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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force	DATE: February 2011
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APPROPRIATION/BUDGET ACTIVITY				R-1 ITEM NOMENCLATURE							
3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				PE 0401218F: KC-135s							
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	11.832	20.453	6.161	-	6.161	-	-	-	-	Continuing	Continuing
674494: <i>KC-135 Aging Aircraft Program</i>	0.800	-	-	-	-	-	-	-	-	Continuing	Continuing
675261: <i>KC-135 Upgrades</i>	11.032	20.453	6.161	-	6.161	-	-	-	-	Continuing	Continuing

A. Mission Description and Budget Item Justification

KC-135 Upgrades (675261)

KC-135 CNS/ATM (Block 45) program – Block 45 addresses obsolescence, reliability and maintainability issues currently experienced by the KC-135 fleet. Funding supports a modification program performing analysis, testing, software development, prototyping, documenting source-data, and integration of a new Digital Flight Director (DFD), Radio Altimeter (RA), Autopilot (AP) and Electronic Engine Instrument Displays (EEID).

This program has associated APAF funding in Program Elements 0401218F and 0401897F.

The program funding includes reductions for Overhead Reduction efficiencies that are not intended to impact program content. The efficiency reductions total \$0.029M in FY12.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

KC-135 Podded Large Aircraft Infrared Countermeasures (LAIRCM) – KC-135 aircraft have no defensive capability against the Man Portable Air Defense System (MANPADS) threat. LAIRCM is an evolutionary acquisition program that provides significantly improved defensive systems capability for DoD aircraft to counter the infrared (IR) MANPADS missile threat.

This program is a temporary modification to one Air Reserve Component (ARC) KC-135 to perform an Operational Utility Evaluation (OUE) of a Department of Homeland Security (DHS) developed podded LAIRCM system that was originally installed on a commercial-variant aircraft. The intent of this modification program is to conduct an OUE to evaluate system suitability to meet Air Expeditionary Force (AEF) mission requirements. The contractor is providing all hardware and software at no cost to facilitate the OUE. Funding will be utilized to support aircraft modification, de-modification, and test and evaluation activities. Air Mobility Command (AMC) requirements for this effort are documented in AMC AF 1067, 09-039, dated 15 Dec 09.

KC-135 Aging Aircraft Program (674494)

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APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401218F: KC-135s
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This program supports projects to keep the KC-135 viable for the future. In FY10, Congress added funds to deploy advanced ultrasonic robotic inspection techniques that may dramatically reduce the time required to inspect aircraft for defects. The deployment of the ultrasonic robotic inspection technology will provide significantly improved identification and characterization of defects. This effort will support the KC-135 until the planned fleet retirement of 2040.

B. Program Change Summary (\$ in Millions)	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012 Base</u>	<u>FY 2012 OCO</u>	<u>FY 2012 Total</u>
Previous President's Budget	11.832	20.453	6.211	-	6.211
Current President's Budget	11.832	20.453	6.161	-	6.161
Total Adjustments	-	-	-0.050	-	-0.050
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-	-0.050	-	-0.050

Change Summary Explanation

- Program received Congressional add of \$800K in FY10 to further develop autonomous robotic inspection technologies.

- FY12 reduction is an inflation cut (non-pay, non-fuel, purchases).

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force								DATE: February 2011			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0401218F: KC-135s				PROJECT 674494: <i>KC-135 Aging Aircraft Program</i>			
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
674494: <i>KC-135 Aging Aircraft Program</i>	0.800	-	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		
A. Mission Description and Budget Item Justification <p>This program supports projects to keep the KC-135 viable for the future. In FY10, Congress added funds to procure equipment that will enable the Air Force to deploy advanced ultrasonic robotic inspection techniques that may dramatically reduce the time required to inspect aircraft for defects. The deployment of the ultrasonic robotic inspection technology will provide significantly improved identification and characterization of defects. This effort will support the KC-135 until the planned fleet retirement of 2040.</p>											
B. Accomplishments/Planned Programs (\$ in Millions)							FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Autonomous Robotic Inspection Description: Earmark to further advance the semi autonomous robotic inspection to a fully autonomous robotic inspection FY 2010 Accomplishments: Funds support the further development of fully autonomous robotic inspection technology for the KC-135 aircraft. FY 2011 Plans: FY 2012 Base Plans: FY 2012 OCO Plans:							0.800	-	-	-	-
Accomplishments/Planned Programs Subtotals							0.800	-	-	-	-
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• N/A: .	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
D. Acquisition Strategy <p>This effort will advance the semi autonomous robotic inspection to a fully autonomous robotic inspection</p>											

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401218F: <i>KC-135s</i>	PROJECT 674494: <i>KC-135 Aging Aircraft Program</i>

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force											DATE: February 2011		
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0401218F: KC-135s				PROJECT 674494: <i>KC-135 Aging Aircraft Program</i>					

Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Phase two	TBD	Not specified.;	-	-	Sep 2011	-		-		-	0.000	0.000	0.000
Subtotal			-	-		-		-		-	0.000	0.000	0.000

Remarks
This project will further develop autonomous ultrasonic robotic inspection technology techniques to support the KC-135 aircraft.

Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			-	-		-		-		-	0.000	0.000	0.000

Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			-	-		-		-		-	0.000	0.000	0.000

Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			-	-		-		-		-	0.000	0.000	0.000

			Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total		Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			-	-		-		-		-	0.000	0.000	0.000	

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401218F: <i>KC-135s</i>	PROJECT 674494: <i>KC-135 Aging Aircraft Program</i>

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401218F: <i>KC-135s</i>	PROJECT 674494: <i>KC-135 Aging Aircraft Program</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Statement of Work	4	2010	2	2011
Market Research	2	2011	2	2011
Post RFP	2	2011	2	2011
Source Selection	2	2011	3	2011
Legal/Business Clearance	3	2011	4	2011
Contract Award	4	2011	4	2011

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force								DATE: February 2011			
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 7: Operational Systems Development				R-1 ITEM NOMENCLATURE PE 0401218F: KC-135s				PROJECT 675261: KC-135 Upgrades			
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
675261: KC-135 Upgrades	11.032	20.453	6.161	-	6.161	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		
A. Mission Description and Budget Item Justification											
KC-135 CNS/ATM (Block 45) program – Block 45 addresses obsolescence and reliability and maintainability issues currently experienced by the KC-135 fleet. Funding supports a modification program performing analysis, testing, software development, prototyping, documenting source-data, and integration of a new Digital Flight Director (DFD), Radio Altimeter (RA), Autopilot (AP) and Electronic Engine Instrument Displays (EEID).											
This program has associated APAF funding in Program Element 0401218F.											
KC-135 Podded Large Aircraft Infrared Countermeasures (LAIRCM) – KC-135 has no defensive capability against the Man Portable Air Defense System (MANPADS) threat. LAIRCM is an evolutionary acquisition program that provides significantly improved defensive systems capability for DoD aircraft to counter the infrared (IR) MANPADS missile threat. KC-135 Podded LAIRCM is a temporary modification to one Air Reserve Component (ARC) KC-135 to perform an Operational Utility Evaluation (OUE) of a Department of Homeland Security (DHS) developed podded LAIRCM system that was originally installed on a commercial-variant aircraft. The intent of this modification program is to conduct an OUE to evaluate system suitability to meet Air Expeditionary Force (AEF) mission requirements. The contractor is providing all hardware and software at no cost to facilitate the OUE. Funding will be utilized to support aircraft modification, de-modification, and test and evaluation activities. AMC requirement for this effort is documented in AMC AF 1067, 09-039, dated 15 Dec 09.											
The program funding includes reductions for Overhead Reduction efficiencies that are not intended to impact program content. The efficiencies reductions total \$0.029M in FY12.											
B. Accomplishments/Planned Programs (\$ in Millions)							FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Block 45 Engineering Manufacturing Development (EMD)							9.836	20.453	6.161	-	6.161
Description: Non-Recurring Engineering and test efforts/tasks for all Block 45 sub programs											
FY 2010 Accomplishments: Finish system design to include draft engineering technical data, verify technical problems and design anomalies that have been resolved without compromising system performance, reliability and safety to be verified during Critical Design Review (CDR). Modify the System Integration Laboratory (SIL) and conduct initial system software dry-run testing. Begin production of prototype aircraft and operational flight trainer (OFT) hardware and kits. Start developing the Modification Airworthiness Certification Criteria (MACC), Technical Orders											

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011		
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 7: Operational Systems Development		R-1 ITEM NOMENCLATURE PE 0401218F: KC-135s		PROJECT 675261: KC-135 Upgrades	
B. Accomplishments/Planned Programs (\$ in Millions)					
	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
(TO) and training materials for both maintenance and aircrew training. Continue integration and verification of software requirements and processes to achieve desired design.					
FY 2011 Plans: Complete Formal Qualification Test of system software on SIL producing "Red Label" (Contractor's Software given to the Government for Verification Testing) software to support Developmental Testing followed by "Black Label" (Final Software with all changes incorporated) software to support Low Rate Initial Production and Operational Testing. Finish aircraft prototype kit development and install kits on two test aircraft. Initiate formal ground testing at contractors facilities followed by flight testing at Edwards AFB.					
FY 2012 Base Plans: Complete flight testing at Edwards AFB. Finalize Technical Orders (TOs), engineering technical data, and training development. Conduct aircrew and maintenance type 1 (contractor-run for initial cadre versus USAF-run) training for both developmental and operational test crews. Complete the MACC, CNS/ATM compliance report and all reports and data required to support operational and airworthiness certification.					
FY 2012 OCO Plans:					
Title: Podded LAIRCM					
Description: Test and Evaluation efforts for the DHS developed podded LAIRCM system only.					
FY 2010 Accomplishments: Temporarily modify one KC-135 to accommodate the Department of Homeland Security (DHS) previously-developed podded LAIRCM system. Perform an Operational Utility Evaluation (OUE) to evaluate system suitability for KC-135 AEF mission requirements. Restore aircraft to its previous configuration.					
FY 2011 Plans:					
FY 2012 Base Plans:					
FY 2012 OCO Plans:					
Accomplishments/Planned Programs Subtotals					
	11.032	20.453	6.161	-	6.161

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401218F: KC-135s	PROJECT 675261: <i>KC-135 Upgrades</i>	

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

<u>Line Item</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u> <u>Base</u>	<u>FY 2012</u> <u>OCO</u>	<u>FY 2012</u> <u>Total</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PE 0401218F: KC-135 APAF BA 5	0.000	8.394	31.118	0.000	31.118	42.701	48.568	52.495	64.992	Continuing	Continuing

D. Acquisition Strategy

Block 45 - The strategy is a sole-source contract with Rockwell Collins to accomplish the task of performing analysis, testing, software development, prototypes, documentation of source data, and integrating a new Digital Flight Director (DFD), digital Autopilot (AP), digital Radar Altimeter (RA), and Electronic Engine Instrument Display (EEID). Rockwell Collins will be responsible for acquiring the necessary information and personnel to integrate each item stated above into the KC-135 legacy systems and for developing and subcontracting the components.

KC-135 Podded Large Aircraft Infrared Countermeasures (LAIRCM) – The intent of this program is to conduct an OUE to evaluate a commercial system's suitability to meet Air Expeditionary Force (AEF) mission requirements. The contractor is providing all hardware and software at no cost to facilitate the OUE. Funding will be utilized to support aircraft modification, de-modification and test and evaluation activities.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force											DATE: February 2011			
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 7: Operational Systems Development				R-1 ITEM NOMENCLATURE PE 0401218F: KC-135s				PROJECT 675261: KC-135 Upgrades						
Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
Block 45 - NRE, engineering, development, and prototype	SS/TBD	Rockwell Collins:Cedar Rapids, IA	15.515	16.000	Nov 2010	3.800	Nov 2011	-		3.800	0.000	35.315	33.860	
Subtotal			15.515	16.000		3.800		-		3.800	0.000	35.315	33.860	
Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
Block 45 Program Office Support	Various	Various:Various,	3.167	0.450		-		-		-	0.000	3.617	0.000	
LAIRCM Installation/Removal	Various	Various:Various,	0.120	-		-		-		-	0.000	0.120	0.000	
Subtotal			3.287	0.450		-		-		-	0.000	3.737	0.000	
Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
Block 45 developmental ground and flight test	PO	418 FTS:Edwards AFB, CA	0.421	2.667	Nov 2010	1.922	Nov 2011	-		1.922	0.000	5.010	0.000	
LAIRCM ground and flight test	PO	418 FTS:Edwards AFB, CA	0.950	-		-		-		-	0.000	0.950	0.000	
Subtotal			1.371	2.667		1.922		-		1.922	0.000	5.960	0.000	
Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
Block 45 Management Services	Various	OC-ALC/ GKCMB:Tinker AFB, OK	1.853	1.336		0.439		-		0.439	0.000	3.628	0.000	
	Various		0.126	-		-		-		-	0.000	0.126	0.000	

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force											DATE: February 2011		
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0401218F: KC-135s				PROJECT 675261: <i>KC-135 Upgrades</i>					

Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
LAIRCM Management Services		OC-ALC/ GKCMB:Tinker AFB, OK											
Subtotal			1.979	1.336		0.439		-		0.439	0.000	3.754	0.000

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	22.152	20.453		6.161		-		6.161	0.000	48.766	33.860

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401218F: <i>KC-135s</i>	PROJECT 675261: <i>KC-135 Upgrades</i>

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401218F: <i>KC-135s</i>	PROJECT 675261: <i>KC-135 Upgrades</i>

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0401218F: <i>KC-135s</i>	PROJECT 675261: <i>KC-135 Upgrades</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Blk 45 Engineering Manufacturing Development (EMD) Phase I	1	2010	4	2010
Blk 45 System Functional Review	2	2010	2	2010
Blk 45 Preliminary Design Review	3	2010	3	2010
Blk 45 Critical Design Review	4	2010	4	2010
Blk 45 EMD Phase II	1	2011	4	2011
Blk 45 Critical Design Review Assessment	1	2011	1	2011
Blk 45 Prototype installation	2	2011	4	2011
Blk 45 Developmental Test and Evaluation	4	2011	3	2012
Podded LAIRCM Installation/Removal	3	2010	3	2011
Podded LAIRCM Test and Evaluation - Edwards AFB, CA	2	2011	3	2011

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