

UNCLASSIFIED

PE NUMBER: 0401219F

PE TITLE: KC-10S

Exhibit R-2, RDT&E Budget Item Justification	DATE May 2009
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BUDGET ACTIVITY 07 Operational System Development	PE NUMBER AND TITLE 0401219F KC-10S
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Cost (\$ in Millions)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost to Complete	Total
Total Program Element (PE) Cost	13.510	0.000	35.586	0.000	0.000	0.000	0.000	0.000	Continuing	TBD
5195 Aircraft Modernization Program (AMP)	13.510	0.000	35.586	0.000	0.000	0.000	0.000	0.000	Continuing	TBD

(U) A. Mission Description and Budget Item Justification

The KC-10A Extender is an aerial refueling asset built on the commercial DC-10 airframe. The aircraft creates an air bridge to enable rapid global mobility and global strike missions. There are 59 aircraft in the USAF tanker fleet.

RDT&E funds throughout the FYDP will be used to support the Communications, Navigation and Surveillance/Air Traffic Management (CNS/ATM) and Boom Control Unit (BCU) modification efforts.

The KC-10 Aircraft Modernization Program (AMP) was the first major modification to the KC-10A Extender and included required CNS upgrades, increased survivability, net-centric operational capabilities, reliability enhancements, Night Vision Imaging System (NVIS), a growth path for Defensive Systems (DS), provisions to support multi-mission payloads, real-time threat information in the cockpit (RTIC), communications upgraded flight data recorder (FDR), fuel system gauges, refueling boom/drogue electronics, and flight engineer station controls/instruments.

In mid-FY07, concept refinement studies addressed potential technical approaches, spiral developments, cockpit commonality and yielded valuable affordability information. Shortly thereafter, HQ AMC decided to reduce program scope based on affordability. As a result, the current effort will consist of three AMP requirements: Communications Navigation Surveillance/Air Traffic Management (CNS/ATM), Boom Control Unit (BCU) and Mode 5. As of Mar 08, OC-ALC assumed management responsibility for the program.

The KC-10 CNS/ATM program will provide worldwide airspace accessibility by FY2015 for the fleet of 59 aircraft. An upgrade of the current Flight Management System (FMS) and Inertial Navigation System (INS) will be required to meet the 2015 CNS/ATM requirements. Avionics components shall use either commercial off-the-shelf (COTS), or military off-the-shelf (MOTS) software and hardware. CNS/ATM requirements include: Required Navigation Performance (RNP-4) Oceanic/Remote for En-route Oceanic Airspace with either 50/50 NM or 30/30 NM separations; Basic Area Nav (BRNAV) for En route European Airspace (9,500ft & up); RNAV 2 & 1 for en route & Terminal airspace operations; Precision-RNAV (P-RNAV) for preferred terminal area routes in Europe (1 NM Accuracy); RNP-4 & RNP-1 for reduced separations en route, and terminal airspace; Time of Arrival Control for Refuel rendezvous (within 30 sec); Automatic Dependent Surveillance-Broadcast (ADS-B) Out for enhanced air and ground surveillance; Global Positioning System (GPS) for enhanced navigation capability; Selective Availability Anti-Spoofing Module (SAASM) for Global Positioning System (GPS) Security; Satellite Data Link for ATS and C2 Communications for flight in Oceanic Airspace (FL310-410); Satellite Voice for Beyond Line of Sight (BLOS) Pilot - Controller Communications and C2 Operations; and VHF Data Link (VD)L Mode-2 for LOS Pilot - Controller Communications and C2 Operations. FAA airworthiness certification of the modification is required.

The KC-10 Boom Control Unit (BCU), responsible for the operation of the KC-10's primary air refueling mission, will soon be unsupportable due to parts

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obsolescence starting in 2010. Once the BCU spares pool is exhausted, any KC-10 requiring a BCU repair or replacement will not be capable of performing its air refueling mission until a replacement unit is fielded. This modification effort replaces the current BCU to overcome these parts obsolescence issues. The replacement BCU will be form, fit, function, and interface identical to the existing unit so as to be fully interchangeable.

This program has associated APAF funding in Program Elements 41219F and 41897F.

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

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

	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
(U) Previous President's Budget	13.703	0.000	0.000
(U) Current PBR/President's Budget	13.510	0.000	35.586
(U) Total Adjustments	-0.193	0.000	
(U) Congressional Program Reductions			
Congressional Rescissions			
Congressional Increases			
Reprogrammings			
SBIR/STTR Transfer	-0.193		
(U) <u>Significant Program Changes:</u>			
Program scope reduced based on affordability.			

Exhibit R-2a, RDT&E Project Justification

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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 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost to Complete	Total
5195 Aircraft Modernization Program (AMP)	13.510	0.000	35.586	0.000	0.000	0.000	0.000	0.000	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0		

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(U) <u>B. Accomplishments/Planned Program (\$ in Millions)</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
(U) Development Engineering, Design, and Integration	10.354	0.000	30.807
(U) Studies and Analysis	0.848	0.000	3.000
(U) Government Test and Evaluation	0.000	0.000	0.000
(U) Mission Support	2.308	0.000	1.779
(U)			
(U)			
(U)			
(U)			
(U)			
(U) Total Cost	13.510	0.000	35.586

(U) <u>C. Other Program Funding Summary (\$ in Millions)</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>FY 2014</u>	<u>FY 2015</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) Boom Control Unit (BCU) Mod # 7727 Procurement			0.056							0.056

(U) **D. Acquisition Strategy**
 The KC-10 CNS/ATM Program will upgrade aircraft systems and avionics capabilities to provide worldwide airspace accessibility by 2015 through the incorporation of the following capabilities: Flight Management System (FMS) Replacement, Inertial Navigation System (INS) Replacement, Global Positioning System (GPS) Replacement, Selective Availability Anti-Spoofing Module (SAASM), Limited Integrated On-board Aircraft Network, and Limited Cockpit Digital Instrumentation

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Exhibit R-3, RDT&E Project Cost Analysis

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(U) Cost Categories (Tailor to WBS, or System/Item Requirements) (\$ in Millions)	Contract Method & Type	Performing Activity & Location	Total Prior to FY 2008 Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost to Complete	Total Cost	Target Value of Contract
(U) <u>Product Development</u>												
Studies and Analysis	T&M		0.648	0.848		0.000				0.000	1.496	
Development Engineering, Design, and Integration (BCU Phase I)	T&M		0.000	4.811		0.000				0.000	4.811	
Development Engineering, Design, and Integration (BCU Phase II)	T&M			5.543		0.000	May-09				5.543	
Development Engineering, Design, and Integration (BCU Phase III)	T&M							1.920			1.920	
Development Engineering, Design, and Integration (CNS/ATM)	TBD							28.887	Feb-15		28.887	
Subtotal Product Development			0.648	11.202		0.000		30.807		0.000	42.657	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
Remarks:												
(U) <u>Test & Evaluation</u>												
Gov Test and Evaluation (BCU)	TBD		0.000					3.000		0.000	3.000	
Gov Test and Evaluation (CNS/ATM)	TBD										0.000	
Subtotal Test & Evaluation			0.000	0.000		0.000		3.000		0.000	3.000	0.000
Remarks:												
(U) <u>Management</u>												
Mission Support	Services	Tinker AFB, OK	0.752	2.308		0.000		1.779			4.839	
											0.000	
											0.000	
											0.000	
Subtotal Management			0.752	2.308		0.000		1.779		0.000	4.839	0.000
Remarks:												
(U) Total Cost			1.400	13.510		0.000		35.586		0.000	50.496	0.000

Exhibit R-4, RDT&E Schedule Profile

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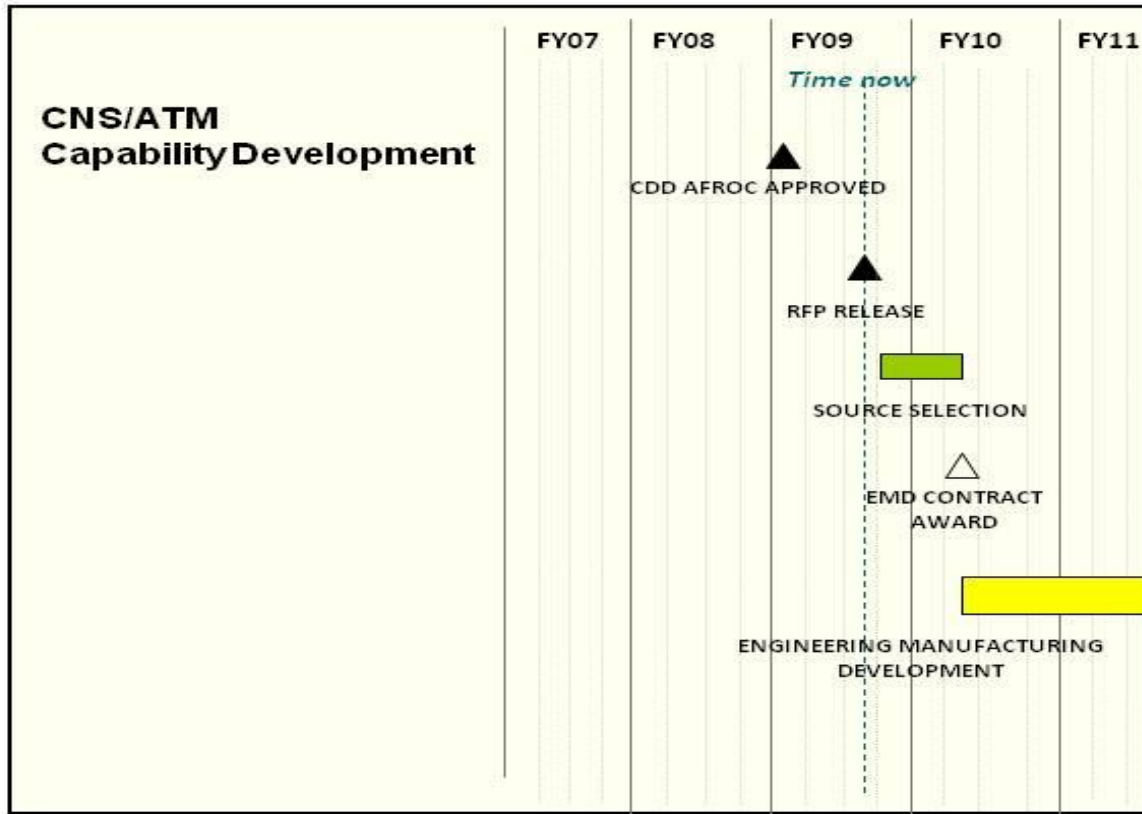
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KC-10 CNS/ATM Program Schedule (FY10.5 PB)



As of: 15 Apr 09

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Exhibit R-4 (PE 0401219F)

Project 5195

Exhibit R-4a, RDT&E Schedule Detail

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PROJECT NUMBER AND TITLE

5195 Aircraft Modernization Program
(AMP)

(U) Schedule Profile

(U) Capabilities Development Document (CDD) AFROCC Approved

(U) Engineering Manufacturing Development (EMD) RFP Release

(U) Source Selection

(U) EMD Contract Award/Milestone B

FY 2008

FY 2009

FY 2010

1Q

2Q

4Q

1-2Q

2Q

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