		31.725		64.307	265.652	
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Remarks:

CLASSIFICATION:																																
EXHIBIT R4, Schedule Profile																								DATE:								
APPROPRIATION/BUDGET ACTIVITY																								PROGRAM ELEMENT NUMBER AND NAME				PROJECT NUMBER AND NAME				
RDT&E, N / BA-7																								0101402N, Navy Strategic Communications				3002, Navy Strategic Communications Block 1				
Fiscal Year	2006				2007				2008				2009				2010				2011				2012				2013			
	1	2	3	4	1	2	3	4	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																																
Source Selection																																
Contract Award		ECS / STE		▲		▲		IP																								
Design Readiness Review						▲		Design Readiness Review																								
Milestone C												Block I MS-C ▲																				
System Development																																
Preliminary Design Review																																
Critical Design Review						▲		Aircraft CDR																								
System Integration Lab Install																																
Prototype Aircraft Installation																																
Test & Evaluation Milestones																																
Contractor/Developmental Operational Test (OPEVAL)																																
Production Milestones																																
LRIP Phase																																
Full Rate Production Decision/Start																																
First Deployment																																
Full Rate Production																																
IOC																																

¹ APU, VLF-TX, HPTS Refurbishment (AVH)

CLASSIFICATION:									
Exhibit R-4a, Schedule Detail						DATE: February 2007			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT 0101402N, Navy Strategic Communications				PROJECT NUMBER AND NAME 3002, Navy Strategic Communications Block 1			
Schedule Profile		FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Systems Integration Lab		3Q-4Q	1Q-2Q						
Critical Design Review (CDR)		4Q							
Contract Award (ECS/STE)		4Q							
Contract Award (IP)			2Q						
Prototype Aircraft Installation			2Q-4Q	1Q-2Q					
Design Readiness Review			2Q						
Source Selection (AVH)*				1Q-4Q					
Contractor/Developmental Testing (CT/DT)				2Q-4Q	1Q				
Contract Award (AVH)					1Q				
Milestone C (MS-C)					1Q				
Operational Testing (OPEVAL)					1Q-2Q				
LRIP Phase					2Q-4Q	1Q-4Q	1Q-2Q		
Full Rate Production (FRP) Decision/Start						1Q			
Full Rate Production (FRP)						1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
Systems Integration Lab (AVH)						3Q-4Q	1Q		
First Deployment						4Q			
Prototype Aircraft Installation (AVH)							1Q-2Q		
Contractor/Developmental Testing (CT/DT) (AVH)							2Q-3Q		
Milestone C (MS-C) (AVH)							4Q		
Operational Testing (OPEVAL) (AVH)							4Q	1Q	
LRIP Phase (AVH)							4Q	1Q-4Q	1Q-4Q
IOC							4Q		
Full Rate Production (FRP) (AVH)								3Q-4Q	1Q-4Q
* APU, VLF-TX, HPTS Refurbishment (AVH)									

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2007		
APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0101402N, NAVY STRATEGIC COMMUNICATIONS			PROJECT NUMBER AND NAME 9999, CONGRESSIONAL ADD				
COST (\$ in Millions)		FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
9999, CONGRESIONAL ADD		3.937							
RDT&E Articles Qty									

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

(9999) CONGRESSIONAL ADD: The E-6B Aircraft Block I Mod program: APU/ECS upgrade. This funding was added to the Block I Program to perform non-recurring engineering to modify the Environmental Control System (ECS) to accommodate obsolescence, to include Secure Telephone Equipment (STE) and TFD-8000 updates, in the Block I Mod design prior to developmental testing.

B. ACCOMPLISHMENTS / PLANNED PROGRAM:

9834N	FY 2006	FY 2007	FY 2008	FY 2009
Accomplishments / Effort / Sub-total Cost	3.937			
RDT&E Articles Qty				

This effort was added to the Block I Program to perform non-recurring engineering to modify the Environmental Control System (ECS) to accommodate obsolescence, to include Secure Telephone Equipment (STE) and Time Frequency Distribution (TFD)-8000 updates, in the Block I Mod design prior to developmental testing.