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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 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305207F: <i>Manned Reconnaissance System</i>
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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	18.884	15.337	13.049	-	13.049	13.291	13.491	13.685	13.926	Continuing	Continuing
674754: <i>COBRA BALL</i>	18.884	15.337	13.049	-	13.049	13.291	13.491	13.685	13.926	Continuing	Continuing

A. Mission Description and Budget Item Justification

The RC-135 Operational Systems Development and enhancement activities project supports design studies, engineering analysis, non-recurring engineering, and other efforts associated with the integration and modification of the RC-135 programs and their specialized mission systems - both air and ground. Extensive utilization of commercial-off the-shelf (COTS) based solutions allows rapid fielding of needed capabilities through continuous technology refresh cycles and diminishing manufacturing sources (DMS)/vanishing vendor items (VVI) logistics mitigation efforts. The results of these efforts provide for preliminary assessments of technical feasibility, operability, or military utility as well as specific engineering implementations for integration into the various systems baseline configurations. These activities are managed by the Air Force through the 645th Aeronautical System Group (645 AESG, a.k.a. BIG SAFARI Program Office), Aeronautical Systems Center, Air Force Materiel Command, Wright Patterson AFB, OH. BIG SAFARI manages engineering, ground and support system modifications, integration, flight testing, product assurance, acceptance testing, logistics, and training activities. Aircraft, aircraft sensor systems, and associated ground support system engineering planned for FY12 include support for two distinct RC-135V/W RIVET JOINT configurations [Baselines 10 & 11], two distinct RC-135U COMBAT SENT configurations [Baselines 4 & 5] and two distinct RC-135S COBRA BALL configurations [Baselines 4 & 5]. The world-wide challenge of keeping pace against technologically agile targets used by both nation and non-nation-state adversaries and the rapid evolution of COTS technologies demands a responsive and adaptive acquisition strategy for fielding 'baseline capabilities' that are logistically supportable at all locations. The BIG SAFARI program office uses an incremental 'baseline' strategy to mitigate risk, find affordable solutions and field needed capabilities. Obsolescence and DMS/VVI are addressed with each baseline upgrade as well as annually as part of the sustainment responsibilities. Activities also include studies and analysis to support both current program planning and execution and future program planning. This program is in Budget Activity 7, Operational Systems 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 fielding in the current or subsequent fiscal year.

B. Program Change Summary (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	14.846	15.337	13.092	-	13.092
Current President's Budget	18.884	15.337	13.049	-	13.049
Total Adjustments	4.038	-	-0.043	-	-0.043
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	4.100	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-0.062	-	-0.043	-	-0.043

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<p><u>Congressional Add Details (\$ in Millions, and Includes General Reductions)</u></p> <p>Project: 674754: <i>COBRA BALL</i></p> <p style="padding-left: 40px;">Congressional Add: <i>Communications Systems Development</i></p>	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th style="padding: 5px;">FY 2010</th> <th style="padding: 5px;">FY 2011</th> </tr> <tr> <td style="padding: 5px;">1.938</td> <td style="padding: 5px;">-</td> </tr> <tr> <td style="padding: 5px;">1.938</td> <td style="padding: 5px;">-</td> </tr> <tr> <td style="padding: 5px;">1.938</td> <td style="padding: 5px;">-</td> </tr> </table>	FY 2010	FY 2011	1.938	-	1.938	-	1.938	-
FY 2010	FY 2011								
1.938	-								
1.938	-								
1.938	-								

Congressional Add Subtotals for Project: 674754

Congressional Add Totals for all Projects

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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 0305207F: Manned Reconnaissance System				PROJECT 674754: COBRA BALL			
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
674754: COBRA BALL	18.884	15.337	13.049	-	13.049	13.291	13.491	13.685	13.926	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		
A. Mission Description and Budget Item Justification											
<p>The RC-135 Operational Systems Development and enhancement activities project supports design studies, engineering analysis, non-recurring engineering, and other efforts associated with the integration and modification of the RC-135 programs and their specialized mission systems - both air and ground. Extensive utilization of commercial-off the-shelf (COTS) based solutions allows rapid fielding of needed capabilities through continuous technology refresh cycles and diminishing manufacturing sources (DMS)/vanishing vendor items (VVI) logistics mitigation efforts. The results of these efforts provide for preliminary assessments of technical feasibility, operability, or military utility as well as specific engineering implementations for integration into the various systems baseline configurations. These activities are managed by the Air Force through the 645th Aeronautical System Group (645 AESG, a.k.a. BIG SAFARI Program Office), Aeronautical Systems Center, Air Force Materiel Command, Wright Patterson AFB, OH. BIG SAFARI manages engineering, ground and support system modifications, integration, flight testing, product assurance, acceptance testing, logistics, and training activities. Aircraft, aircraft sensor systems, and associated ground support system engineering planned for FY12 include support for two distinct RC-135V/W RIVET JOINT configurations [Baselines 10 & 11], two distinct RC-135U COMBAT SENT configurations [Baselines 4 & 5] and two distinct RC-135S COBRA BALL configurations [Baselines 4 & 5]. The world-wide challenge of keeping pace against technologically agile targets used by both nation and non-nation-state adversaries and the rapid evolution of COTS technologies demands a responsive and adaptive acquisition strategy for fielding 'baseline capabilities' that are logistically supportable at all locations. The BIG SAFARI program office uses an incremental 'baseline' strategy to mitigate risk, find affordable solutions and field needed capabilities. Obsolescence and DMS/VVI are addressed with each baseline upgrade as well as annually as part of the sustainment responsibilities. Activities also include studies and analysis to support both current program planning and execution and future program planning. This program is in Budget Activity 7, Operational Systems 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 fielding in the current or subsequent fiscal year.</p>											
B. Accomplishments/Planned Programs (\$ in Millions)							FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Baseline Configuration Development							12.846	15.337	13.049	-	13.049
Description: Non-recurring engineering (NRE) for Baseline system developments and enhancements to improve mission capabilities											
FY 2010 Accomplishments: Supported design studies, engineering analysis, NRE and other efforts associated with the development and integration of electronic signals collection/processing (CORVUS) and suite of core communications exploitation applications (Digital Multi-thread Collection Architecture or DMCA), and those avionics and communication											

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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 0305207F: Manned Reconnaissance System		PROJECT 674754: COBRA BALL	
B. Accomplishments/Planned Programs (\$ in Millions)					
	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
subsystems requiring DMS/VVI mitigations as a result of MOD/PDM efforts for the following RC-135 variants: RIVET JOINT Baseline 10, COBRA BALL and COMBAT SENT Baseline 4 configurations.					
FY 2011 Plans: Continue to support design studies, engineering analysis, NRE and other efforts associated with the integration and modification of the RC-135 programs (RJ BL-10, CS BL-4, and CB BL-4) and their specialized mission systems for the collection of both air and ground signals.					
FY 2012 Base Plans: Will support design studies, engineering analysis, NRE and other efforts associated with the integration and modification of the RC-135 programs (RJ BL-11, CS BL-5, and CB BL-5) and their specialized mission systems for the collection of both air and ground signals					
FY 2012 OCO Plans:					
Title: Collection Systems Development					
Description: Liquid cooling NRE and CORVUS development					
FY 2010 Accomplishments: Initiated the non-recurring engineering for a liquid cooling system on the RC-135S COBRA BALL mission system and development of the CORVUS digital sensor analysis system initially slated for the RC-135V/W RIVET JOINT mission system and will eventually migrate to the other two RC-135 variants.					
FY 2011 Plans:					
FY 2012 Base Plans:					
FY 2012 OCO Plans:					
Accomplishments/Planned Programs Subtotals	4.100	-	-	-	-
	16.946	15.337	13.049	-	13.049
	FY 2010	FY 2011			
Congressional Add: Communications Systems Development	1.938	-			

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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 0305207F: Manned Reconnaissance System				PROJECT 674754: COBRA BALL			
								FY 2010	FY 2011		
FY 2010 Accomplishments: Initiate the development of a Service Oriented Architecture which allows for data sharing between AF DCGS and the RC-135 platforms											
FY 2011 Plans:											
Congressional Adds Subtotals								1.938	-		
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
• APAF: PE 0305207F, Manned Reconnaissance Systems	161.649	149.582	202.080	0.000	202.080	210.722	218.112	221.462	225.694	Continuing	Continuing
• OPAF: PE 0305207F, Manned Reconnaissance Systems	23.062	23.296	23.341	0.000	23.341	24.176	24.528	24.929	25.376	Continuing	Continuing
• O&M: PE 0305207F, Manned Reconnaissance Systems	477.261	269.198	358.037	114.767	472.804	329.753	335.764	350.514	357.365	Continuing	Continuing
D. Acquisition Strategy											
The RC-135 RIVET JOINT, COBRA BALL, and COMBAT SENT aircraft are maintained and baseline / incremental upgrades and quick reaction capabilities (QRC) developments are acquired through the 645th Aeronautical Systems Group (BIG SAFARI Program Office) in accordance with the BIG SAFARI Program Management Directive (PMD), and the BIG SAFARI Class Justification and Approval (J&A) document for acquisition of supplies and services using other than full and open competition criteria. The supplies and services procured by 645 AESG under their J&A to satisfy National Security (FAR 6.302-6) requirements are supported by the BIG SAFARI Life Cycle Management Plan (LCMP) across the full spectrum of system life cycle management from developmental engineering to system retirement ("cradle to grave" support). Due to the rapidly changing threat environment encountered during our prolonged commitment to Overseas Contingency Operations (OCO), the acquisition program manager has the authority to redirect funding as necessary to meet current stated and emerging Combatant Commander requirements.											
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		
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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
L-3 Communications	SS/Various	L-3 Com:Greenville, TX	18.884	15.337	Dec 2010	13.049	Dec 2011	-		13.049	Continuing	Continuing	TBD
Subtotal			18.884	15.337		13.049		-		13.049			

Remarks
All activity is based around the Programmed Depot Maintenance (PDM) airframe schedule which includes multiple contracts and organizations with overlapping and continuous periods of performance. Due to the rapidly changing threat environment encountered during our prolonged commitment to Overseas Contingency Operations (OCO), the acquisition program manager has the authority to redirect funding as necessary to meet current stated and emerging Combatant Commander requirements.

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			18.884	15.337		13.049		-		13.049			

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force			DATE: February 2011
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Development, integration and test of RIVET JOINT Baseline 10	1	2010	1	2012
Development, integration and test of RIVET JOINT Baseline 11	2	2010	3	2014
Integration and test of COMBAT SENT Baseline 4	1	2010	1	2011
Development, integration and test of COMBAT SENT Baseline 5	4	2011	2	2016
Integration and test of COBRA BALL Baseline 4	1	2010	2	2010
Development, integration and test of COBRA BALL Baseline 5	4	2011	1	2016

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