

## UNCLASSIFIED

## RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE

February 2003

BUDGET ACTIVITY

07 - Operational System Development

PE NUMBER AND TITLE

0302015F E-4B NATIONAL AIRBORNE OPERATIONS CENTER

PROJECT

4777

COST (\$ in Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
4777 E-4B Aircraft Modernization	18,596	46,688	44,377	53,164	23,584	287	0	0	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

In FY02, \$20M of Defense Emergency Response Funding (DERF) was provided to the 'National Airborne Command Post' under the general category of Improved Command and Control. The E-4B weapon system (PE: 0302015F) received \$18.2M of these funds, which were used toward the following projects: Senior Leadership Communication System (SLCS) study (\$0.3M) and procurement (\$5.0M), Defense Message System (DMS) (\$0.4M), Global Air Traffic Management Phase II (GATM II) (\$3.8M), and E-4B depot maintenance work (\$8.7M). The remaining \$1.8M was provided to the NAOC Ground Command Communications Network (PE: 0302052F). All the E-4B related DERF funds were spent in support of operation HOMELAND DEFENSE. This funding is not reflected in the FY02 program total.

(U) **A. Mission Description**

The E-4B National Airborne Operations Center (NAOC) modernization program upgrades the fleet of four highly modified Boeing 747-200 aircraft to add new capability and improve reliability in support of the two primary missions for this weapon system. The E-4B NAOC fleet satisfies the military requirement to provide a survivable operations center as an alternate to the National Military Command Center (NMCC) located in the Pentagon. The E-4B NAOC fleet also satisfies the military need for an airborne operations center with communications capabilities that will permit senior national leadership to monitor and control military and civil national assets during all phases of national conflict or disaster. Developmental modifications include, but are not limited to, upgrades and enhancements to aircraft structures, propulsion system, fuel system, environmental control system, electrical generation and distribution systems, flight safety and navigation systems (with their associated communications equipment), and the operations center related facilities, equipment, and communications necessary for the E-4B fleet to execute its primary mission as an alternate NMCC.

Modifications currently underway or planned for accomplishment under this project in the next four to five years include:

Modification Block 1 (Mod Blk 1): A group designator for modifications being started and completed together on the same aircraft. The RDT&E elements of Mod Blk 1 include Block 5A and GATM II (note: actual Mod Blk 1 also includes SLCS, but SLCS does not require RDT&E funding).

Block 5A is an Audio Infrastructure Upgrade (AIU) that affects the primary mission internal audio distribution and recording system. It replaces obsolete 1960s era equipment with digital technology that corrects a major sustainment issue associated with out-dated analog voice data distribution and recording equipment.

GATM II is the second part of a 3-phased implementation of Global Access, Navigation, and Safety/Global Air Traffic Management (GATM) modifications to

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(U) A. Mission Description Continued

permit unencumbered access to international airspace and to maintain the level of E-4B flight safety consistent with civil standards that become effective in CY05.

## Senior Leaders Communication System (SLCS )

Completion of FY02 DERF funded studies during FY02 concluded that the technical solution to the SLCS requirements (provide 'office in the sky' capability for senior leaders that includes commercial Direct Broadcast Service, and video teleconferencing capability, plus access to Defense Information System Network and Public Switch Network for voice, video and data exchange on and off the airplane (external e-mail and Internet access)) will not require research and development. The SLCS modification will be funded with Aircraft Procurement modification funds.

## Block 5B: A primary mission equipment modification that will:

Greatly improve the ability to store, manipulate, distribute and view information related to the aircraft's primary mission. These enhancements will increase the accuracy, timeliness, and throughput of tactical and strategic information presented to embarked military decision-making commanders;

Reduce internal airborne noise in senior leaders conferencing and briefing areas.

(U) FY 2002 (\$ in Thousands)

(U)	\$0	Accomplishment/Planned Program
(U)	\$1,671	Purchase GATM II Prototype Kit
(U)	\$15,625	System Engineering (Block 5A/GATM II)
(U)	\$1,300	Contractor Technical and Program Management Support
(U)	\$18,596	Total

(U) FY 2003 (\$ in Thousands)

(U)	\$0	Accomplishment/Planned Program
(U)	\$38,241	Blk 5A (AIU) System Engineering, Prototype Kit
(U)	\$197	Blk 5B - Data Concept Exploration
(U)	\$6,750	GATM II System Engineering and Prototype Kit
(U)	\$0	SLCS System Engineering, Prototype Kit and Install
(U)	\$1,500	Contractor Technical and Program Management Support
(U)	\$46,688	Total

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(U) **A. Mission Description Continued**(U) **FY 2004 (\$ in Thousands)**

(U) \$0	Accomplishment/Planned Program
(U) \$32,712	Mod Blk 1 - AIU prototype installation (formerly called Block 5A)
(U) \$8,446	Mod Blk 1 - GATM II prototype installation
(U) \$1,119	Block 5B - Data concept exploration
(U) \$2,100	Contractor Technical and Program Management Support
(U) \$44,377	Total

(U) **B. Budget Activity Justification**

Because the E-4B program develops modifications for a fielded system, it is categorized as a budget activity 7 - Operational System Development.

(U) **C. Program Change Summary (\$ in Thousands)**

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>
(U) Previous President's Budget	23,126	47,867	64,094	TBD
(U) Appropriated Value	23,359	47,867		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions	-233	-706		
b. Small Business Innovative Research	-638			
c. Omnibus or Other Above Threshold Reprogram		-473		
d. Below Threshold Reprogram	-3,801			
e. Rescissions	-91			
(U) Adjustments to Budget Years Since FY 2003 PBR			-19,717	
(U) Current Budget Submit/FY 2004 PBR	18,596	46,688	44,377	TBD

(U) **Significant Program Changes:**

The E-4B program was restructured during FY02 due to FY02 cost overruns, the reprogramming of FY02 funds to higher priority Air Force programs, and projected cost increases in future year efforts. This restructuring delays some program segments. Initial Operational Capability (IOC) for Mod Block 1 is FY05. IOC of GATM III has been delayed pending successful execution of Mod Block 1. Block 5B begins with exploration of a data distribution and viewing concept. These program adjustments have been made to preserve both schedule and content of the highest priority E-4B programs (Mod Blk 1).

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(U) **D. Other Program Funding Summary (\$ in Thousands)**

	<u>FY 2002</u> <u>Actual</u>	<u>FY 2003</u> <u>Estimate</u>	<u>FY 2004</u> <u>Estimate</u>	<u>FY 2005</u> <u>Estimate</u>	<u>FY 2006</u> <u>Estimate</u>	<u>FY 2007</u> <u>Estimate</u>	<u>FY 2008</u> <u>Estimate</u>	<u>FY 2009</u> <u>Estimate</u>	<u>Cost to</u> <u>Complete</u>	<u>Total Cost</u>
(U) AF RDT&E										
(U) Other APPN										
(U) Aircraft Procurement AF, Budget Activity 5, Weapon System Code E00400, PE 0302015F; Mod 4381 (AIU--formerly Blk 5A);4381B (Blk 5B); Mod 9709 (GATM Phase II)	0	0	32,004	21,783	52,644	62,755	22,496	0	Continuing	Continuing

(U) **E. Acquisition Strategy**

A mod block structure has been established which includes Block 5A (AIU), GATM II and SLCS (note: SLCS doesn't require RDT&E but will be part of Mod Blk 1 install). System engineering, design, and prototype installation is being done under a Cost Plus Incentive Fee (CPIF) contract with Boeing - Wichita. Installations are in conjunction with Program Depot Maintenance (PDM) at the contractor's facility.

(U) **F. Schedule Profile**

	<u>FY 2002</u>				<u>FY 2003</u>				<u>FY 2004</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Mod Block 1												
(U) Complete Systems Engineering								X				
(U) Initiate Purchase Prototype Hardware	*											
(U) Start Prototype Install									X			
(U) Complete Prototype Install												X
(U) Conduct OT&E /IOC 1QFY05												
(U) Block 5B												
(U) Begin Data Concept Exploration						X						

Note: \* indicates completed action

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## RDT&amp;E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

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(U) **A. Project Cost Breakdown (\$ in Thousands)**

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>
(U) Project Engineering/Install Cost	6,522		41,158
(U) System Engineering & Integration	1,442	35,170	
(U) Prototype Hardware Purchases	9,332	9,821	
(U) Block 5B Concept Exploration		197	1,119
(U) Contractor Technical / Program Management Support	1,300	1,500	2,100
(U) Total	18,596	46,688	44,377

(U) **B. Budget Acquisition History and Planning Information (\$ in Thousands)**(U) **Performing Organizations:**

<u>Contractor or Government Performing Activity</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>										
Boeing	CPAF/T&M	Feb 97	TBD	TBD		17,296			Continuing	TBD
Boeing - Wichita	CPIF	Jan 03					45,188	42,277	Continuing	TBD
<u>Support and Management Organizations</u>										
TRW	T & M	Oct 98	N/A	N/A	0	998	1,061	1,658	Continuing	TBD
DISA	MIPR	Various	TBD	TBD	0	125	276	245	Continuing	TBD
<u>Test and Evaluation Organizations</u>										
605 FT	Project Order	N/A	TBD	TBD	0	177	163	197	Continuing	TBD

(U) **Government Furnished Property:**

<u>Item Description</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Delivery Date</u>	<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
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## RDT&amp;E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

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(U) Government Furnished Property Continued:

<u>Item</u>	<u>Contract</u> <u>Method/Type</u> <u>or Funding</u>	<u>Award or</u> <u>Obligation</u> <u>Date</u>	<u>Delivery</u> <u>Date</u>	<u>Total Prior</u> <u>to FY 2002</u>	<u>Budget</u> <u>FY 2002</u>	<u>Budget</u> <u>FY 2003</u>	<u>Budget</u> <u>FY 2004</u>	<u>Budget to</u> <u>Complete</u>	<u>Total</u> <u>Program</u>
<u>Product Development Property</u>									
None									
<u>Support and Management Property</u>									
None									
<u>Test and Evaluation Property</u>									
None									
<u>Subtotals</u>				<u>Total Prior</u> <u>to FY 2002</u>	<u>Budget</u> <u>FY 2002</u>	<u>Budget</u> <u>FY 2003</u>	<u>Budget</u> <u>FY 2004</u>	<u>Budget to</u> <u>Complete</u>	<u>Total</u> <u>Program</u>
Subtotal Product Development					17,296	45,188	42,277	TBD	TBD
Subtotal Support and Management				0	1,123	1,337	1,903	TBD	TBD
Subtotal Test and Evaluation				0	177	163	197	TBD	TBD
Total Project				0	18,596	46,688	44,377	TBD	TBD

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