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Exhibit R-2, RDT&E Budget Item Justification: FY 2018 Air Force										Date: May 2017		
Appropriation/Budget Activity 3600: Research, Development, Test & Evaluation, Air Force I BA 7: Operational Systems Development					R-1 Program Element (Number/Name) PE 0207253F I Compass Call							
COST (\$ in Millions)	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
Total Program Element	-	32.024	23.923	14.040	0.000	14.040	14.006	16.007	16.002	16.040	Continuing	Continuing
674804: Compass Call	-	32.024	23.923	14.040	0.000	14.040	14.006	16.007	16.002	16.040	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

COMPASS CALL is the USAF's wide-area, airborne Command and Control Warfare/Information Operations (C2W /IO) weapon system. The employment of this system interdicts adversary's use of the electronic battlespace and is a key active component in the information battlespace and prosecution of Overseas Contingency Operations (OCO). COMPASS CALL's sophisticated electronic combat system is capable of surgical denial or disruption of adversary radio frequency (RF) communications systems and sensors. The system was fielded in 1983 and to date has evolved through the fielding of the Baseline 2 (BL2) configuration and the mid-Baseline 2 (MBL2) enhancements. BL2 configuration and MBL2 enhancements currently being fielded have advanced COMPASS CALL's electronic attack capabilities significantly over the two previously fielded baselines (BL0 and BL1). Due to the rapid advances in electronic attack technology, COMPASS CALL was designed to be easily modified and must continue to modernize and evolve to keep pace with adversary tactics and emerging technologies. Continuous system development is required to maintain battlespace superiority. The two COMPASS CALL Mission Crew Simulators (CCMCS #1 and CCMCS #2) are upgraded per the Baseline schedule to ensure training capacity keeps pace and matches the operational and technological upgrades delivered in the fielded aircraft. The Weapons System Trainer (WST) mirrors the capabilities of the fielded aircraft's cockpit avionics and communications equipment as well to ensure training requirements provide the worldwide operational proficiency needed to comply with continually evolving communications, navigation, surveillance/air traffic management (CNS/ATM) and required navigation performance (RNP) enhancements, parameters, and guidance.

The COMPASS CALL program employs an incremental development and fielding strategy that puts capability into the warfighter's hands as soon as practical and ensures each iteration of the weapon system is effective against the highest priority threats. To sustain that process requires a steady stream of system development funds. Development funds are required to accomplish subsystem additions and improvements such as the digital signal analysis and exciter subsystem (AXE), the third generation of Special Purpose Emitter Array (SPEAR), new modern communications receiver technologies, new IR and counter radar technologies, the Human-to-Machine Interface (HMI), digital cockpit avionics with multi-function displays (a.k.a. glass cockpits), network centric operations, phased array transmit and receive apertures and other classified hardware, firmware and software developments necessary to counter military and commercial communications evolutions, command and control operations enhancements, and new/emerging sensor developments.

FY 2018 RDT&E efforts will concentrate on support for Baseline 3 (BL3) prime mission equipment (PME) upgrades, integration of BL3 PME into a new platform, and ground systems/simulators. The programmed BL3 upgrades will advance the PME capabilities as the 2018 development efforts address the evolving electronic attack requirement for the foreseeable future. Obsolescence and diminishing manufacturing sources (DMS)/Vanishing Vendor Items (VVI) are addressed with each baseline upgrade/enhancement as well as annually as part of the sustainment responsibilities. FY 2018 RDT&E efforts include studies and analyses to support current program planning and execution including, but not limited to, Advanced Radar Countermeasure System (ARCS) and environmental characterizations. FY2018 RDT&E efforts include future Baseline 4 (BL4) and future baseline capability planning, specifications and requirements.

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Due to the rapidly changing threat environment encountered during our prolonged commitment to OCO, the acquisition program manager has the authority to redirect funding as necessary to meet current stated and emerging requirements.								
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.								
B. Program Change Summary (\$ in Millions)		FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total		
Previous President's Budget		14.187	13.723	13.996	0.000	13.996		
Current President's Budget		32.024	23.923	14.040	0.000	14.040		
Total Adjustments		17.837	10.200	0.044	0.000	0.044		
• Congressional General Reductions		0.000	0.000					
• Congressional Directed Reductions		0.000	0.000					
• Congressional Rescissions		0.000	0.000					
• Congressional Adds		0.000	0.000					
• Congressional Directed Transfers		0.000	0.000					
• Reprogrammings		17.837	0.000					
• SBIR/STTR Transfer		0.000	0.000					
• Other Adjustments		0.000	10.200	0.044	0.000	0.044		
Change Summary Explanation								
FY 2016 Increase due to adjustments:								
Above Threshold Reprogramming (ATR) \$15.0M to accelerate Compass Call BL3 Development								
Below Threshold Reprogramming (BTR) \$2.837M for development of additional capability against emerging communication and radar targets								
FY17 Increase due to adjustments:								
Request for Additional Appropriation (RAA) \$10.2M supports BL3 ARCS software, Environmental Characterization efforts and BL4 initial specifications.								
C. Accomplishments/Planned Programs (\$ in Millions)				FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Title: Baseline Upgrade Development				32.024	23.923	14.040	-	14.040
Description: Supports development of new PME baseline, other subsystem, and platform upgrades in order to ensure COMPASS CALL capabilities remain ahead of emerging adversary tactics and technologies.								
FY 2016 Accomplishments:								

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C. Accomplishments/Planned Programs (\$ in Millions)		FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Continued MBL2 development efforts and channeled efforts towards BL3 development of: <ul style="list-style-type: none">• Digital Frequency Updates• New Counter Radar and Receiver Technologies• Human Machine Interface• New Array and Target Development• Advanced Commercial and Military Communications• Counter Satellite Navigation Technique• Digital Avionics (glass cockpit) Enhancements• Platform upgrades and associated non-recurring engineering• Studies and analysis for current/future planning and execution FY 2017 Plans: Continuing efforts for BL3 development and initiating efforts for BL4 development on upgraded platform for: <ul style="list-style-type: none">• Updates to PME infrastructure• Advanced Radar Countermeasures & Receiver Technologies• Environmental Characterization• New Counter Radar and Receiver Technologies• New Array and Target Development• Advanced Commercial and Military Communications• Counter Satellite Navigation Techniques• Platform upgrades and associated non-recurring engineering• Studies and analysis for current/future baseline development planning FY 2018 Base Plans: Will continue efforts for BL3 and BL4 development on upgraded platform for: <ul style="list-style-type: none">• Updates to PME infrastructure• Advanced Radar Countermeasures & Receiver Technologies• Environmental Characterization• New Counter Radar and Receiver Technologies• New Array and Target Development• Advanced Commercial and Military Communications• Counter Satellite Navigation Techniques• Platform upgrades and associated non-recurring engineering						

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C. Accomplishments/Planned Programs (\$ in Millions)					FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total		
• Studies and analysis for current/future baseline development planning and execution (transmit/receive)											
Accomplishments/Planned Programs Subtotals					32.024	23.923	14.040	-	14.040		
D. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
• APAF: BA05: Line item# CALL00: Compass Call Mods	81.990	212.657	166.541	56.720	223.261	159.295	160.109	160.308	161.028	Continuing	Continuing
• APAF: BA06: Line item# CALL00: Compass Call Mod Spares	10.128	50.172	10.228	0.000	10.228	10.705	10.891	11.092	11.314	Continuing	Continuing
Remarks											
E. Acquisition Strategy											
COMPASS CALL capability is maintained with incremental upgrades per the baseline acquisition strategy plus Quick Reaction Capability (QRC) developments acquired through the 645th Aeronautical Systems Group (645 AESG) in accordance with their Program Management Directive (PMD), Class Justification and Approval (J&A) document for acquisition of supplies and services using other than full and open competition criteria, and Life Cycle Management Plan (LCMP) across the full spectrum of system life cycle management ("cradle to grave" support concept). 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 (CCDR) requirements.											
F. 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: FY 2018 Air Force													Date: May 2017		
Appropriation/Budget Activity 3600 / 7						R-1 Program Element (Number/Name) PE 0207253F / <i>Compass Call</i>				Project (Number/Name) 674804 / <i>Compass Call</i>					

Product Development (\$ in Millions)				FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 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
Baseline Upgrade Development Primary Mission Equipment	SS/CPFF	BAE Sytems : Nashua, NH	-	32.024	Dec 2015	23.923	Dec 2016	14.040	Dec 2017	0.000		14.040	Continuing	Continuing	-
Subtotal			-	32.024		23.923		14.040		0.000		14.040	-	-	-

Support (\$ in Millions)				FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 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 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 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 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 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 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			-	32.024		23.923		14.040		0.000		14.040	-	-	-

Remarks

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Exhibit R-4, RDT&E Schedule Profile: FY 2018 Air Force	Date: May 2017
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Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0207253F / <i>Compass Call</i>	Project (Number/Name) 674804 / <i>Compass Call</i>
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	FY 2016				FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022			
	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
Mid Baseline 2 Integration and Test																												
Mid Baseline 2 Fielding																												
Baseline 3 Development																												
Baseline 3 Integration and Test																												
Baseline 3 Fielding																												
Baseline 4 Development																												
Baseline 4 Integration and Test																												
Future Baseline Development																												

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Exhibit R-4A, RDT&E Schedule Details: FY 2018 Air Force			Date: May 2017
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Mid Baseline 2 Integration and Test	1	2016	3	2017
Mid Baseline 2 Fielding	3	2016	2	2018
Baseline 3 Development	1	2016	1	2019
Baseline 3 Integration and Test	2	2018	2	2020
Baseline 3 Fielding	2	2020	3	2022
Baseline 4 Development	3	2017	2	2021
Baseline 4 Integration and Test	3	2019	4	2022
Future Baseline Development	3	2020	4	2022