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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 0207410F / <i>Air & Space Operations Center (AOC)</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	-	87.873	78.889	72.059	0.000	72.059	88.521	103.770	106.729	111.669	Continuing	Continuing
674596: <i>AOC WS Modifications</i>	-	87.873	78.889	72.059	0.000	72.059	88.521	103.770	106.729	111.669	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

The AOC WS program was removed from the BA-08 Software Pilot Program (PE 0608410F). All funding was transferred back to the original sources in PE 020741F.

A. Mission Description and Budget Item Justification

This budget line funds the Air Operations Center Weapon System (AOC WS), AN/USQ-163 Falconer, the senior element of the Theater Air Control System (TACS). This is the weapon system that the Commander, Air Force Forces (COMAFFOR) provides the Combined/Joint Force Air Component Commander (C/JFACC) for planning, executing, and assessing theater-wide air and space operations. The C/JFACC provides air, space and cyber support to the Combined/Joint Forces Commander (C/JFC) by coordinating, deconflicting, and assessing the progress of various weapon systems to advance the C/JFC's campaign. The AOC WS develops operations strategy and planning documents. The weapon system also disseminates tasking orders, executes day-to-day peacetime and combat air, space and cyber operations, and provides rapid reaction to immediate situations by exercising positive control of friendly forces. This program is part of the overarching Kessel Run portfolio and is dependent on the All Domain Common Platform (ADCP). The ADCP provides an extensible cloud-based Infrastructure and Platform as a Service (IaaS/PaaS) hosting platform built to deliver highly resilient mission applications and data to Airmen deployed around the world.

Funding supports continued software engineering capacity required for AOC WS Modifications to support and enable the transition from legacy systems (e.g., Theater Battle Management Core System - Force Level [TBMCS FL] and AOC 10.1) to Block 20 modernized capabilities. Additionally, funding supports IaaS/PaaS development and operations specific to the AOC program. AOC WS Modifications are required to support mission requirements at Geographic AOCs, Global (formerly Functional) AOCs, and Support and Manpower Augmentation units, and to keep the AOC current and interoperable with the Combatant Commands (CCMDs), cyber requirements, and next generation weapon systems/weapons. AOC WS Modifications modernize the AOC utilizing Agile Methodologies to deliver capabilities that keep pace with evolving COTS/GOTS components, DoD directives, operational energy security and efficiency objectives, and changes in the underlying IT environment, and to remain interoperable, certified, and supportable across the lifecycle of new capabilities and upgrades to the AOC WS. This includes utilization of a managed cloud IaaS/PaaS hosting platform.

The FY24 funding request was reduced by 15.524 million to account for the availability of prior year execution balances.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such program funding would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, and 0606398F. In FY2022, 13.925M was expended for civilian pay expenses in this program element. In FY2023, 18.016M is forecasted for civilian pay expenses.

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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	0.003	0.000	0.000	0.000	0.000
Current President's Budget	87.873	78.889	72.059	0.000	72.059
Total Adjustments	87.870	78.889	72.059	0.000	72.059
• 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	90.024	79.549			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-2.154	0.000			
• Other Adjustments	0.000	-0.660	72.059	0.000	72.059

Change Summary Explanation

FY2022, \$90.024M was transferred from PE 0608410F

FY2022, \$2.154M was reduced for SBIR tax

FY2023, \$79.949M was transferred from PE 0608410F

Funding Table does not account for:

FY2022, \$9.999M was transferred to ADCP PE 0303248F for Below Threshold Reprogramming

FY2023, \$2.673M was reduced for SBIR tax

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023	FY 2024
Title: AOC WS Modifications Development	87.873	78.889	72.059
Description: Plan and execute strategies to deliver war fighting outcomes by leveraging commercial best practices for agile software development, scale a modern IaaS/PaaS solution to the AOC WS enterprise, implement improved solutions for platform architecture and Continuous Integration/Continuous Delivery (CI/CD) pipeline, enable objectives that support operational energy and security efficiencies and maintain continuous Authority to Operate (ATO). Conduct software engineering solutions by leveraging agile engineering methodologies to engineer, integrate, and test modifications to the AOC WS leveraging test-driven development. Utilize CI/CD processes to provide engineering solutions, test, and deliver enhanced operational C2 capabilities including support of multi-domain operations.			

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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023	FY 2024
<p><i>FY 2023 Plans:</i></p> <ul style="list-style-type: none"> - Continue to improve the Kessel Run All Domain Operations Suite (KRADOS) in operational use and scale across the AOC enterprise. - Continue the transition from legacy applications/systems such as TBMCS FL and AOC 10.1 baseline to AOC WS Block 20 modernized capabilities. - Leverage software engineering capacity to align with FY23 Capability Needs Statement (CNS) priorities which includes maturing Block 20 capabilities to enable global access to KRADOS for all AOCs, scale KRADOS to support Major Theater War, begin supporting Integrated ISR Information Exchange, begin building out Ops Support (e.g., Help Desk & Training) functions, and begin development for KRADOS to process mission execution despite network availability/disconnected ops through delivery of persistent and resilient capability. - Optimize Operational Energy (aviation fuel) use and increase combat capability through operations software development. - Enable development and scaling of an extensible cloud-based IaaS/PaaS hosting platform/enterprise architecture along with the necessary services to support continuous software capability integration and delivery. <p><i>FY 2024 Plans:</i></p> <ul style="list-style-type: none"> - Will continue to improve the KRADOS in operational use and scale across the AOC enterprise. - Will continue the transition from legacy applications/systems such as TBMCS FL and AOC 10.1 baseline to AOC WS Block 20 modernized capabilities. - Will continue to leverage software engineering capacity to align with FY24 CNS priorities which includes continued delivery of Block 20 capabilities to enable global access to KRADOS for all AOCs, continue scaling KRADOS to support Major Theater War, continue supporting Integrated ISR Information Exchange, continue to build out Ops Support (e.g., Help Desk & Training) functions, continue development for KRADOS to process mission execution despite network availability/disconnected ops through delivery of persistent and resilient capability, enable interoperability, integration and collaborate planning with Joint community and begin Process Automation/Improved Decision Making efforts. - Will continue to optimize for Operational Energy (aviation fuel) use and increase combat capability through operations software development - Will continue to enable development and scaling of an extensible cloud-based IaaS/PaaS hosting platform/enterprise architecture along with the necessary services to support continuous software capability integration and delivery. <p><i>FY 2023 to FY 2024 Increase/Decrease Statement:</i> Funding redistributed for higher DoD priorities due to prior year execution balances</p>			
Accomplishments/Planned Programs Subtotals	87.873	78.889	72.059

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D. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2022	FY 2023	FY 2024	FY 2024	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	Cost To	
			Base	OCO	Total					Complete	Total Cost
• OPAF 03 834530: <i>Air & Space Operations Center (AOC)</i>	23.019	19.098	5.032	-	5.032	18.210	20.019	20.418	20.828	Continuing	Continuing
• OPAF 03 833140: <i>Strategic Command And Control</i>	0.668	30.738	9.962	-	9.962	5.413	1.866	1.883	28.316	Continuing	Continuing
• RDTE 07 0303248F: <i>All Domain Common Platform</i>	70.894	45.502	88.916	-	88.916	98.464	99.216	98.907	88.153	Continuing	Continuing

Remarks

FY22 to FY23 Project 674596 AOC WS Modification funding incorrect due to a database error. Project 674596 AOC WS Modification funding should equal FY22: \$77.873M; FY23: \$76.216M.

E. Acquisition Strategy

The acquisition strategy builds on agile software engineering solutions and modification of existing capabilities using an evolutionary acquisition approach to standardize and modify the AOC WS. The initial capability was AOC WS Increment 10.0, which fielded the 10.0 configuration to five operational sites, plus a Help Desk and a Formal Training Unit. The second increment, increment 10.1, upgraded these locations to an integrated baseline and fielded the baseline to additional operational and reserve units worldwide. AOC WS Modifications will leverage commercial best practices of Agile DevOps to scale out a modern virtual private cloud to the AOCs and scale up additional software product teams in support of retiring TBMCS FL and other legacy mission critical applications allowing for eventual disposal of the AOC 10.1 infrastructure. This enables dynamic resource allocation based on current warfighter needs. AOC operates under authority FY20 NDAA, Section 800, Software Acquisition Pathway.

AOC WS Modifications will leverage a modular contracting strategy that focuses on evolving needs, continuous market research and streamlined solicitation procedures. AOC WS Modifications leverages both small and large business contracts for specialized services and enterprise AOC support to adopt commercial best practices for software development and to scale out a modern IaaS/PaaS solution. Activities are also accomplished via Military Interdepartmental Purchase Requests (MIPR). Additionally, significant technical expertise will be sought after via modular contracting approach and provided by Government Agencies, DoD Laboratories, Federally Funded Research and Development Centers (FFRDC), Academia, and Engineering & Professional Acquisition Support Services contractors as well as commercial industry partners.

Program management for the AOC program is under direction of PEO Digital, located at Hanscom AFB, MA. The Air Force Life Cycle Management Center (AFLCMC) located at Hanscom AFB, MA is the contracting authority for the AOC program. AFLCMC provides contracting, legal, comptroller, programmatic, engineering, test, and logistics support.

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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 0207410F / Air & Space Operations Center (AOC)				674596 / AOC WS Modifications							
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
AOC WS Modifications Development	C/Various	Various : Multiple	-	57.754	Dec 2021	46.613	Jan 2023	38.701	Nov 2023	-		38.701	0.000	143.068	-
Subtotal			-	57.754		46.613		38.701		-		38.701	0.000	143.068	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
AOC WS Modifications Direct Mission Support	C/Various	Various : Various	-	2.563	Dec 2021	4.637	Nov 2022	5.913	Oct 2023	-		5.913	0.000	13.113	-
AOC WS Modifications Civilian Direct Cite Authorizations for Product Development	Allot	AFLCMC/FZA : TBD	-	14.056	Oct 2021	18.017	Oct 2022	18.036	Oct 2023	-		18.036	0.000	50.109	-
Subtotal			-	16.619		22.654		23.949		-		23.949	0.000	63.222	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
AOC WS Modifications Engineering Services	Various	Various : Various	-	4.389	Oct 2021	3.562	Nov 2022	3.306	Oct 2023	-		3.306	0.000	11.257	-
AOC WS Modifications Program Support	C/Various	Various : Various	-	9.111	Dec 2021	6.060	Jan 2023	6.103	Oct 2023	-		6.103	0.000	21.274	-
Subtotal			-	13.500		9.622		9.409		-		9.409	0.000	32.531	N/A
Project Cost Totals			-	87.873		78.889		72.059		-		72.059	0.000	238.821	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Air Force		Date: March 2023
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0207410F / Air & Space Operations Center (AOC)	Project (Number/Name) 674596 / AOC WS Modifications

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

AOC WS Modifications	
AOC WS Modifications Kessel Run	

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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 0207410F / Air & Space Operations Center (AOC)	Project (Number/Name) 674596 / AOC WS Modifications

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
AOC WS Modifications				
AOC WS Modifications Kessel Run	1	2022	4	2028