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

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0102326F / <i>Region/Sector Operation Control Center Modernization Program</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	-	0.756	0.406	0.831	0.000	0.831	0.850	0.871	0.889	0.921	0.000	5.524
674592: <i>BA7 0102326F 674592 R/SAOC Modernization</i>	-	0.756	0.406	0.831	0.000	0.831	0.850	0.871	0.889	0.921	0.000	5.524
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-	-	-

**A. Mission Description and Budget Item Justification**

The Regional/Sector Operation Center Modernization program supports the NORAD/NORTHCOM homeland defense and air sovereignty mission for fixed Air Defense Sectors.

**BATTLE CONTROL SYSTEM-FIXED (BCS-F):** BCS-F is a bi-national development program with Canada. The BCS-F Program is an AF Homeland Defense battle management command and control system with the capability to integrate data from existing and future civil and military defense surveillance systems into a comprehensive air picture. BCS-F provides tactical communications and data link capabilities with other military and civil systems responsible for planning, directing, coordinating and controlling forces for air surveillance, air defense, and control of sovereign US air space. This integrated air picture enhances the capability to conduct peacetime air sovereignty operations and transition to active air defense operations in the event of aggression.

**BATTLE CONTROL SYSTEM-FIXED MODIFICATION ONE (BCS-F Modification 1):** BCS-F Modification 1 effort will support the implementation of Automatic Dependent Surveillance-Broadcast (ADS-B) data feeds and Earth Center Earth Fixed (ECEF). The BCS-F Modification 1 effort will be executed as a Cooperative Development Program between the US and Canada.

**BATTLE CONTROL SYSTEM MODERNIZATION:** BCS Modernization supports the Rapid Capability Office (RCO) effort to produce a BCS-F replacement system that is interoperable with the Advanced Battle Management System (ABMS) portfolio of capabilities across multiple Combatant Commands. A defined scope of key capability improvements delivered through an agile process to include but not limited to: Integrated Fire Control (IFC), course of action generation, predictive analytics, improved visualizations, an improved user interface and experience (UI/UX). This effort also includes the implementation of a suite of AI/ML products to improve kill-chain response times.

**NATIONAL CAPITOL REGION - INTEGRATED AIR DEFENSE SYSTEM (NCR-IADS):** NCR-IADS is a post-September 11, 2001 rapidly fielded capability that provides ground-based air defense of the NCR airspace by delivering an integrated air picture, air defense weapons, enhanced regional situational awareness, and forensic data collection capabilities. Life cycle replacement will be required to prevent system obsolescence, account for new cyber security requirements, and posture the program to seamlessly integrate future capabilities.

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, 0605831F, 0605832F, 0605833F, 0605898F,

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0606398F. In FY22 \$0.000M was expended for civilian pay expenses in this program element and in FY23 \$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>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
Previous President's Budget	0.771	0.451	0.829	0.000	0.829
Current President's Budget	0.756	0.406	0.831	0.000	0.831
Total Adjustments	-0.015	-0.045	0.002	0.000	0.002
• 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	-0.015	0.000			
• Other Adjustments	0.000	-0.045	0.002	0.000	0.002

<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024</b>
<p><b>Title:</b> Battle Control System-Fixed Modification 1</p> <p><b>Description:</b> Continue systems engineering, development, risk reduction, integration, test &amp; evaluation and fielding of the BCS-F Modification 1 effort. The BCS-F Modification 1 effort will be executed as a Cooperative Program between the US and Canada.</p> <p><b>FY 2023 Plans:</b> Activities include, but are not limited to: -Continue BCS-F Modification 1 ADS-B and ECEF test and evaluation, documentation, fielding and training at operational sites.</p> <p><b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Funding decreased as program transitions to support integration of CBC2.</p>	0.706	0.356	-
<p><b>Title:</b> Battle Control System Modernization</p> <p><b>Description:</b> Modernizing the BCS-F system by contributing to the Rapid Capability Office (RCO) led Cloud-Based Command and Control (CBC2) project. The CBC2 project will produce a BCS-F replacement system that interoperates with Advanced Battle Management System (ABMS) portfolio of capabilities. Anticipated activities include testing, documentation, training and feature development.</p>	0.050	0.050	0.831

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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024</b>
<p><b><i>FY 2023 Plans:</i></b> Activities include, but are not limited to: - Continue supporting CBC2 development and integration of the DI, JERIC20 and open architecture supporting incorporation of machine learning entity classification, artificial intelligence, and cloud-based operations. - Continued implementation of ACC's Combat Identification capability and continued foundation development for continuity of operations (COOP) between defense sectors.</p> <p><b><i>FY 2024 Plans:</i></b> Activities include, but are not limited to: - Continue supporting CBC2 development and integration of the DI, JERIC20 and open architecture supporting incorporation of machine learning entity classification, artificial intelligence, and cloud-based operations. - Continued implementation of ACC's Combat Identification capability and continued foundation development for continuity of operations (COOP) between defense sectors.</p> <p><b><i>FY 2023 to FY 2024 Increase/Decrease Statement:</i></b> Funding increased due to increased support for the modernization of the BCS-F system.</p>			
<p><b><i>Title:</i></b> National Capital Region - Integrated Air Defense System Camera Modernization</p> <p><b><i>Description:</i></b> NCR-IADS Camera System Tech Refresh of legacy camera system to address mission critical component Diminishing Manufacturing Sources and Material Shortages (DMSMS) issues.</p> <p><b><i>FY 2023 Plans:</i></b> N/A</p> <p><b><i>FY 2023 to FY 2024 Increase/Decrease Statement:</i></b> N/A</p>	0.000	0.000	-
<b>Accomplishments/Planned Programs Subtotals</b>	0.756	0.406	0.831

<b>D. Other Program Funding Summary (\$ in Millions)</b>											
<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 833030: <i>Battle Control System - Fixed</i>	2.940	1.409	1.867	-	1.867	3.378	3.450	3.572	3.649	0.000	20.265

**Remarks**

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**E. Acquisition Strategy**

Acquisition Strategy: The Program Management Office (PMO) completed a full and open competition for BCS-F Modification 1 efforts. The BCS-F PMO has finalized a Project Arrangement (PA) to establish a cooperative development program with Canada. These efforts will conclude with development and releases to the Air Defense Sectors.

Management Strategy: Efforts will be managed by BCS-F PMO in conjunction with PMO North, Ottawa and are under the purview of the Air Force Program Executive Office Digital. Air Force Life Cycle Management Center (AFLCMC) is the Contracting Authority.

Contracting Strategy: The BCS Capability modernization takes place under a variety of contract strategies including Other Transaction Authority.

NCR-IADS used a Middle Tier Acquisition (MTA) Rapid Prototyping strategy and leveraged an Other Transaction Authority (OTA) expedited contracting vehicle for the ERSA camera replacement. The ERSA software sustainment contract was modified to support required software development for the camera prototypes.

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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 0102326F / Region/Sector Operation Control Center Modernization Program					674592 / BA7 0102326F 674592 R/SAOC 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
BCS-F Modification 1	Various	Various : Various	-	0.000	Apr 2022	0.000	Dec 2023	-		-		-	Continuing	Continuing	0.000
BCS Modernization	Various	Various : Various	-	0.000	Mar 2022	0.000	Dec 2023	0.100	Dec 2024	-		0.100	Continuing	Continuing	-
NCR-IADS Camera Modernization	Various	Various : Various	-	-		-		-		-		-	Continuing	Continuing	-
<b>Subtotal</b>			-	0.000		0.000		0.100		-		0.100	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
46th Test Wing/Other Test Act	Various	Various : Various	-	0.386	Jan 2022	0.000	Dec 2022	-		-		-	Continuing	Continuing	0.000
<b>Subtotal</b>			-	0.386		0.000		-		-		-	Continuing	Continuing	N/A
Management Services (\$ 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
A&AS	Various	Various : Hanscom AFB, MA	-	0.025	Dec 2021	0.306	Apr 2023	0.281	May 2024	-		0.281	Continuing	Continuing	-
FFRDC	Various	Various : Hanscom AFB, MA	-	0.300	May 2022	-		0.350	Dec 2023	-		0.350	Continuing	Continuing	-
Other	Various	Various : Hanscom AFB, MA	-	0.045	Aug 2022	0.100	May 2023	0.100	May 2024	-		0.100	Continuing	Continuing	-
<b>Subtotal</b>			-	0.370		0.406		0.731		-		0.731	Continuing	Continuing	N/A
Project Cost Totals			Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract				
<b>Project Cost Totals</b>			-	0.756	0.406	0.831	-	0.831	Continuing	Continuing	N/A				



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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2024 Air Force		<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0102326F / <i>Region/Sector Operation Control Center Modernization Program</i>	<b>Project (Number/Name)</b> 674592 / BA7 0102326F 674592 R/SAOC Modernization

	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	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

<b>Battle Control System Modification 1</b>																												
Air Force Systems Operability Test (AFSIT)				■																								
Developmental Testing (DT)							■																					
Operational Testing (OT)											■																	
<b>Battle Control System Modernization</b>																												
Agile Capabilities Development	■																											

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2024 Air Force		<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0102326F / <i>Region/Sector Operation Control Center Modernization Program</i>	<b>Project (Number/Name)</b> 674592 / BA7 0102326F 674592 R/SAOC Modernization

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Battle Control System Modification 1</i></b>				
Air Force Systems Operability Test (AFSIT)	4	2022	4	2022
Developmental Testing (DT)	2	2023	2	2023
Operational Testing (OT)	3	2023	3	2023
<b><i>Battle Control System Modernization</i></b>				
Agile Capabilities Development	1	2022	4	2028