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Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Air Force **Date:** March 2024

Appropriation/Budget Activity 3600: <i>Research, Development, Test & Evaluation, Air Force I BA 7: Operational Systems Development</i>	R-1 Program Element (Number/Name) PE 0207253F / <i>Compass Call</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	54.758	66.932	132.475	0.000	132.475	107.766	101.785	108.169	109.544	Continuing	Continuing
674804: <i>Compass Call</i>	-	54.758	66.932	132.475	0.000	132.475	107.766	101.785	108.169	109.544	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Compass Call is the Air Force's wide-area, standoff, Airborne Electromagnetic Attack (AEA) Command and Control Warfare/Information Operations (C2W/IO) weapon system. The employment of this weapon system interrupts the adversary's use of the electromagnetic battlespace and is a key active component in the information battlespace and prosecution of current ground and airborne threats. Compass Call's sophisticated electromagnetic attack system is capable of surgical denial and/or disruption of adversary Radio Frequency (RF) communications, radar and sensor systems.

Due to rapid advances in Electromagnetic Attack (EA) techniques and technology, Compass Call is designed to be adaptable, making it well-suited for a continuous modernization strategy. Such a strategy ensures Compass Call techniques evolve at a pace capable of addressing adversary tactics and emerging technologies. The Compass Call weapon system is continuously improved using a rapid development and acquisition process supporting a Baseline upgrade strategy. User needs and technology insertion opportunities are continuously reviewed. As a result of technology refresh initiatives, including incorporation of open architectures, "plug and play" systems, software defined radios, and modular software development, Compass Call is implementing agile processes to support weapon system development activities.

In FY2017, the Compass Call re-host program was initiated prompting transition of mission capabilities from the legacy EC-130H airframe to an EA-37B airframe. The re-hosted Compass Call platform is based on a commercial derivative G550 aircraft holding Federal Aviation Administration (FAA) Supplemental Type Certificates (STCs) for airworthiness. The platform will undergo modifications to host Compass Call's Prime Mission Equipment (PME) and antenna arrays and will receive additional STCs and Military Type Certificates (MTCs). The EA-37B aircraft will re-use PME from the EC-130H aircraft that will be upgraded to the latest Baseline. Due to the age of the EC-130H fleet, re-hosting of the PME is crucial to ensuring the longevity of this critical capability. In an effort to put capability into the warfighter's hands as soon as possible, the EA-37B program pursues concurrent developmental and production activities.

EA-37B Baseline 3 (BL3) updates fielded EC-130H Mid-Baseline 2 (MBL2) capabilities, while significantly increasing operating altitude and standoff distances through re-host onto the EA-37B airframe. Baseline 4 (BL4) transitions the software baseline to an agile software framework and implements System-Wide Open Reconfigurable Dynamic Architecture (SWORD-A) to enable rapid integration of new capabilities offering increased target capacity. Requirements for Baseline 5 (BL5) are currently being determined and are intended to focus on external communications systems to improve connectivity across the battlespace.

FY25 RDT&E efforts continues BL3 test and evaluation, BL4 development activities, maturation of AEA technologies, and trade studies for future Baseline efforts. Activities encompassed within the BL3 and BL4 PME upgrade may include, but are not limited to, aircraft system integration; assembly, test and checkout; mission system upgrades; obsolescence resolution; software development; systems engineering; test and evaluation; flight test; training systems; training events; support equipment; and Program Support Costs (PSC).

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Specific mission system developmental activities may include, but are not limited to, studies and analyses for future capabilities and baselines; preparation of white papers and technical reports; maturation of Technology Readiness Level (TRL) capabilities for future insertion; development of QRC applications for integration into Compass Call Software Defined Radios (SDRs); technology roadmap development; power expansion; transmit and receive development; size, weight, power and cooling (SWAP-C) reductions; transition of Compass Call PME to open architecture compliant standards; and continued migration of the Compass Call Operating System (CCOS) to an agile software construct.

Compass Call funding also supports innovation activities to include studies, analyses, requirements definition, and QRC prototypes/demonstrations to accelerate planning for technology transition, technology insertion, and future acquisition programs.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such programs funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In FY23 \$0.002M was expended for civilian pay expenses in this program element, and in FY24 \$0.000M is forecasted for civilian pay expenses in this program element.

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)	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025 Base</u>	<u>FY 2025 OCO</u>	<u>FY 2025 Total</u>
Previous President's Budget	50.000	66.932	82.229	0.000	82.229
Current President's Budget	54.758	66.932	132.475	0.000	132.475
Total Adjustments	4.758	0.000	50.246	0.000	50.246
• 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	6.589	0.000			
• SBIR/STTR Transfer	-1.831	0.000			
• Other Adjustments	0.000	0.000	50.246	0.000	50.246

Change Summary Explanation

FY25: Funding request increased to support upgraded software integration lab (SIL) capability which will enable more advanced developmental testing of technologies in the SIL, thus decreasing "on aircraft" required test time at ranges.

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C. Accomplishments/Planned Programs (\$ in Millions)		FY 2023	FY 2024	FY 2025
<p>Title: Baseline Upgrade Development</p> <p>Description: Development and test of upgraded PME baseline (BL), other subsystem, and platform upgrades in order to ensure Compass Call capabilities remain ahead of emerging adversary tactics, techniques, and technologies.</p> <p>FY 2024 Plans: Supports PME development, integration, and test on platform upgrades and associated simulators/trainers, address PME anomalies as required, and future baseline and capability development activities.</p> <p>Specific efforts include, but are not limited to, the following:</p> <ul style="list-style-type: none"> • Continues platform and PME engineering, upgrade, and test activities • Continues advancing Electronic Attack offensive capabilities and expanding frequency coverage • Continues studies and analysis for current/future baseline development planning • Develops future capabilities to combat emerging and modern threats • Develops future external communications upgrades • Develops training systems/simulator upgrades • Continues Program Support Costs (PSC), advisory & assistance service, and systems engineering support <p>FY 2025 Plans: Will continue PME development, integration, and test on platform upgrades and associated simulators/trainers, address PME discrepancies as required, and future baseline and capability development activities.</p> <p>Specific efforts include, but are not limited to, the following:</p> <ul style="list-style-type: none"> • Will continue platform and PME engineering, upgrade, and test activities • Will continue advancing Electronic Attack offensive capabilities and expanding frequency coverage • Will continue studies and analysis for current/future baseline development planning • Will develop future capabilities to combat emerging and modern threats • Will develop future external communications upgrades • Will develop training systems/simulator upgrades • Will upgrade existing Software Integration Lab (SIL) to include advanced testing capability • Will continue Program Support Costs (PSC), advisory & assistance service, and systems engineering support <p>FY 2024 to FY 2025 Increase/Decrease Statement:</p>		54.758	66.932	132.475

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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2023	FY 2024	FY 2025
Funding increased to provide upgraded software integration lab (SIL) capability which will enable more advanced developmental testing of technologies in the SIL, thus decreasing "on aircraft" required test time at ranges. Additionally, this advanced SIL test capability will rapidly mature core technologies/capabilities required for future baseline upgrades and accelerate delivery of capabilities to the warfighter.			
Accomplishments/Planned Programs Subtotals	54.758	66.932	132.475

D. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
• APAF 04 Line item CALL00: <i>Compass Call Aircraft</i>	553.700	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	553.700
• APAF 05 Line item CALL00: <i>Compass Call Mods</i>	330.200	144.686	94.654	-	94.654	126.803	214.492	216.548	221.612	0.000	1,348.995
• APAF 06 Line item CALL00: <i>Compass Call Mod Spares</i>	11.343	68.555	13.949	-	13.949	22.396	17.464	17.827	18.181	0.000	169.715

Remarks

E. Acquisition Strategy
Due to rapid advances in Electromagnetic Attack (EA) techniques and technology, Compass Call was designed to be adaptable, making it well-suited to a continuous modernization strategy. Such a strategy ensures Compass Call techniques evolve at a pace capable of addressing adversary tactics and emerging technologies. The Compass Call weapon system is continuously improved using a rapid development and acquisition process supporting a spiral baseline upgrade strategy. User needs and technology insertion opportunities are continuously revised. As a result of technology refresh initiatives, including incorporation of open architectures, "plug and play" systems, software defined radios, and modular software development, Compass Call is implementing agile processes to support weapon system development activities. QRCs are used to address urgent warfighter requests that must be delivered prior to a Baseline release. Due to rapidly changing threat environment and operational demand leveraging Compass Call capabilities, the acquisition program manager may redirect funding as necessary to meet current stated and emerging/evolving Combatant Commander requirements.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force **Date:** March 2024

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Product Development (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Compass Call Baseline Upgrade Development Primary Mission Equipment	SS/CPFF	BAE Systems : Nashua, NH	-	38.820	Oct 2022	40.798	Oct 2023	112.849	Oct 2024	-		112.849	Continuing	Continuing	-
Subtotal			-	38.820		40.798		112.849		-		112.849	Continuing	Continuing	N/A

Support (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Compass Call Sim & Trainer	Various	Not specified. : TBD	-	0.946	Sep 2023	-		-		-		-	0.000	0.946	-
Subtotal			-	0.946		-		-		-		-	0.000	0.946	N/A

Test and Evaluation (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Compass Call Test and Evaluation	Various	Not specified. : TBD	-	14.469	Dec 2022	25.545	Dec 2023	18.993	Dec 2024	-		18.993	Continuing	Continuing	-
Subtotal			-	14.469		25.545		18.993		-		18.993	Continuing	Continuing	N/A

Management Services (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Compass Call Program Support Costs (PSC)	Various	AFCLCMC : WPAFB, OH	-	0.523	Apr 2023	0.589	Apr 2024	0.633	Apr 2025	-		0.633	Continuing	Continuing	-
Subtotal			-	0.523		0.589		0.633		-		0.633	Continuing	Continuing	N/A

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Exhibit R-4, RDT&E Schedule Profile: PB 2025 Air Force **Date:** March 2024

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	FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
	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

Compass Call EA-37B Re-host (BL3)	
Capability Development, Test, and Evaluation	
Compass Call EA-37B BL4	
Capability Development, Test, and Evaluation	
Advanced Capability Development	
Future Advanced Capability Development, Test, and Evaluation	

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Exhibit R-4A, RDT&E Schedule Details: PB 2025 Air Force		Date: March 2024
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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Compass Call EA-37B Re-host (BL3)</i>				
Capability Development, Test, and Evaluation	1	2023	4	2025
<i>Compass Call EA-37B BL4</i>				
Capability Development, Test, and Evaluation	1	2023	3	2028
<i>Advanced Capability Development</i>				
Future Advanced Capability Development, Test, and Evaluation	1	2023	4	2029