

UNCLASSIFIED

PE NUMBER: 0305099F

PE TITLE: Global Air Traffic Management (GATM)

Exhibit R-2, RDT&E Budget Item Justification	DATE February 2004
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BUDGET ACTIVITY 07 Operational System Development	PE NUMBER AND TITLE 0305099F Global Air Traffic Management (GATM)
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Cost (\$ in Millions)	FY 2003 Actual	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total
Total Program Element (PE) Cost	6.961	6.820	7.291	7.499	7.773	7.895	8.020	Continuing	TBD
4689 Global Access Architecture	6.961	6.820	7.291	7.499	7.773	7.895	8.020	Continuing	TBD

(U) A. Mission Description and Budget Item Justification

Global Air Traffic Management: GATM is the Air Force program designed to meet the evolving aviation requirements of the International Civil Aviation Organization (ICAO). GATM, Navigation and Safety, and Navigation Warfare (NAVWAR) are major components of the AF's Global Access, Navigation, and Safety (GANS) management effort. The Global Air Traffic Operations/Mobility Command and Control (GATO/MC2) System Program Office (SPO) supports GATM as the AF's central focal point for analyzing and evaluating operational requirements, developing aircraft system architectures, acquiring aviation equipment, and certifying weapon system implementation. Per AFPD 63-13, SPO support funds engineering services, acquisition support, and certification of platform integration. The system architectures identify necessary equipment and aircraft capability shortfalls across the Air Force inventory, for mobility, information dominance, bombers, fighters, trainers, helicopters, and unmanned aerial vehicles. For those capabilities where no current solution exists, development activities are undertaken in conjunction with existing DoD communications, navigation, surveillance, and safety program offices. Dual-use capabilities of avionics to satisfy GATM and military requirements of the Air Force fleet will be explored. The SPO will continue projections of studies and prototype efforts necessary to ensure AF aviation weapon systems are postured to meet civil standards and future changes to the civil standards leading to free flight. This project supports the definition of requirements for ACAT III projects across multiple weapon systems. No existing program satisfies the requirements of the GATM initiatives.

This program upgrades avionics to add air traffic control capabilities to currently fielded weapon systems and is assigned Budget Activity 7, Operational Systems Development.

(U) B. Program Change Summary (\$ in Millions)

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
(U) Previous President's Budget	7.041	7.164	7.291
(U) Current PBR/President's Budget	6.961	6.820	7.291
(U) Total Adjustments	-0.080	-0.344	
(U) Congressional Program Reductions			
Congressional Rescissions	-0.080	-0.344	
Congressional Increases			
Reprogrammings	0.000		
SBIR/STTR Transfer			
(U) <u>Significant Program Changes:</u>			

Exhibit R-2a, RDT&E Project Justification

DATE

February 2004

BUDGET ACTIVITY 07 Operational System Development		PE NUMBER AND TITLE 0305099F Global Air Traffic Management (GATM)					PROJECT NUMBER AND TITLE 4689 Global Access Architecture			
Cost (\$ in Millions)	FY 2003 Actual	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total	
4689 Global Access Architecture	6.961	6.820	7.291	7.499	7.773	7.895	8.020	Continuing	TBD	
Quantity of RDT&E Articles	0	0	0	0	0	0	0			

(U) A. Mission Description and Budget Item Justification

Global Air Traffic Management: GATM is the Air Force program designed to meet the evolving aviation requirements of the International Civil Aviation Organization (ICAO). GATM, Navigation and Safety, and Navigation Warfare (NAVWAR) are major components of the AF's Global Access, Navigation, and Safety (GANS) management effort. The Global Air Traffic Operations/Mobility Command and Control (GATO/MC2) System Program Office (SPO) supports GATM as the AF's central focal point for analyzing and evaluating operational requirements, developing aircraft system architectures, acquiring aviation equipment, and certifying weapon system implementation. Per AFPD 63-13, SPO support funds engineering services, acquisition support, and certification of platform integration. The system architectures identify necessary equipment and aircraft capability shortfalls across the Air Force inventory, for mobility, information dominance, bombers, fighters, trainers, helicopters, and unmanned aerial vehicles. For those capabilities where no current solution exists, development activities are undertaken in conjunction with existing DoD communications, navigation, surveillance, and safety program offices. Dual-use capabilities of avionics to satisfy GATM and military requirements of the Air Force fleet will be explored. The SPO will continue projections of studies and prototype efforts necessary to ensure AF aviation weapon systems are postured to meet civil standards and future changes to the civil standards leading to free flight. This project supports the definition of requirements for ACAT III projects across multiple weapon systems. No existing program satisfies the requirements of the GATM initiatives.

This program upgrades avionics to add air traffic control capabilities to currently fielded weapon systems and is assigned Budget Activity 7, Operational Systems Development.

(U) B. Accomplishments/Planned Program (\$ in Millions)

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
(U) Continue operational requirements analysis, demonstration, and evaluation	1.154	1.159	1.195
(U) Continue development of common avionics and technologies	2.324	2.169	2.185
(U) Continue acquisition of ID/IQ aviation equipment	0.852	0.891	0.912
(U) Continue Nav/Safety and GPS/NAVWAR integration and interoperability evaluations	0.579	0.589	0.629
(U) Accomplishment/Planned Program: Continue system architecture definitions, development, and certification.	2.052	2.012	2.370
(U) Total Cost	6.961	6.820	7.291

(U) C. Other Program Funding Summary (\$ in Millions)

	<u>FY 2003</u> <u>Actual</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,	125.067	80.524	12.062						308.184

Exhibit R-2a, RDT&E Project Justification	DATE February 2004
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BUDGET ACTIVITY 07 Operational System Development	PE NUMBER AND TITLE 0305099F Global Air Traffic Management (GATM)	PROJECT NUMBER AND TITLE 4689 Global Access Architecture
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(U) <u>C. Other Program Funding Summary (\$ in Millions)</u>				
BA-5, C-5 Avionics Modernization Program, PE 0401119F RDT&E, AF, BA-7, C-5 AMP,				
(U)	PE 0401119F, C-5 Airlift Squadrons Aircraft Procurement, AF,	10.030		74.270
(U)	BA-5, C-5, FM Immunity, PE0401119F Aircraft Procurement, AF,			
(U)	BA-5, C-9 NAVSTAR GPS, PE 0401314F Aircraft Procurement, AF,			
(U)	BA-5, C-9 RVSM, PE 0401314F Aircraft Procurement, AF,			
(U)	BA-5, C-9 TAWS, PE 0401314F Aircraft Procurement, AF,			
(U)	BA-5, KC-10 NAVSTAR GPS, PE 0401219F RDT&E, AF, BA-7, KC-10 GATM, PE 0401219F Aircraft Procurement, AF,	10.584	2.422	35.780
(U)	BA-5, KC-10 GATM, PE 0401219F Aircraft Procurement, AF,	8.163	14.085	39.314
(U)	BA-5, KC-10 FM Immunity, PE 0401219F Aircraft Procurement, AF,			
(U)	BA-5, KC-10 TCAS/TAWS, PE 0401219F			

UNCLASSIFIED

Exhibit R-2a, RDT&E Project Justification						DATE February 2004	
BUDGET ACTIVITY 07 Operational System Development			PE NUMBER AND TITLE 0305099F Global Air Traffic Management (GATM)			PROJECT NUMBER AND TITLE 4689 Global Access Architecture	
(U) C. Other Program Funding Summary (\$ in Millions)							
(U)	Aircraft Procurement, AF, BA-5, C-17 HFDL, PE 0401130F	2.820	7.967	3.651	1.667		19.233
(U)	Aircraft Procurement, AF, BA-5, C-17 GPS Integrity Monitoring Capability, PE 0401130F						
(U)	Aircraft Procurement, AF, BA-5, C-17 GATM II, PE 0401130F		54.372	57.640	55.089	52.547	29.324 248.972
(U)	Aircraft Procurement, AF, BA-5, C-17 RNP-4, PE 0401130F	2.820	7.967	3.651	1.667		19.233
(U)	Aircraft Procurement, AF, BA-5, C-17 TAWS, PE 0401130F	18.796	5.082				35.579
(U)	Aircraft Procurement, AF, BA-5, C-17 GATM PE 0401130F	30.029					69.545
(U)	Aircraft Procurement, AF, BA-5, C-20 TAWS, PE 0401314F						
(U)	Aircraft Procurement, AF, BA-5, C-21 TCAS, PE 0401314F						
(U)	Aircraft Procurement, AF, BA-5, C-21 TAWS, PE 0401314F						
(U)	Aircraft Procurement, AF, BA-5, VC-25 Windshear Warning, PE 0401314F						
(U)	Aircraft Procurement, AF, BA-5, VC-25 Windshear Warning, PE 0401314F	11.124	1.780				24.268

UNCLASSIFIED

Exhibit R-2a, RDT&E Project Justification						DATE February 2004	
BUDGET ACTIVITY 07 Operational System Development			PE NUMBER AND TITLE 0305099F Global Air Traffic Management (GATM)			PROJECT NUMBER AND TITLE 4689 Global Access Architecture	
(U) C. Other Program Funding Summary (\$ in Millions)							
BA-5, VC-25 GATM, PE 0401314F Aircraft Procurement, AF,							
(U)	BA-5, VC-25 TAWS, PE 0401314F Aircraft Procurement, AF,						
(U)	BA-5, T-43 TCAS, PE 0804742F Aircraft Procurement, AF,	1.924	4.910	3.239	0.055		10.128
(U)	BA-5, T-43 TAWS, PE 0804742F Aircraft Procurement, AF,	1.868	5.184	2.722			13.178
(U)	BA-5, C-130 Avionics Modernization Program, PE 0401115F Aircraft Procurement, AF,	80.800	180.200	213.600	303.300	1,982.700	2,760.600
(U)	BA-5, C-130 ETCAS, PE 0401115F Aircraft Procurement, AF,	3.635	0.250				5.990
(U)	BA-5, C-135 8.33 radio, PE 0401218F Aircraft Procurement, AF,						
(U)	BA-5, C-135 Interphone replacement, PE 0401218F Aircraft Procurement, AF,						
(U)	BA-5, C-135 GATM, PE 0401218F Aircraft Procurement, AF,	159.307	157.549	151.846	131.427	137.257	125.213 953.799
(U)	BA-5, C-135 RVSM, PE 0401218F Aircraft Procurement, AF,						19.290
(U)	BA-5, C-135 TAWS, PE						8.788

UNCLASSIFIED

Exhibit R-2a, RDT&E Project Justification						DATE
BUDGET ACTIVITY 07 Operational System Development						PROJECT NUMBER AND TITLE 4689 Global Access Architecture
PE NUMBER AND TITLE 0305099F Global Air Traffic Management (GATM)						DATE February 2004
(U) C. Other Program Funding Summary (\$ in Millions)						
	0401218F					
	Aircraft Procurement, AF,					
(U)	BA-5, C-135 FDR/CVR, PE	1.598				38.102
	0401218F					
	Aircraft Procurement, AF,					
(U)	BA-5, C-135 Pacer CRAG, PE					1.549
	0401218F					
	Aircraft Procurement, AF,					
(U)	BA-5, C-135 FM Immunity,					
	PE0401218F					
	Aircraft Procurement, AF,					
(U)	BA-5, C-141 TCAS, PE					
	0401118F					
(U)	RDT&E , AF, BA-7, E-3	16.876	66.568	20.429		103.873
	GATM, PE 0207417F					
	Aircraft Procurement, AF,					
(U)	BA-5, E-3 GATM, PE			26.515	69.475	95.990
	0207417F					
	Aircraft Procurement, AF,					
(U)	BA-5, E-4 8.33 radio, PE					
	0302015F					
	Aircraft Procurement, AF,					
(U)	BA-5, E-4 TCAS, PE					0.720
	0302015F					
	Aircraft Procurement, AF,					
(U)	BA-5, E-4 TAWS, PE					
	0302015F					
	RDT&E, AF BA-5, E-4 ,					
(U)	INFRASTRUCTURE	9.017	29.351	21.703		77.328
	MODERNIZATION, PE					
	0302015F					
(U)	Aircraft Procurement, AF,	28.262	20.139	31.883	7.306	17.292
						104.882

Project 4689

R-1 Shopping List - Item No. 176-7 of 176-12

Exhibit R-2a (PE 0305099F)

Exhibit R-2a, RDT&E Project Justification

DATE
February 2004

BUDGET ACTIVITY 07 Operational System Development	PE NUMBER AND TITLE 0305099F Global Air Traffic Management (GATM)	PROJECT NUMBER AND TITLE 4689 Global Access Architecture
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(U) C. Other Program Funding Summary (\$ in Millions)

BA-5, E-4 INFRASTRUCTURE MODERNIZATION, PE 0302015F Aircraft Procurement, AF,						
(U)	BA-5, E-4 FDR/CVR, PE 0302015F Aircraft Procurement, AF,					0.480
(U)	BA-5, E-8 GATM, PE 0207581F	22.632	17.993	24.660		74.105
(U)	RDT&E, AF, BA-7, E-8 GATM, PE 0207581F	49.600	63.800	36.300	7.700	157.400
(U)	Aircraft Procurement, AF, BA-5, H-1 TCAS, PE 0101235F Aircraft Procurement, AF,	0.292	0.488			0.780
(U)	BA-5, B-52, GATM, PE 0101113F			0.340	51.300	118.800 170.440
(U)	RDT&E, AF, BA07, B-52 GATM, PE 0101113F Aircraft Procurement, AF,	4.676	15.836	40.000		60.512
(U)	BA-5, C-12 TAWS, PE 0401314F					

(U) D. Acquisition Strategy

The GATM Global Access Architecture acquisition strategy enables the GATO/MC2 SPO to guide equipment acquisition supporting global air traffic operations. The SPO will ensure standardization and certification of USAF platforms/systems that operate in the national and global air traffic environments. The SPO will also provide technical expertise and interface with appropriate product/support centers, battle labs, and Department of Defense (DOD) research and development facilities in the execution of assigned tasks. Program Research and Development Agreements (PRDAs), Cooperative Research and Development Agreements (CRDAs), and Indefinite Delivery/Indefinite Quantity (ID/IQ) contracts will be competitively awarded.

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis

DATE

February 2004

BUDGET ACTIVITY 07 Operational System Development	PE NUMBER AND TITLE 0305099F Global Air Traffic Management (GATM)	PROJECT NUMBER AND TITLE 4689 Global Access Architecture
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(U) <u>Cost Categories</u> (Tailor to WBS, or System/Item Requirements) (\$ in Millions)	<u>Contract Method & Type</u>	<u>Performing Activity & Location</u>	<u>Total</u> <u>Prior to FY</u> <u>2003</u> <u>Cost</u>	<u>FY</u>	<u>FY</u>	<u>FY</u>	<u>FY</u>	<u>FY</u>	<u>FY</u>	<u>Cost to Complete</u>	<u>Total</u> <u>Cost</u>	<u>Target</u> <u>Value of</u> <u>Contract</u>
				<u>2003</u> <u>Cost</u>	<u>2003</u> <u>Award</u>	<u>2004</u> <u>Cost</u>	<u>2004</u> <u>Award</u>	<u>2005</u> <u>Cost</u>	<u>2005</u> <u>Award</u>			
(U) <u>Product Development</u>												
MIT	FFP		2.420	1.486		1.500		1.500		Continuing	TBD	
Honeywell	FFP		2.689	0.028		0.028		0.028		Continuing	TBD	
Allied Signal	FFP		1.975						0.000		1.975	
Rockwell Collins	FFP		1.504							Continuing	TBD	
MITRE Corporation	CPAF		5.188	2.846		2.685		2.759		Continuing	TBD	
Horizons Technology Inc	FFP		3.974							Continuing	TBD	
TASC	CPFF		0.728						0.000		0.728	
Smiths Industries	FFP		0.194							Continuing	TBD	
SAIC	T&M		0.530						0.000		0.530	
ARINC Inc	FFP		0.946							Continuing	TBD	
Lockheed Martin	CPAF		0.159						0.000		0.159	
Bremmer Associates	FFP		0.729						0.000		0.729	
Northrop Grumman	CPAF		2.499						0.000		2.499	
MCR	IDIQ		0.750	0.444		0.332		0.409		Continuing	TBD	
Federal Tech Services	FFP		0.300						0.000		0.300	
DISA/DIT	FFP		0.000							Continuing	TBD	
ACS Defense			0.000	1.155		1.383		1.425			3.963	
Various	various		2.188	0.405		0.342		0.529		Continuing	TBD	
Subtotal Product Development			26.773	6.364		6.270		6.650		Continuing	TBD	0.000
Remarks:												
(U) <u>Support</u>												
MITRE Corporation	CPAF		0.761	0.312		0.296		0.368		Continuing	TBD	
Various	Various		0.788	0.285		0.254		0.273		Continuing	TBD	
Subtotal Support			1.549	0.597		0.550		0.641		Continuing	TBD	0.000
Remarks:												
(U) <u>Test & Evaluation</u>												
412th FLTS (Edwards AFB)			0.111							Continuing	TBD	
Subtotal Test & Evaluation			0.111	0.000		0.000		0.000		Continuing	TBD	0.000

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis

DATE

February 2004

BUDGET ACTIVITY 07 Operational System Development	PE NUMBER AND TITLE 0305099F Global Air Traffic Management (GATM)	PROJECT NUMBER AND TITLE 4689 Global Access Architecture
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Remarks:								
(U) <u>Management</u>								
Subtotal Management	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Remarks:								
(U) Total Cost	28.433	6.961	6.820	7.291	Continuing	TBD	0.000	

Exhibit R-4, RDT&E Schedule Profile

DATE

February 2004

BUDGET ACTIVITY
07 Operational System Development

PE NUMBER AND TITLE
0305099F Global Air Traffic Management (GATM)

PROJECT NUMBER AND TITLE
4689 Global Access Architecture

Fiscal Year	FY02				FY03				FY04				FY05				FY06				FY07				FY08				FY09			
	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
KC-10 Supplemental Type Certification Award									▲																							
KC-135 GATM Certification									▲																							
KC-10 OT Flight Test									■	■	■	■																				
KC-10 LRIP													■	■	■	■																
KC-10 Production Deliverables																	■	■	■	■												
GATM V Contract Award													★																			
C-5 AMP									■	■	■	■					■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
C-17 RNP Improvements									■	■	■	■	■	■	■	■																
KC-10 PMR/TIM					■	■	■	■																								
KC-135 Production/Installation (through 2016)					■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
KC-767 GATM Telecon. System Req. Review									△																							
AWACS IDG Buy/Install									■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■

★ Major Event or Milestone

△ Planned Task(s)

▲ Completed Event

■ Ongoing Activity that is Complete

▬ Planned Ongoing Activity

UNCLASSIFIED

Exhibit R-4a, RDT&E Schedule Detail

DATE

February 2004

BUDGET ACTIVITY

07 Operational System Development

PE NUMBER AND TITLE

0305099F Global Air Traffic Management (GATM)

PROJECT NUMBER AND TITLE

4689 Global Access Architecture

(U) Schedule Profile

(U) System Architecture Definitions

(U) Operational Requirements Analysis

(U) Development of common avionics and technologies

(U) Acquisition of ID/IQ equipment

(U) GPS/NAVWAR Integration Activities

FY 2003

1-4Q

1-4Q

1-4Q

1-4Q

1-4Q

FY 2004

1-4Q

1-4Q

1-4Q

1-4Q

1-4Q

FY 2005

1-4Q

1-4Q

1-4Q

1-4Q

1-4Q