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

<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 0207410F / <i>Air &amp; Space Operations Center (AOC)</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	-	76.216	72.059	71.442	0.000	71.442	96.738	99.707	104.657	106.723	Continuing	Continuing
674596: <i>AOC WS Modifications</i>	-	76.216	72.059	71.442	0.000	71.442	96.738	99.707	104.657	106.723	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**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 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. Funding also provides software engineering capacity to deliver air operations capabilities improving speed and automation of the full air tasking cycle, including integration with unit-level sortie generation capabilities that feed friendly order of battle information to the Master Air Attack Plan process. 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.

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 FY2023, \$14.825M was expended for civilian pay expenses in this program element, and in FY2024, \$19.907M 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>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
Previous President's Budget	78.889	72.059	88.521	0.000	88.521
Current President's Budget	76.216	72.059	71.442	0.000	71.442
Total Adjustments	-2.673	0.000	-17.079	0.000	-17.079
• 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	-2.673	0.000			
• Other Adjustments	0.000	0.000	-17.079	0.000	-17.079

**Change Summary Explanation**

The FY2025 funding request decreased by \$10.000M due to funding reprogrammed from AOC RDT&E to AOC OMAF.

The FY2025 funding request decreased by \$7.200M due to the Air Force correcting a database error. Funding was reprogrammed from PE 0207410F, AOC, to PE 0604840F, F-35 C2D2.

The FY2025 funding request increased by \$0.121M due to an inflation adjustment.

<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
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<b>Title:</b> AOC WS Modifications Development	76.216	72.059	71.442
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**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. Improve speed and automation of the full air tasking cycle to include integration between operational-level and unit-level sortie generation capabilities of 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.

***FY 2024 Plans:***

- Improve the Kessel Run All-Domain Operations Suite (KRADOS) in operational use and scale across the AOC enterprise.
- Transition from legacy applications/systems such as TBMCS FL and AOC 10.1 baseline to AOC WS Block 20 modernized capabilities.

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<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 0207410F / <i>Air &amp; Space Operations Center (AOC)</i>		
<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<ul style="list-style-type: none"> <li>- Leverage software engineering capacity to align with FY2024 Capability Needs Statement 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 &amp; 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.</li> <li>- Optimize for Operational Energy (aviation fuel) use and increase combat capability through operations software development.</li> <li>- 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.</li> <li>- Improve speed and automation of the full air tasking cycle to include integration between operational-level and unit-level sortie generation capabilities that feed friendly order of battle information to the Master Air Attack Plan.</li> </ul> <p><b>FY 2025 Plans:</b></p> <ul style="list-style-type: none"> <li>- Will continue to improve the KRADOS in operational use and scale across the AOC enterprise.</li> <li>- Will continue the transition from legacy applications/systems such as TBMCS FL and AOC 10.1 baseline to AOC WS Block 20 modernized capabilities.</li> <li>- Will continue to leverage software engineering capacity to align with FY2025 Capability Needs Statement priorities, which includes achieving KRADOS multi-tenancy across the AOC enterprise; expanding access to mission partners to support Denied, Disrupted, Intermittent, and Limited bandwidth scenarios; achieving KRADOS Major Theater War capabilities/capacity across the AOC enterprise; conducting functional AOC, Joint and Mission Partner Assessments; completing transition from hybrid cloud to fully leverage a commercial cloud service provider; preparing to conduct Operational Test and Evaluation to declare KRADOS fully operationally capable; and continuing investment in Dynamic Targeting and streamlined workflows.</li> <li>- Will continue to optimize for Operational Energy (aviation fuel) use and increase combat capability through operations software development.</li> <li>- 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.</li> <li>- Will continue to improve speed and automation of the full air tasking cycle to include integration between operational-level and unit-level sortie generation capabilities that feed friendly order of battle information to the Master Air Attack Plan.</li> </ul> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> FY2025 funding decreases by \$0.617M to align program development efforts with Capability Needs Statement priorities.</p>				
<b>Accomplishments/Planned Programs Subtotals</b>		76.216	72.059	71.442

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

<u>Line Item</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u> <u>Base</u>	<u>FY 2025</u> <u>OCO</u>	<u>FY 2025</u> <u>Total</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>FY 2029</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• OPAF 03 834530: <i>Air &amp; Space Operations Center (AOC)</i>	19.816	4.609	20.664	-	20.664	22.414	23.201	23.700	24.168	Continuing	Continuing
• OPAF 03 833140: <i>Strategic Command And Control</i>	30.738	9.991	5.431	-	5.431	1.862	1.906	28.700	29.267	Continuing	Continuing
• RDTE 07 0303248F: <i>All Domain Common Platform</i>	44.989	71.296	82.927	-	82.927	87.575	92.589	88.829	90.583	Continuing	Continuing

**Remarks**

**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 2025 Air Force												Date: March 2024				
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								
<b>Product Development (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 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	-	46.493	Jan 2023	35.376	Nov 2023	34.683	Nov 2024	-		34.683	Continuing	Continuing	-	
<b>Subtotal</b>			-	46.493		35.376		34.683		-		34.683	Continuing	Continuing	N/A	
<b>Support (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 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	-	4.241	Nov 2022	4.848	Oct 2023	5.847	Oct 2024	-		5.847	Continuing	Continuing	-	
AOC WS Modifications Civilian Direct Cite Authorizations for Product Development	Allot	AFLCMC/FZA : TBD	-	14.825	Oct 2022	19.907	Oct 2023	19.994	Oct 2024	-		19.994	Continuing	Continuing	-	
<b>Subtotal</b>			-	19.066		24.755		25.841		-		25.841	Continuing	Continuing	N/A	
<b>Management Services (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 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	-	3.655	Nov 2022	2.631	Oct 2023	3.614	Oct 2024	-		3.614	Continuing	Continuing	-	
AOC WS Modifications Program Support	C/Various	Various : Various	-	7.002	Jan 2023	9.297	Oct 2023	7.304	Oct 2024	-		7.304	Continuing	Continuing	-	
<b>Subtotal</b>			-	10.657		11.928		10.918		-		10.918	Continuing	Continuing	N/A	
<b>Project Cost Totals</b>			-	76.216		72.059		71.442		-		71.442	Continuing	Continuing	N/A	
<b>Remarks</b>																

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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0207410F / Air & Space Operations Center (AOC)	<b>Project (Number/Name)</b> 674596 / AOC WS Modifications

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

<b>AOC WS Modifications</b>	
Continuous AOC Block 20 Deliveries	
Major Theater War	
Multi-Tenancy	
Joint Planning	
Dynamic Targeting	

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0207410F / Air & Space Operations Center (AOC)	<b>Project (Number/Name)</b> 674596 / AOC WS Modifications

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>AOC WS Modifications</b>				
Continuous AOC Block 20 Deliveries	1	2023	4	2029
Major Theater War	1	2023	1	2025
Multi-Tenancy	1	2023	1	2025
Joint Planning	1	2024	3	2025
Dynamic Targeting	1	2024	2	2026