

UNCLASSIFIED

PE NUMBER: 0401219F
 PE TITLE: KC-10S

Exhibit R-2, RDT&E Budget Item Justification	DATE February 2007
---	-------------------------------------

BUDGET ACTIVITY 07 Operational System Development	PE NUMBER AND TITLE 0401219F KC-10S
--	--

Cost (\$ in Millions)	FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total
Total Program Element (PE) Cost	12.907	4.763	36.790	73.591	110.340	86.959	0.000	0.000	Continuing	TBD
5195 Aircraft Modernization Program (AMP)	12.907	4.763	36.790	73.591	110.340	86.959	0.000	0.000	Continuing	TBD

(U) A. Mission Description and Budget Item Justification

Global Air Traffic Management (GATM) was based upon evolving Communication, Navigation and Surveillance (CNS) and Free Flight concepts and requirements. Key elements of its architecture were Dual MMR (Multi-Mode Receiver), Dual CMU (Communications Management Unit), Communication Data links (HF, VHF, SATCOM), and associated avionics components and wiring. Communications upgrades included a data link to augment/replace voice communications. The navigation capabilities included a fully integrated GPS and an advanced flight management system. The surveillance capabilities included automatic aircraft position reporting (both enroute and oceanic). Prototype aircraft delivery was scheduled for 3QFY03 but due to schedule slips and cost overruns, the prototype delivery was expected to be delayed to 2QFY05. The development program was terminated in April 2004.

KC-10 Aircraft Modernization Program (AMP) is the first major modification to the KC-10A Extender and includes required Communication/Navigation/Surveillance (CNS) upgrades, increased survivability, net-centric operational capabilities and reliability enhancements. Specifically, AMP provides mandatory CNS functionality for continued use of global airspace, a robust, integrated, on-board digital aircraft network enabling global net-centric operations, Night Vision Imaging System (NVIS) compatibility for aircraft exterior, boom operator station and cockpit, growth path to Defensive Systems (DS), provisions to support multi-mission payload, and real-time threat information in the cockpit (RTIC). All aircraft controls and systems will be compatible with aircrew chemical defense ensemble. Communications upgrades include datalink capability to augment/replace voice communications and adding secure capability for both voice and data. Navigation capabilities include a fully integrated GPS and an advanced flight management system. Surveillance capabilities include automatic aircraft reporting (both enroute and oceanic). AMP will address reliability, maintainability and obsolescence issues, to include replacing inertial navigation units (INU), central air data computer (CADC), weather radar, analog autopilot, analog engine instruments, analog flight instruments and displays, analog nav/comm radios, cockpit voice recorder (CVR), and flight data recorder (FDR), fuel system gauges, refueling boom/drogue electronics, and flight engineer station controls/instruments. AMP will automate aircrew tasks to reduce the crew's current workload, allow the crew to perform additional missions and manage the increased complexity, and integrate products and displays into an efficient package that will increase situational awareness. KC-10 training and mission planning systems will be correspondingly upgraded. Concept Refinement Studies will address potential technical approaches, spiral development, cockpit commonality, affordability, etc. and will precede award of development contract.

These efforts support a fielded weapon system and therefore are assigned to Budget Activity 7, Operational Systems Development.

Exhibit R-2, RDT&E Budget Item Justification

DATE

February 2007

BUDGET ACTIVITY

07 Operational System Development

PE NUMBER AND TITLE

0401219F KC-10S

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

	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
(U) Previous President's Budget	13.280	4.781	41.475	72.610
(U) Current PBR/President's Budget	12.907	4.763	36.790	73.591
(U) Total Adjustments	-0.373	-0.018		
(U) Congressional Program Reductions				
Congressional Rescissions		-0.018		
Congressional Increases				
Reprogrammings				
SBIR/STTR Transfer	-0.373			
(U) <u>Significant Program Changes:</u>				
FY08 and FY09 were realigned to match current program acquisition strategy.				

Exhibit R-2a, RDT&E Project Justification

DATE

February 2007

BUDGET ACTIVITY 07 Operational System Development		PE NUMBER AND TITLE 0401219F KC-10S					PROJECT NUMBER AND TITLE 5195 Aircraft Modernization Program (AMP)			
Cost (\$ in Millions)	FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total
5195 Aircraft Modernization Program (AMP)	12.907	4.763	36.790	73.591	110.340	86.959	0.000	0.000	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	1	1	2	0	0		

(U) **A. Mission Description and Budget Item Justification**

Global Air Traffic Management (GATM) was based upon evolving Communication, Navigation and Surveillance (CNS) and Free Flight concepts and requirements. Key elements of its architecture were Dual MMR (Multi-Mode Receiver), Dual CMU (Communications Management Unit), Communication Data links (HF, VHF, SATCOM), and associated avionics components and wiring. Communications upgrades included a data link to augment/replace voice communications. The navigation capabilities included a fully integrated GPS and an advanced flight management system. The surveillance capabilities included automatic aircraft position reporting (both enroute and oceanic). Prototype aircraft delivery was scheduled for 3QFY03 but due to schedule slips and cost overruns, the prototype delivery was expected to be delayed to 2QFY05. The development program was terminated in April 2004.

KC-10 Aircraft Modernization Program (AMP) is the first major modification to the KC-10A Extender and includes required Communication/Navigation/Surveillance (CNS) upgrades, increased survivability, net-centric operational capabilities and reliability enhancements. Specifically, AMP provides mandatory CNS functionality for continued use of global airspace, a robust, integrated, on-board digital aircraft network enabling global net-centric operations, Night Vision Imaging System (NVIS) compatibility for aircraft exterior, boom operator station and cockpit, growth path to Defensive Systems (DS), provisions to support multi-mission payload, and real-time threat information in the cockpit (RTIC). All aircraft controls and systems will be compatible with aircrew chemical defense ensemble. Communications upgrades include datalink capability to augment/replace voice communications and adding secure capability for both voice and data. Navigation capabilities include a fully integrated GPS and an advanced flight management system. Surveillance capabilities include automatic aircraft reporting (both enroute and oceanic). AMP will address reliability, maintainability and obsolescence issues, to include replacing inertial navigation units (INU), central air data computer (CADC), weather radar, analog autopilot, analog engine instruments, analog flight instruments and displays, analog nav/comm radios, cockpit voice recorder (CVR), and flight data recorder (FDR), fuel system gauges, refueling boom/drogue electronics, and flight engineer station controls/instruments. AMP will automate aircrew tasks to reduce the crew's current workload, allow the crew to perform additional missions and manage the increased complexity, and integrate products and displays into an efficient package that will increase situational awareness. KC-10 training and mission planning systems will be correspondingly upgraded. Concept Refinement Studies will address potential technical approaches, spiral development, cockpit commonality, affordability, etc. and will precede award of development contract.

These efforts support a fielded weapon system and therefore are assigned to Budget Activity 7, Operational Systems Development.

Exhibit R-2a, RDT&E Project Justification

DATE

February 2007

BUDGET ACTIVITY 07 Operational System Development	PE NUMBER AND TITLE 0401219F KC-10S	PROJECT NUMBER AND TITLE 5195 Aircraft Modernization Program (AMP)
--	--	---

(U) B. Accomplishments/Planned Program (\$ in Millions)	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
(U) Prime Contract			20.830	53.528
(U) Studies and Analysis	10.572	2.394	2.533	2.609
(U) Government Furnished Equipment			4.333	3.167
(U) Government Test and Evaluation			2.505	7.369
(U) Mission Support	2.335	2.369	6.589	6.918
(U)				
(U) Total Cost	12.907	4.763	36.790	73.591

(U) C. Other Program Funding Summary (\$ in Millions)	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Complete</u>							
(U) Other APPN	0.000	0.200	0.000	0.000	0.000	0.000	48.721	46.467	Continuing	TBD
PE # 41219F / KC-10, Aircraft procurement, BP-11, Aircraft Modernization Program										

(U) D. Acquisition Strategy
 Concept Refinement Studies in FY06 will foster competition, mitigate identified acquisition risks, and support System Development and Demonstration (SDD) Request for Proposal (RFP). FY07 will consist of RFP prep, solicitation and source selection. The SDD contract will be a competitively awarded, best value contract, commencing in FY08.

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis

DATE
February 2007

BUDGET ACTIVITY 07 Operational System Development	PE NUMBER AND TITLE 0401219F KC-10S	PROJECT NUMBER AND TITLE 5195 Aircraft Modernization Program (AMP)
--	--	---

<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 Prior to FY 2006 Cost</u>	<u>FY 2006 Cost</u>	<u>FY 2006 Award Date</u>	<u>FY 2007 Cost</u>	<u>FY 2007 Award Date</u>	<u>FY 2008 Cost</u>	<u>FY 2008 Award Date</u>	<u>FY 2009 Cost</u>	<u>FY 2009 Award Date</u>	<u>Cost to Complete</u>	<u>Total Cost</u>	<u>Target Value of Contract</u>
<u>(U) Product Development</u>														
Studies and Analysis	C/CPFF			10.572	Jul-06	2.394		2.533		2.609		Continuing	TBD	
Prime Contract (SDD)	C/tbd							20.830	Mar-08	53.528		Continuing	TBD	
GFE	N/A							4.333		3.167		Continuing	TBD	
Subtotal Product Development			0.000	10.572		2.394		27.696		59.304		Continuing	TBD	0.000
Remarks:														
<u>(U) Support</u>													0.000	
Subtotal Support			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000
Remarks:														
<u>(U) Test & Evaluation</u>														
Gov Test and Evaluation								2.505		7.369		Continuing	TBD	
Subtotal Test & Evaluation			0.000	0.000		0.000		2.505		7.369		Continuing	TBD	0.000
Remarks:														
<u>(U) Management</u>														
Mission Support		Wright Patterson AFB, OH		2.335		2.369		6.589		6.918		Continuing	TBD	
													0.000	
													0.000	
													0.000	
													0.000	
Subtotal Management			0.000	2.335		2.369		6.589		6.918		Continuing	TBD	0.000
Remarks:														
<u>(U) Total Cost</u>			0.000	12.907		4.763		36.790		73.591		Continuing	TBD	0.000

Exhibit R-4, RDT&E Schedule Profile

DATE

February 2007

BUDGET ACTIVITY
07 Operational System Development

PE NUMBER AND TITLE
0401219F KC-10S

PROJECT NUMBER AND TITLE
5195 Aircraft Modernization Program
(AMP)

**Exhibit R-4, RDT&E Schedule Profile
07 Operational Systems Development**

Fiscal Year	FY06	FY06	FY06	FY06	FY07	FY07	FY07	FY07	FY08	FY08	FY08	FY08
Quarter	1	2	3	4	1	2	3	4	1	2	3	4
CDD JRQC Approved			*									
Concept Refinement Studies												
Draft SDD RFP							*					
SDD RFP								*				
Source Selection												
SDD Contract Award/Milestone B											*	

UNCLASSIFIED

Exhibit R-4a, RDT&E Schedule Detail	DATE February 2007
--	------------------------------

BUDGET ACTIVITY 07 Operational System Development	PE NUMBER AND TITLE 0401219F KC-10S	PROJECT NUMBER AND TITLE 5195 Aircraft Modernization Program (AMP)
--	--	---

(U) <u>Schedule Profile</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
(U) CDD approved by JROC	3Q			
(U) Concept Refinement Studies	4Q	2Q		
(U) Draft System Development & Demonstration (SDD) Request for Proposal (RFP) released		3Q		
(U) SDD RFP released		4Q		
(U) Source Selection		4Q	2Q	
(U) SDD Contract Award / Milestone B			2Q	