Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Air Force											Date: February 2020	
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0207253F / *Compass Call*							
COST ($ in Millions)	**Prior Years**	**FY 2019**	**FY 2020**	**FY 2021 Base**	**FY 2021 OCO**	**FY 2021 Total**	**FY 2022**	**FY 2023**	**FY 2024**	**FY 2025**	**Cost To Complete**	**Total Cost**
Total Program Element	-	43.466	31.888	15.854	0.000	15.854	15.900	16.186	16.475	20.452	Continuing	Continuing
674804: *Compass Call*	-	43.466	31.888	15.854	0.000	15.854	15.900	16.186	16.475	20.452	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

COMPASS CALL is the Air Force's wide-area, Airborne Electronic Attack (AEA) Command and Control Warfare/Information Operations (C2W/IO) weapon system. The employment of this weapon system interrupts 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 attack system is capable of surgical denial and/or disruption of adversary Radio Frequency (RF) communications, radar and sensor systems. The system was fielded in 1983 and to date has evolved through a series of incremental upgrades. The Baseline 2 (BL2) configuration and the mid-Baseline 2 (MBL2) enhancements are the latest in a line of mission system upgrades to the EC-130H. The BL2 configuration and MBL2 enhancements currently fielded have advanced COMPASS CALL's electronic attack capabilities significantly over the two previously fielded baselines. Baseline 3 (BL3) activities address new target-specific techniques, selective capability against advanced commercial communications, digital voice recognition and digital mission crew systems. Due to the rapid advances in electronic attack techniques and technology, COMPASS CALL was designed to be adaptable and must continuously 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 mission system 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 provides the worldwide operational proficiency needed to comply with evolving Communications, Navigation, Surveillance/Air Traffic Management (CNS/ATM) 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 Counter Radar technologies, Counter Communications, new target-specific techniques, new modern communications receiver technologies, further weight reduction, repackaged transmit antennas, the next generation of Special Purpose Emitter Array (SPEAR), Human-to-Machine Interface (HMI), 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 2021 RDT&E efforts will concentrate on Baseline 4 (BL4) and future baseline initiatives for Prime Mission Equipment (PME) upgrades and integration. The programmed BL4 upgrades will advance the PME capabilities as the FY 2021 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 2021 RDT&E efforts include studies and analyses to support current program planning and execution including, but not limited to development efforts for future baseline capability planning to include low-band transmit capability, transition to open architecture and increased

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Software-Defined Radio (SDR) capability, subsystem upgrades, power expansion, transmit and receive development, Size/Weight/Power and Cooling (SWAP-C) reductions and Quick Reaction Capability (QRC) clip-ins.

Due to the rapidly changing threat environment encountered during COMPASS CALL's prolonged commitment to overseas operations, the acquisition program manager has the authority to redirect funding as necessary to meet current stated and emerging requirements.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver COMPASS CALL capabilities. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605831F.

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 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Previous President's Budget	43.901	15.888	15.883	0.000	15.883
Current President's Budget	43.466	31.888	15.854	0.000	15.854
Total Adjustments	-0.435	16.000	-0.029	0.000	-0.029
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	16.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-0.422	0.000			
• Other Adjustments	-0.013	0.000	-0.029	0.000	-0.029

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2019	FY 2020
Project: 674804: *Compass Call*		
Congressional Add: *EC-37B Compass Call Re-host Congressional Add*	30.000	16.000
Congressional Add Subtotals for Project: 674804	30.000	16.000
Congressional Add Totals for all Projects	30.000	16.000

Change Summary Explanation

Project: 674804: Compass Call

FY19: Congressional Add: $30M EC-37B Compass Call Re-host Congressional Add

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FY20: Congressional Add: $16M EC-37B Compass Call Re-host Congressional Add BL4 acceleration

FY19: Other Adjustments of $0.013M is payment for a Compass Call prior year RDT&E bill.

C. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Title: Baseline Upgrade Development	13.466	15.888	15.854	-	15.854
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 2020 Plans:*** Continuing efforts for BL3 and BL4 development on upgraded platform for: • Low Band antenna design • Advanced Military & Commercial Communications Offensive capabilities • Emerging and Modern Targets • Platform integration for future capabilities • Updates to BL4 PME infrastructure • Platform upgrades and associated non-recurring engineering • Studies and analysis for current/future baseline development planning ***FY 2021 Base Plans:*** Will continue efforts for BL4 development on upgraded platform and address BL3 anomalies, as required. BL4 efforts as follows: • Low Band antenna design • Advanced Military & Commercial Communications Offensive capabilities • Emerging and Modern Targets • Platform integration for future capabilities • Updates to BL4 PME infrastructure • Platform upgrades and associated non-recurring engineering • Studies and analysis for current/future baseline development planning • Open Mission System Architecture • Software Defined Receiver/Transmit ***FY 2020 to FY 2021 Increase/Decrease Statement:*** N/A					
Accomplishments/Planned Programs Subtotals	13.466	15.888	15.854	-	15.854

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	FY 2019	FY 2020
Congressional Add: EC-37B Compass Call Re-host Congressional Add	30.000	16.000
FY 2019 Accomplishments: Continued efforts for baseline acceleration to support aircraft compressed schedule. Efforts included: • Accelerate low-band capability • Platform upgrades and associated non-recurring engineering (installation/mounting concepts for h/w) • PME Development • Maturation of brass-boards • Studies and analysis for current/future baseline development planning; thermal management studies of power amplifiers and transmit antennas		
FY 2020 Plans: EC-37B Compass Call Re-host Congressional Add to accelerate Baseline 4 BL4 efforts may include but not limited to the follows: • Low Band antenna design • Advanced Military & Commercial Communications Offensive capabilities • Emerging and Modern Targets • Platform integration for future capabilities • Updates to BL4 PME infrastructure • Platform upgrades and associated non-recurring engineering • Studies and analysis for current/future baseline development planning • Open Mission System Architecture • Software Defined Receiver/Transmit		
Congressional Adds Subtotals	30.000	16.000

D. Other Program Funding Summary ($ in Millions)

Line Item	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
• APAF 04 Line item CALL00: *Compass Call Aircraft*	216.113	114.095	161.117	-	161.117	132.858	136.848	140.952	185.725	Continuing	Continuing
• APAF 05 Line item CALL00: *Compass Call Mods*	172.285	110.754	193.389	12.800	206.189	143.387	116.081	100.027	87.496	Continuing	Continuing
• APAF 06 Line item CALL00: *Compass Call Mod Spares*	10.554	10.805	10.984	-	10.984	66.932	11.409	11.615	19.820	Continuing	Continuing

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D. Other Program Funding Summary ($ in Millions)

Line Item	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost

Remarks

E. Acquisition Strategy

COMPASS CALL maintains operational relevancy through an incremental upgrade strategy in which a new "Baseline" mission system configuration fields approximately every 3-4 years. Urgent upgrades between Baselines is accomplished via Quick Reaction Capabilities (QRC). These efforts are accomplished by the 645th Aeronautical Systems Group (645 AESG) in accordance with their Acquisition Strategy Plan (ASP), Program Management Directive (PMD), and Life Cycle Management Plan (LCMP) and cover the full spectrum of system life cycle management ("cradle to grave" support concept). Due to the rapidly changing threat environment encountered during COMPASS CALL's 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.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Air Force			Date: February 2020
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Product Development	SS/CPAF	Not specified. : TBD	-	-		-		-		-		-	Continuing	Continuing	-
Baseline Upgrade Development Primary Mission Equipment	SS/CPFF	BAE Sytems : Nashua, NH	-	42.473	Dec 2018	31.372	Jan 2020	15.338	Dec 2020	-		15.338	Continuing	Continuing	-
		Subtotal	-	42.473		31.372		15.338		-		15.338	Continuing	Continuing	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Management Services	SS/CPAF	Not specified. : TBD	-	-		-		-		-		-	Continuing	Continuing	-
Program Management Administration (PMA)	Various	AFLCMC : WPAFB, OH	-	0.993	Mar 2019	0.516	Apr 2020	0.516	Apr 2021	-		0.516	Continuing	Continuing	-
		Subtotal	-	0.993		0.516		0.516		-		0.516	Continuing	Continuing	N/A

	Prior Years	FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	43.466		31.888		15.854		-		15.854	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2021 Air Force		Date: February 2020
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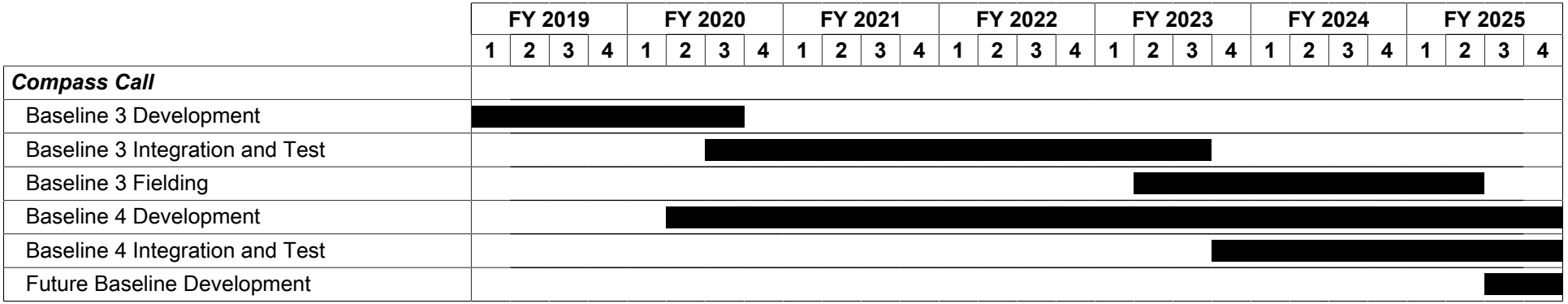

Exhibit R-4A, RDT&E Schedule Details: PB 2021 Air Force		Date: February 2020
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Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Compass Call				
Baseline 3 Development	1	2019	3	2020
Baseline 3 Integration and Test	3	2020	3	2023
Baseline 3 Fielding	2	2023	2	2025
Baseline 4 Development	2	2020	4	2025
Baseline 4 Integration and Test	4	2023	4	2025
Future Baseline Development	3	2025	4	2025

Note

IDECS does not allow dates beyond 2025.