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Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Air Force **Date:** April 2022

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 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
Total Program Element	-	15.514	9.875	6.615	0.000	6.615	17.492	17.817	18.190	18.594	Continuing	Continuing
67485L: <i>CRC Modernization</i>	-	15.514	9.875	6.615	0.000	6.615	17.492	17.817	18.190	18.594	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

CRC is part of the Air Force's Advanced Battle Management System (ABMS) initiative, to which CRC will provide a tactical C2 capability. CRC Modernization (formerly known as CRC Bridge to ABMS) strategy in FY20 commenced a consolidation of previous modernization efforts into a larger initiative that continues the upgrading of BMC2, sensors, and communications systems. These continuing modernization efforts will allow CRC to adopt a leaner, modular and streamlined architecture that can be tailored to execute a wide range of operations. Furthermore, CRC will develop organic operating software solutions that will ingest and disseminate Moving Target Indicator (MTI) feeds and tracks, enable Open Mission Systems (OMS)/Universal Command and Control Interface (UCI) compliance, and integrate Top Secret (TS)/ Sensitive Compartmented Information (SCI)/Special Access Program (SAP) hardware and software capability solutions. The organic software development efforts rely on having a steady stream of RDT&E funding through the FYDP.

In FY 2023, CRC development efforts support CRC Modernization include, but are not limited to: AN/TYQ-23A(V)1, AN/TRC-213 architecture modernization upgrades, Next Generation CRC weapons systems prototyping, continuous software development/integration/deployment using Agile and development, security and operations (DevSecOps), 3DELRR Integration, passive sensor integration, ground and air MTI trackers, TS/SCI/Joint Worldwide Intelligence Communication System (JWICS) and Talon Thresher, SAP, hardware and software integration, ABMS, TS accredited structures and storage solutions in pursuit of emerging technology for OMS/Open System Architecture (OSA) advancements, along with possible hardware changes to support ABMS software/hardware development work and collaboration with other ABMS software factories, integration of Link 16 Radios and Secure Internet Protocol Router Network (SIPRNet) capabilities, TS/SCI/SAP accredited structures and storage solutions in pursuit of emerging technology for OMS/OSA advancements. Additionally, possible hardware changes to support ABMS architecture and Live/Virtual/Constructive (L/V/C) Operations capability, multilevel security, edge computing, and artificial intelligence/machine learning solutions. Additional CRC modifications are required for the system to keep pace with evolving COTS/GOTS components, DoD directives, changes in the underlying IT/ Cyber Security environment and any other emerging requirements, and to remain interoperable, certified, supportable, and compliant through the development, integration, testing, fielding, training and related equipment of new CRC capabilities, upgrades and electronic warfare techniques such as "Angry Kitten".

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, 0605832F, 0605833F, 0605898F, 0606398F. In FY21, \$0.943M was expended for civilian pay expenses in this program element, and in FY22, \$1.000M 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.

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B. Program Change Summary (\$ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Previous President's Budget	16.012	9.875	0.000	0.000	0.000
Current President's Budget	15.514	9.875	6.615	0.000	6.615
Total Adjustments	-0.498	0.000	6.615	0.000	6.615
• 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	0.000	0.000			
• Other Adjustments	-0.498	0.000	6.615	0.000	6.615

Change Summary Explanation

FY2023: The FY 2022 President's Budget submittal did not reflect FY 2023 through FY 2026 funding. Therefore, an explanation of the change between the two budget positions for FY 2023 cannot be made in a relevant manner.

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Title: CRC Modernization (formerly known as CRC Bridge to ABMS)	15.514	9.875	6.615	0.000	6.615
<p>Description: - CRC Modernization (formerly known as CRC Bridge to ABMS) efforts will incorporate all future modernization efforts. The following efforts will continue in FY22 and continue into FY23.</p> <p>- CRC Modernization: OMS/UCI development/integration, organic system software development and upgrades in collaboration with ABMS Software factories, JWICS integration, Ground and Air MTI tracker integration, Multi-Level Security/Cross Domain Solution (MLS/CDS) Implementation, L/V/C Operations capability</p> <p>FY 2022 Plans:</p> <ul style="list-style-type: none"> - Field minimum viable product of organic software - Continue development, test and integration of additional CRC requirements - Provide technical assistance for fielded software - Maintain security patches and required updates - Test and integrate modernized AN/TYQ-23A(V)1 and AN/TRC-213/214 prototype <p>FY 2023 Base Plans:</p> <p>- CRC Modernization (formerly known as CRC Bridge to ABMS) efforts will incorporate all future modernization efforts. The following efforts will continue in FY22 and continue into FY23.</p>					

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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
- CRC Modernization starting in FY23 will be CRC Next Gen: hardware architecture modernization upgrades, continuous software development/integration/deployment using Agile development, security and operations(DevSecOps). Production is for scalable, tactical mobile command and control systems.					
FY 2023 OCO Plans: N/A					
FY 2022 to FY 2023 Increase/Decrease Statement: Funding decreased due to the requirement for CRC Modernization					
Accomplishments/Planned Programs Subtotals	15.514	9.875	6.615	0.000	6.615

D. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2021</u>	<u>FY 2022</u>	<u>FY 2023 Base</u>	<u>FY 2023 OCO</u>	<u>FY 2023 Total</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• OPAF 03 833040: <i>Theater Air Control Sys Improvemen</i>	13.374	18.658	0.000	-	0.000	0.000	0.000	0.000	-	Continuing	Continuing

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. 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 2023 Air Force												Date: April 2022			
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 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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/Various	Various : Hill AFB, UT	-	7.042	Jun 2021	3.901	Dec 2021	0.000	Dec 2022	-		0.000	Continuing	Continuing	-
CRC 520th Organic Software Development	C/FP	520 SWEG : Hill AFB, UT	-	4.839	Dec 2020	3.175	Dec 2021	3.755	Dec 2022	-		3.755	Continuing	Continuing	-
Subtotal			-	11.881		7.076		3.755		-		3.755	Continuing	Continuing	N/A
Support (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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	-	1.042	Oct 2020	1.200	Oct 2021	1.200	Oct 2022	-		1.200	Continuing	Continuing	-
Subtotal			-	1.042		1.200		1.200		-		1.200	Continuing	Continuing	N/A
Test and Evaluation (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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	Various	Various : Various	-	0.209	Aug 2021	0.599	Nov 2021	0.660	Nov 2022	-		0.660	Continuing	Continuing	-
Subtotal			-	0.209		0.599		0.660		-		0.660	Continuing	Continuing	N/A
Management Services (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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
Booze Allen Hamilton	C/FP	Not specified. : TBD	-	1.192	Mar 2021	-		0.000	Dec 2022	-		0.000	Continuing	Continuing	-
HX5	C/FP	Not specified. : TBD	-	1.190	Mar 2021	1.000	Mar 2022	1.000	Mar 2023	-		1.000	Continuing	Continuing	-
Subtotal			-	2.382		1.000		1.000		-		1.000	Continuing	Continuing	N/A

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Exhibit R-4, RDT&E Schedule Profile: PB 2023 Air Force		Date: April 2022
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>

FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027			
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

<i>AN/TRC-213/214 RRSVS Radio Modernization Upgrade</i>	
Design and Development	
Integration and Testing	
<i>CRC Software Modernization</i>	
Development and Integration	

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Exhibit R-4A, RDT&E Schedule Details: PB 2023 Air Force		Date: April 2022
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>				
Design and Development	1	2021	4	2021
Integration and Testing	4	2021	4	2022
<i>CRC Software Modernization</i>				
Development and Integration	1	2023	4	2023