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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 0207410F / <i>Air & Space Operations Center (AOC)</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	-	50.133	90.027	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
674596: <i>AOC WS Modifications</i>	-	50.133	90.027	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

In FY 2023, PE 0207410F, Air & Space Operations Center (AOC), Project 674596, AOC WS Modifications, was transferred to PE 0608410F, Air & Space Operations Center (AOC), Project 684596, AOC WS Modifications, in order to a participate in DoD's Budget Activity 08 for Software and Digital Technology Pilot Program.

A. Mission Description and Budget Item Justification

The Air Operations Center Weapon System (AOC WS), AN/USQ-163 Falconer, the senior element of the Theater Air Control System (TACS), 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 while delivering, enabling and operating an extensible cloud-based Infrastructure and Platform as a Service (IaaS/PaaS) hosting platform. AOC WS Modifications are required for the AOC to keep pace with evolving COTS/GOTS components, DoD directives, support operational energy security and efficiency objectives, changes in the underlying IT environment, and to remain interoperable, certified, supportable, and compliant through software engineering solutions, integration, testing, fielding, training, and sustainment of new capabilities and upgrades to the AOC WS. This includes utilization of managed cloud IaaS/PaaS hosting platform. Also, AOC WS Modifications activities evolve the AOC utilizing Agile Methodologies and embracing DevOps practices to deliver improved capabilities in support of mission requirements at Geographic and Global (formerly Functional) AOCs, as well as Support and Manpower Augmentation units, keeping the AOC current and interoperable with the Combatant Commands (CCMDs), cyber requirements, and next generation weapon systems/weapons.

No FY 2023 funding requested; FY 2023 project efforts are detailed in PE 0308606F, ADCP, and PE 0608410F, AOC.

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

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0606398F. In FY2021 \$19.087M was expended for civilian pay expenses in this program element, and in FY2022 \$15.699M 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 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Previous President's Budget	51.094	0.003	0.000	0.000	0.000
Current President's Budget	50.133	90.027	0.000	0.000	0.000
Total Adjustments	-0.961	90.024	0.000	0.000	0.000
• 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	90.024			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-0.961	0.000			
• Other Adjustments	0.000	0.000	0.000	0.000	0.000

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.

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

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Title: AOC WS Modifications Development	47.602	69.524	0.000	0.000	0.000
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.					

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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
<p>Utilize CI/CD processes to provide engineering solutions, test, and deliver enhanced operational C2 capabilities including support of multi-domain operations.</p> <p>FY 2022 Plans:</p> <ul style="list-style-type: none"> - Enable the continued transition from legacy applications such as TBMCS FL and AOC 10.1 to Block 20 Modernized capabilities - Continue supporting software engineering capacity required for AOC WS Modifications to enable transition from legacy AOC 10.1 baseline to AOC WS Block 20 modernized capabilities - Continue to optimize Operational Energy (aviation fuel) use and increase combat capability through operations software development <p>FY 2023 Base Plans: See PE 0308606F, ADCP - Software Pilot Program, Project 682015, All Domain Common Platform, and PE 0608410F, AOC, Project Number 684596, AOC WS Modifications.</p> <p>FY 2023 OCO Plans: N/A</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement: Funding decreased due to transfer to PE 0608410F, AOC, Project Number 684596, AOC WS Modifications.</p> <p>Title: AOC WS Modifications Direct Mission Support</p> <p>Description: Plan and execute strategies to adopt commercial best practices for software development, scale out a modern IaaS/PaaS solution to the AOC WS enterprise, implement improved solutions for platform architecture and CI/CD pipeline, and maintain continuous Authority to Operate (ATO).</p> <p>FY 2022 Plans:</p> <ul style="list-style-type: none"> - Provide the competencies necessary to scale software development capacity and deprecation of TBMCS FL - Continue to enable development and establishment of extensible cloud-based IaaS/PaaS hosting platform/ enterprise architecture baseline environment <p>FY 2023 Base Plans: See PE 0308606F, ADCP - Software Pilot Program, Project 682015, All Domain Common Platform, and PE 0608410F, AOC, Project Number 684596, AOC WS Modifications.</p> <p>FY 2023 OCO Plans:</p>	2.531	20.503	0.000	0.000	0.000

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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
N/A					
FY 2022 to FY 2023 Increase/Decrease Statement:					
Funding decreased due to transfer to PE 0608410F, AOC, Project Number 684596, AOC WS Modifications.					
Accomplishments/Planned Programs Subtotals	50.133	90.027	0.000	0.000	0.000

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 834530: <i>Air & Space Operations Center (AOC)</i>	15.383	23.019	2.611	-	2.611	0.000	0.000	0.000	0.000	Continuing	Continuing
• OPAF 03 833140: <i>Strategic Command And Control</i>	0.000	3.541	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
• RDTE 07 0303248F: <i>All Domain Common Platform</i>	0.000	64.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
• RDTE 08 0308606F: <i>All Domain Common Platform (ADCP) - Software Pilot Program</i>	0.000	0.000	190.112	-	190.112	175.196	190.889	187.666	188.307	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, following DoDI 5000.87, Operation of Software Acquisition Pathway Guidance. The desired end state is continuous delivery of all AOC WS software.

AOC WS Modifications will leverage a modular contracting strategy that focuses on evolving needs, continuous market research and streamlined solicitation procedures. AOC 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 Infrastructure as a Service/Platform as a Service (IaaS/PaaS) solution. Activities are also accomplished via Military

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<p>Interdepartmental Purchase Requests (MIPR). Additionally, significant technical expertise will be sought after via modular contracting approach and provided by Government Agencies, DoD Laboratory, Federally Funded Research and Development Centers (FFRDC), Academia, and Engineering & Professional Acquisition Support Services contractors as well as commercial industry partners.</p>		

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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 0207410F / Air & Space Operations Center (AOC)				674596 / AOC WS Modifications								
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	
AOC WS Modifications Development	C/Various	Various : Multiple	-	22.007	Dec 2020	58.372	Dec 2021	-		-		-	0.000	80.379	-	
AOC WS Modifications Other Transaction	Various	Pivotal : Multiple	-	1.534	Dec 2020	-		-		-		-	0.000	1.534	-	
Subtotal			-	23.541		58.372		-		-		-	0.000	81.913	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	
AOC WS Modifications Direct Mission Support	C/Various	Various : Various	-	2.531	Dec 2020	4.804	Dec 2021	-		-		-	0.000	7.335	-	
AOC WS Modifications Civilian Direct Cite Authorizations for Product Development	Allot	AFLCMC/FZA : TBD	-	19.087	Oct 2020	15.699	Oct 2021	-		-		-	0.000	34.786	-	
Subtotal			-	21.618		20.503		-		-		-	0.000	42.121	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	
AOC WS Modifications Engineering Services	Various	Various : Various	-	3.485	Oct 2020	4.423	Oct 2021	-		-		-	0.000	7.908	-	
AOC WS Modifications Program Support	C/Various	Various : Various	-	1.489	Dec 2020	6.729	Dec 2021	-		-		-	0.000	8.218	-	
Subtotal			-	4.974		11.152		-		-		-	0.000	16.126	N/A	
Project Cost Totals			-	50.133		90.027		-		-		-	0.000	140.160	N/A	

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Air Force							Date: April 2022			
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				
	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract	

Remarks

In FY23 AOC funding transferred to PE 0608410F, Air & Space Operations Center (AOC), Project 684596, AOC WS Modifications.

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

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

AOC WS Modifications	
AOC WS Modifications Kessel Run	

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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 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	2021	4	2022

Note
See PE 0308606F, All Domain Common Platform (ADCP) - Software Pilot Program, Project 682015, All Domain Common Platform, and PE 0608410F, Air & Space Operations Center (AOC), Project Number 684596, AOC WS Modifications for continued development events.