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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Air Force										Date: February 2015		
Appropriation/Budget Activity 3600: Research, Development, Test & Evaluation, Air Force I BA 7: Operational Systems Development					R-1 Program Element (Number/Name) PE 0305207F I Manned Reconnaissance Systems							
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	13.491	13.516	13.245	-	13.245	14.184	14.366	14.462	14.720	Continuing	Continuing
674754: RC-135 Systems	-	13.491	13.516	13.245	-	13.245	14.184	14.366	14.462	14.720	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

The RC-135 operational systems development and enhancement activities support the 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). The SPO manages engineering, ground and support systems modifications, integration, flight testing, product assurance, acceptance testing, logistics, and training activities.

Aircraft, sensor systems, and associated ground support system engineering planned for FY 2016 include support for the RC-135V/W RIVET JOINT Baseline 12 and 13, the RC-135U COMBAT SENT Baseline 5, and the RC-135S COBRA BALL Baseline 5 configurations. 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. BIG SAFARI uses an incremental baseline strategy to mitigate risk, find affordable solutions and field needed capabilities on the aircraft and ground support and training systems. Obsolescence and DMS/VVI logistical concerns are addressed with each baseline upgrade strategy and annually as part of the fleet sustainment responsibilities.

RIVET JOINT Baseline 12 upgrades consist of, but are not limited to, increased digital signal exploitation, increased digital signal recorder bandwidth, enhanced spatial processing/exploitation, enhanced weather radar, digitally enhanced electronic flight instrument system (EFIS), AF-DCGS interoperability, operator work station 3-D map projection, enhanced operator reporting management tools, modernized communications security (COMSEC) protocols, and a new steerable beam antenna. RIVET JOINT Baseline 13 upgrades consist of, but are not limited to, providing a continuous recording capability, Super Wideband Compressive Receiver (SWCR) and Nyquist Folding Receiver (NYFR), global air traffic management (GATM) avionics upgrades (e.g. new autopilot), Mode 5 identify friendly or foe (IFF) system, and family of beyond-line-of-sight terminals (FAB-T) advanced extremely high frequency (AEHF) communications suite.

COMBAT SENT Baseline 5 upgrades consist of, but are not limited to, continued Communications, Navigation and Surveillance/Air Traffic Management (CNS/ATM) and Required Navigational Performance (RNP) compliant cockpit avionics enhancements, active ranging and theater networked geo-location (TNG) capability, Proforma search and classification tools, cooling duct and lighting improvements, CORVUS related precision electronic intelligence (ELINT) SWCR enhancements, RJ Baseline 13 communications intelligence (COMINT), upgraded computer architecture, primary sensor measurement system (PRISMS), wideband global satellite (WGS)

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communications enhanced integration, development of an airborne tracking system, and communications upgrade to include Multifunctional Information Distribution System Joint Tactical Radio System (MIDS-J).						
COBRA BALL Baseline 5 upgrades consist of, but are not limited to, RJ Baseline 11 COMINT, Medium-Wave Infra-Red Acquisition (MIRA) sensor/processor upgrade, measurements and signature intelligence (MASINT) Collection System (MCS) optical upgrade, WGS communications enhanced integration, communications upgrades to include MIDS-J and an intercom system (FORCE), U-Band antenna, continued CNS/ATM and RNP compliant cockpit avionics enhancements and foreign instrumentation intelligence (FISINT) system refresh.						
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 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget		13.491	13.516	13.767	-	13.767
Current President's Budget		13.491	13.516	13.245	-	13.245
Total Adjustments		-	-	-0.522	-	-0.522
• Congressional General Reductions		-	-			
• Congressional Directed Reductions		-	-			
• Congressional Rescissions		-	-			
• Congressional Adds		-	-			
• Congressional Directed Transfers		-	-			
• Reprogrammings		-	-			
• SBIR/STTR Transfer		-	-			
• Other Adjustments		-	-	-0.522	-	-0.522
C. Accomplishments/Planned Programs (\$ in Millions)				FY 2014	FY 2015	FY 2016
Title: Baseline Configuration Development				13.491	13.516	13.245
Description: Non-recurring engineering (NRE) for Baseline system developments and enhancements to improve mission capabilities of the RIVET JOINT Baselines 12 and 13 (BL-12 and BL-13), COMBAT SENT Baseline 5 (BL-5) and COBRA BALL Baseline 5 (BL-5)						
FY 2014 Accomplishments:						

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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>										<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
Supported design studies, engineering analysis, NRE and other efforts associated with the integration and modification of the RC-135 programs (RJ BL-12 and BL-13, CS BL-5, and CB BL-5) and their specialized mission systems for the collection of both air and ground signals.												
<b>FY 2015 Plans:</b> Continue to support design studies, engineering analysis, NRE and other efforts associated with the integration and modification of the RC-135 programs and their specialized mission systems for the collection of both air and ground signals.												
<b>FY 2016 Plans:</b> Will continue to support design studies, engineering analysis, NRE and other efforts associated with the integration and modification of the RC-135 programs and their specialized mission systems for the collection of both air and ground signals.												
<b>Accomplishments/Planned Programs Subtotals</b>										13.491	13.516	13.245
<b>D. Other Program Funding Summary (\$ in Millions)</b>												
<b>Line Item</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	
• APAF: BA05: DARP01: <i>Modification of Inservice Aircraft</i>	174.513	152.746	156.165	-	156.165	199.323	202.851	186.275	189.628	Continuing	Continuing	
• APAF: BA06: DARP01: <i>Aircraft Spares and Repair Parts</i>	28.280	57.119	54.106	-	54.106	48.632	49.407	50.331	51.237	Continuing	Continuing	
• OPAF: BA04: 846070: <i>Defense Airborne Recce Projects (DARP) RC-135</i>	20.577	24.710	25.237	-	25.237	25.700	26.153	26.620	27.099	Continuing	Continuing	
• RDT&E: BA07: PE 0304260F: <i>RC-135 Airborne SIGINT Enterprise Development</i>	29.331	15.007	28.025	-	28.025	34.436	46.972	51.864	58.852	Continuing	Continuing	
<b>Remarks</b>												
<b>E. Acquisition Strategy</b> The RC-135 RIVET JOINT, COBRA BALL, and COMBAT SENT configured aircraft are maintained and kept technologically relevant through a baseline or incremental upgrade acquisition strategy. Technology refresh and quick reaction capability (QRC) developments are acquired through the 645th AESG in accordance with the BIG SAFARI Program Management Directive (PMD) and Class Justification and Approval (J&A) document for acquisition of supplies and services using an "other than full and open competition" criteria. The supplies and services procured by 645 AESG satisfy National Security requirements (FAR 6.302-6) through the use of their standing J&A or address Unusual and Compelling Urgency requirements (FAR 6.302-2) through an individually prepared J&A supported by the BIG SAFARI Life Cycle												

**UNCLASSIFIED**

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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 (COCOM) and/or Intelligence Community (IC) requirements.		
<b>F. Performance Metrics</b> 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.		

**UNCLASSIFIED**

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force												Date: February 2015			
Appropriation/Budget Activity 3600 / 7						R-1 Program Element (Number/Name) PE 0305207F / <i>Manned Reconnaissance Systems</i>				Project (Number/Name) 674754 / <i>RC-135 Systems</i>					
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Aircraft Modifications	SS/ Various	L-3 Com : Greenville, TX	-	13.491	Dec 2013	13.516	Dec 2014	13.245	Dec 2015	-		13.245	Continuing	Continuing	TBD
Subtotal			-	13.491		13.516		13.245		-		13.245	-	-	-
Remarks															
All activity is based around the Programmed Depot Maintenance (PDM) airframe and missions systems 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 COCOM and/or IC requirements.															
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			-	-		-		-		-		-	-	-	-
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			-	-		-		-		-		-	-	-	-
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			-	-		-		-		-		-	-	-	-
			Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			-	13.491		13.516		13.245		-		13.245	-	-	-

**UNCLASSIFIED**

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<b>Appropriation/Budget Activity</b> 3600 / 7			<b>R-1 Program Element (Number/Name)</b> PE 0305207F / <i>Manned Reconnaissance Systems</i>			<b>Project (Number/Name)</b> 674754 / <i>RC-135 Systems</i>				
	<b>Prior Years</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>	
<b>Remarks</b> RC-135 Program Manager has determined that PMA will be funded with RIVET JOINT APAF appropriation and included in the P-Doc, Mod 4263.										

**UNCLASSIFIED**

<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2016 Air Force			<b>Date:</b> February 2015		
<b>Appropriation/Budget Activity</b> 3600 / 7		<b>R-1 Program Element (Number/Name)</b> PE 0305207F / <i>Manned Reconnaissance Systems</i>			<b>Project (Number/Name)</b> 674754 / <i>RC-135 Systems</i>

	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
RIVET JOINT Baseline 10 Fielding																												
RIVET JOINT Baseline 11 Integration, Test and Fielding																												
RIVET JOINT Baseline 12 Development, Integration, Test and Fielding																												
RIVET JOINT Baseline 13 Development, Integration, Test and Fielding																												
COMBAT SENT Baseline 5 Development, Integration, Test and Fielding																												
COMBAT SENT Baseline 6 Development, Integration and Test																												
COBRA BALL Baseline 4 Fielding																												
COBRA BALL Baseline 5 Development, Integration, Test and Fielding																												
COBRA BALL Baseline 6 Development, Integration and Test																												
Ground Systems Baseline 11 Integration and Test																												
Ground Systems Baseline 12 Integration and Test																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Air Force			Date: February 2015
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0305207F / Manned Reconnaissance Systems	Project (Number/Name) 674754 / RC-135 Systems	

## Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
RIVET JOINT Baseline 10 Fielding	1	2014	1	2014
RIVET JOINT Baseline 11 Integration, Test and Fielding	1	2014	1	2017
RIVET JOINT Baseline 12 Development, Integration, Test and Fielding	1	2014	1	2020
RIVET JOINT Baseline 13 Development, Integration, Test and Fielding	3	2016	4	2020
COMBAT SENT Baseline 5 Development, Integration, Test and Fielding	1	2014	1	2018
COMBAT SENT Baseline 6 Development, Integration and Test	2	2018	4	2020
COBRA BALL Baseline 4 Fielding	1	2014	2	2014
COBRA BALL Baseline 5 Development, Integration, Test and Fielding	1	2014	3	2019
COBRA BALL Baseline 6 Development, Integration and Test	3	2018	4	2020
Ground Systems Baseline 11 Integration and Test	1	2014	2	2014
Ground Systems Baseline 12 Integration and Test	2	2017	3	2017