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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Air Force **Date:** March 2023

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 0207412F <i>I Control and Reporting Center (CRC)</i>
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COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	-	9.565	6.615	17.498	0.000	17.498	18.440	18.366	18.742	19.421	0.000	108.647
67485L: <i>CRC Modernization</i>	-	9.565	6.615	17.498	0.000	17.498	18.440	18.366	18.742	19.421	0.000	108.647
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

The Control and Reporting Center (CRC) is a mobile, ground-based theater air control system (TACS) surveillance and battle management command and control (BMC2) element. It is a customizable, modular, transportable, and persistent weapon system employed at the tactical level to provide direct command and control to all air assets in an assigned Area of Responsibility (AOR) and to report back to the Joint Force Air Combat Commander (JFACC). The CRC is a family of systems which include: AN/TYQ-23A(V)1 Tactical Air Operations Module (TAOM), AN/TSC-250 Multifunctional Information Distribution System-Joint Tactical Radio System (MIDS-JTRS), AN/TRC-213/214 Remote Radio Secure Voice System (RRSVS), and the AN/TPS-75 Radar, CRC's organic radar. CRC is part of the Air Force's Advanced Battle Management System (ABMS) initiative, to which CRC will provide modular capability to support tactical C2. CRC Modernization consolidates previous upgrade efforts into a coordinated initiative focused on upgrading of BMC2, sensors, and communications systems for the current weapon system construct while designing in modularity that will support the future Tactical Operations Center-Light and Medium (TOC-L and TOC-M) capability.

CRC Modernization efforts include but are not limited to: modernization of long-haul SATCOM capability including replacement of the Ground Mount Terminal (GMT), Next Generation CRC weapon system (TOC-L/TOC-M) prototyping support, architecture upgrades to the AN/TYQ-23A(V)1 Tactical Air Operations Module and AN/TRC-213/214 Remote Radio Secure Voice System to support evolution into future ABMS construct. In addition, CRC will continue to develop organic operating software solutions via the ABMS Cloud-Based C2 portfolio that will ingest and disseminate Moving Target Indicator (MTI) feeds and integrate Top Secret (TS)/Sensitive Compartmented Information (SCI)/Special Access Program (SAP) hardware and software capability solutions, TPY-4 Deployable Radar (3DELRR) integration, active and passive 3rd party sensor integration, Joint Worldwide Intelligence Communication System (JWICS), SAP network, and Talon Thresher connectivity, accredited structures and storage solutions in pursuit of Open System Architecture (OSA) advancements.

FY2024 funding will continue to support CRC modernization efforts. Efforts will include, but are not limited to, the analysis, development, integration, and employment of a modern long-haul SATCOM capability and the replacement of GMT. The modernized Long-Haul SATCOM system will provide increased bandwidth, increased mobility, and integration of feeds from both new and legacy sensors employed by the USAF and its partners.

FY2024 funding will be used in the development and integration of an Endpoint Security Solution (ESS) for the appropriate protection, ingestion, processing, and dissemination of TS/SCI information.

FY2024 funding will also pursue the development and integration of applications within the ABMS Cloud-Based C2 portfolio. This development and delivery utilizing Agile and DevSecOps processes will include the periodic delivery of Minimum Viable Capability Releases (MVCR) as well as the evolution of the ABMS roadmap towards a FY27 DoD wide implementation of the ABMS software suite.

UNCLASSIFIED

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This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605832F, 0605833F, 0605898F, 0606398F. In FY22, \$1.291 million was expended for civilian pay expenses in this program element, and in FY23 \$1.736 million 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)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	9.875	6.615	17.492	0.000	17.492
Current President's Budget	9.565	6.615	17.498	0.000	17.498
Total Adjustments	-0.310	0.000	0.006	0.000	0.006
• 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	0.000	0.000			
• SBIR/STTR Transfer	-0.310	0.000			
• Other Adjustments	0.000	0.000	0.006	0.000	0.006

Change Summary Explanation

N/A

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023	FY 2024
Title: CRC Modernization	9.565	6.615	17.498
Description: - CRC Modernization consolidates previous upgrade efforts into a coordinated initiative focused on upgrading of BMC2, sensors, and communications systems for the current weapon system while designing in modularity that will support the future Tactical Operations Center-Light and Medium (TOC-L and TOC-M) as well as organic software development in collaboration with ABMS Software Factories			
FY 2023 Plans:			
- Continue organic software development and architectural upgrades			
- Continue hardware architecture modernization upgrades			

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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023	FY 2024
<p>- Continue software development/integration/deployment using Agile development, security and operations (DevSecOps).</p> <p>FY 2024 Plans:</p> <ul style="list-style-type: none"> - Continue organic software development and architectural upgrades - Continue hardware architecture modernization upgrades, continuous software development/integration/deployment using Agile DevSecOps - Will develop, prototype, test, and cyber harden long-haul communication capabilities - Will develop prototype, test, and cyber harden of TS accredited structures and storage solutions in pursuit of emerging technology <p>FY 2023 to FY 2024 Increase/Decrease Statement: FY2024 funds increase due to ramp up in development of Long-haul SATCOM terminal, a replacement for the current weapon system's Ground Mount Terminal, and Endpoint Security Solution (ESS) which enables a JWICS level security connection.</p>			
Accomplishments/Planned Programs Subtotals	9.565	6.615	17.498

D. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u> <u>Base</u>	<u>FY 2024</u> <u>OCO</u>	<u>FY 2024</u> <u>Total</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• OPAF 03 833040: <i>Theater Air Control Sys Improvemen</i>	43.442	13.986	0.000	-	0.000	80.867	60.804	38.279	39.084	0.000	276.462

Remarks

E. Acquisition Strategy

The CRC Capability Roadmap provides for the modernization of the CRC family of systems and will be programmed into phased updates through 2037 to further advance current and future battlespace awareness and tactical battle management command and control capabilities. A variety of contract and organic vehicles will be used depending on type of effort and skills required. The management strategy relies on Air Force Program Executive Office for Digital (AFPEO Digital) as the Milestone Decision Authority and the Air Force Life Cycle Management Center (AFLCMC) as the Contracting Authority.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Air Force												Date: March 2023			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)							
3600 / 7				PE 0207412F / Control and Reporting Center (CRC)				67485L / CRC Modernization							
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
CRC Next Gen	C/Variou	Various : Hill AFB, UT	-	3.901	Dec 2021	-		-		-		-	Continuing	Continuing	-
Long-Haul SATCOM	C/Variou	Various : Hill AFB, UT	-	-		-		5.433	Jan 2024	-		5.433	Continuing	Continuing	-
End Point Security Solutions	C/Variou	Various : Hill AFB, UT	-	-		-		0.800	Feb 2024	-		0.800	Continuing	Continuing	-
CRC 520th Organic Software Development	C/FP	520 SWEG : Hill AFB, UT	-	3.175	Dec 2021	3.754	Jan 2023	6.000	Dec 2023	-		6.000	Continuing	Continuing	-
Subtotal			-	7.076		3.754		12.233		-		12.233	Continuing	Continuing	N/A
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
CRC Modernization Direct Cite Authority - Additional 11 Civilian Positions	RO	Various : Hill AFB, UT	-	1.290	Oct 2021	1.736	Oct 2022	1.850	Oct 2023	-		1.850	Continuing	Continuing	-
Subtotal			-	1.290		1.736		1.850		-		1.850	Continuing	Continuing	N/A
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
CRC Modernization Test Support	Variou	Various : Various	-	0.199	Nov 2021	0.125	Nov 2022	0.615	Nov 2023	-		0.615	Continuing	Continuing	-
Subtotal			-	0.199		0.125		0.615		-		0.615	Continuing	Continuing	N/A

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Air Force		Date: March 2023
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0207412F / <i>Control and Reporting Center (CRC)</i>	Project (Number/Name) 67485L / <i>CRC Modernization</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>AN/TRC-213/214 RRSVS Radio Modernization Upgrade</i>				
Integration and Testing	1	2022	4	2023
<i>CRC Organic Software</i>				
Design, Development, Integration, and Test	1	2022	4	2027
<i>Long-Haul SATCOM</i>				
Design, Development, Integration, and Test	2	2024	2	2025