

UNCLASSIFIED

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 8: Software and Digital Technology Pilot Programs</i>	R-1 Program Element (Number/Name) PE 0608410F / <i>Air & Space Operations Center (AOC) - Software Pilot Program</i>
---	---

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	-	0.000	0.000	177.827	0.000	177.827	171.359	172.969	176.854	180.788	Continuing	Continuing
684596: <i>AOC - Software Pilot Program</i>	-	0.000	0.000	177.827	0.000	177.827	171.359	172.969	176.854	180.788	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note
 In FY 2023, PE 0608410F, Air & Space Operations Center (AOC), Project 684596, AOC WS Modifications, was transferred from RDT&E, AF, PE 0207410F, Air & Space Operations Center (AOC), Project 674596, AOC WS Modifications, OPAF PE 0207410F, Air & Space Operations Center (AOC), Line Item 834530, AOC, and OMAF Operating Forces, Activity Group, Air Operations, Sub-Activity Group 11C, Combat Enhances Forces, in order to a participate in DoD's Budget Activity 08 (BA08) for Software and Digital Technology Pilot Program.

A. Mission Description and Budget Item Justification

The FY 2018 National Defense Authorization Act (Sections 873/874) directed the Office of the Secretary of Defense (OSD) to streamline software development. The Air & Space Operations Center (AOC) - Software Pilot Program is an OSD pilot initiative in which all lifecycle funding is tracked under Budget Activity 08 (BA08), Software and Digital Technology Pilot Programs, beginning in FY 2021. Pilot programs enable the execution of modern software development practices encompassing development, procurement, modification and maintenance activities. This program includes RDT&E, procurement, and Operations and Maintenance funds transferred from PE 0207410F, Air & Space Operations Center (AOC).

The 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.

In FY 2023, 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. Also in FY 2023, AOC WS Modifications activities evolve the AOC utilizing Agile Methodologies and embracing DevOps

UNCLASSIFIED

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 8: Software and Digital Technology Pilot Programs</i>	R-1 Program Element (Number/Name) PE 0608410F / <i>Air & Space Operations Center (AOC) - Software Pilot Program</i>
---	---

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.

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, 0606398F. In PY \$0.000M was expended for civilian pay expenses in this program element, and in CY \$0.000M is forecasted for civilian pay expenses in this program element.

This program is in Budget Activity 8, Software and Digital Technology Pilot Program because this budget activity includes funding provided for expenses necessary for agile development, test and evaluation, procurement, production and modification, and the operation and maintenance of these programs.

B. Program Change Summary (\$ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Previous President's Budget	0.000	186.915	0.000	0.000	0.000
Current President's Budget	0.000	0.000	177.827	0.000	177.827
Total Adjustments	0.000	-186.915	177.827	0.000	177.827
• 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	-186.915			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	177.827	0.000	177.827

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: AOC WS Modifications - Development	0.000	0.000	79.549	0.000	79.549
Description: Plan and execute strategies to deliver war fighting outcomes by leveraging commercial best practices for agile software development, scale a modern Infrastructure as a Service/Platform as a Service (IaaS/PaaS) solution to the AOC WS enterprise, implement improved solutions for platform architecture and					

UNCLASSIFIED

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 8: Software and Digital Technology Pilot Programs</i>		R-1 Program Element (Number/Name) PE 0608410F / <i>Air & Space Operations Center (AOC) - Software Pilot Program</i>			
C. Accomplishments/Planned Programs (\$ in Millions)					
<p>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.</p> <p>FY 2022 Plans: See PE 0207410F, Air & Space Operations Center (AOC), Project Number 674596, AOC WS Modifications.</p> <p>FY 2023 Base 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 OCO Plans: N/A</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement: Funding increased due to transfer from RDT&E, AF, PE 0207410F, Air & Space Operations Center (AOC), Project 674596, AOC WS Modifications.</p>					
Title: AOC WS Modifications - Procurement					
Description: Provides hardware, software, technical documents, fielding support, Capital Equipment Replacement (CER) (e.g., replacing end of life/end of support Direct Mission Support (DMS) and 3rd Party components), core radio system and initial training to standardize the AOC WS to keep it interoperable, supportable and compliant (e.g., certification and accreditation). Also includes integration, test and fielding for cyber security improvements and existing 3rd Party modernized improvements/modifications.					
FY 2022 Plans: See PE 0207410F, Air & Space Operations Center (AOC), Line Item 834530, AOC.					
FY 2023 Base Plans:					
	0.000	0.000	19.142	0.000	19.142

UNCLASSIFIED

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 8: Software and Digital Technology Pilot Programs</i>	R-1 Program Element (Number/Name) PE 0608410F / <i>Air & Space Operations Center (AOC) - Software Pilot Program</i>
---	---

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
<p>- Integration/fielding of improvements/upgrades of existing 3rd Party applications as well as newly developed replacement applications, CER and baseline updates. Address commercial end-of-life and DMS components including components associated with C2 applications (3rd Party COTS/GOTS)</p> <p>- Support moving the AOC WS toward a cloud-based commercially managed Infrastructure and Platform as a Service (IaaS/ PaaS)</p> <p>- Provide Baseline Releases, periodic maintenance upgrades, emergency fixes, cyber security improvements and other activities (e.g., testing activities)</p> <p>FY 2023 OCO Plans: N/A</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement: Funding increased due to transfer from OPAF PE 0207410F, Air & Space Operations Center (AOC), Line Item 834530, AOC.</p>					
<p>Title: AOC WS Modifications - Sustainment</p> <p>Description: Operations and Maintenance efforts sustain the fielded AOC WS including critical 3rd party applications and provides the foundation to transition to AOC WS Block 20. Supports current fielded capabilities such as TBMCS for joint-partner interoperability and enterprise use cases as required during transition to Block 20. Provides critical integration and sustainment support to legacy 3rd party systems, infrastructure support, on-premise technical support and assistance, addresses cybersecurity requirements, hardware/software license renewals, release engineering services, help desk activities, testing operational, performance, functional and security requirements, quality assurance, configuration management, and documentation support.</p> <p>FY 2022 Plans: See OMAF Operating Forces, Activity Group, Air Operations, Sub-Activity Group 11C, Combat Enhances Forces.</p> <p>FY 2023 Base Plans: - Continue sustainment and integration activities to the current AOC WS baseline and support Block 20 Operational C2 presentation of capability as it is delivered</p> <p>FY 2023 OCO Plans: N/A</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement:</p>	0.000	0.000	79.136	0.000	79.136

UNCLASSIFIED

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

Appropriation/Budget Activity 3600: Research, Development, Test & Evaluation, Air Force I BA 8: Software and Digital Technology Pilot Programs	R-1 Program Element (Number/Name) PE 0608410F I Air & Space Operations Center (AOC) - Software Pilot Program
--	--

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Funding increased due to transfer from OMAF Operating Forces, Activity Group, Air Operations, Sub-Activity Group 11C, Combat Enhances Forces.					
Accomplishments/Planned Programs Subtotals	0.000	0.000	177.827	0.000	177.827

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

Line Item	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
• OPAF 03 834530: Air & Space Operations Center (AOC)	15.383	23.019	2.611	-	2.611	0.000	0.000	0.000	0.000	Continuing	Continuing
• OPAF 03 833140: Strategic Command And Control	0.000	3.541	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
• RDTE 07 0303248F: All Domain Common Platform	0.000	64.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
• RDTE 08 0308606F: All Domain Common Platform (ADCP) - Software Pilot Program	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 evolutionary acquisition 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 Interdepartmental Purchase Requests (MIPR). Additionally, significant technical expertise will be sought after via modular contracting approach and provided by

UNCLASSIFIED

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

Appropriation/Budget Activity	R-1 Program Element (Number/Name)
3600: <i>Research, Development, Test & Evaluation, Air Force I BA 8: Software and Digital Technology Pilot Programs</i>	PE 0608410F / <i>Air & Space Operations Center (AOC) - Software Pilot Program</i>

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.

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Air Force **Date:** April 2022

Appropriation/Budget Activity 3600 / 8	R-1 Program Element (Number/Name) PE 0608410F / Air & Space Operations Center (AOC) - Software Pilot Program	Project (Number/Name) 684596 / AOC - Software Pilot Program
--	--	---

Product Development (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
AOC WS Modifications Development	C/Various	Various : Multiple	-	-		-		48.288	Dec 2022	-		48.288	0.000	48.288	48.288
AOC WS Modifications Materials	C/Various	Various : Mutiple	-	-		-		10.530	Dec 2022	-		10.530	0.000	10.530	10.530
AOC WS Modifications Sustainment	C/Various	Various : Multiple	-	-		-		41.524	Dec 2022	-		41.524	0.000	41.524	41.524
AOC WS Modifications Other Transaction	Various	Pivotal : Multiple	-	-		-		0.000		-		0.000	0.000	0.000	0.000
Subtotal			-	-		-		100.342		-		100.342	0.000	100.342	N/A

Support (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
AOC WS Modifications Direct Mission Support	C/TBD	Various : Various	-	-		-		31.538	Dec 2022	-		31.538	0.000	31.538	31.538
AOC WS Modifications Civilian Direct Cite Authorizations for Product Development	Allot	AFLCMC/FZA : TBD	-	-		-		14.637	Oct 2022	-		14.637	0.000	14.637	-
Subtotal			-	-		-		46.175		-		46.175	0.000	46.175	N/A

Management Services (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
AOC WS Modifications Engineering Services	Various	Various : Various	-	-		-		4.724	Oct 2022	-		4.724	0.000	4.724	4.724
AOC WS Modifications Program Support	C/Various	Various : Various	-	-		-		26.586	Dec 2022	-		26.586	0.000	26.586	26.586
Subtotal			-	-		-		31.310		-		31.310	0.000	31.310	N/A

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Air Force							Date: April 2022				
Appropriation/Budget Activity 3600 / 8			R-1 Program Element (Number/Name) PE 0608410F / Air & Space Operations Center (AOC) - Software Pilot Program			Project (Number/Name) 684596 / AOC - Software Pilot Program					
	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract		
Project Cost Totals	-	-	-	177.827	-	177.827	0.000	177.827	N/A		

Remarks

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Air Force		Date: April 2022
Appropriation/Budget Activity 3600 / 8	R-1 Program Element (Number/Name) PE 0608410F / Air & Space Operations Center (AOC) - Software Pilot Program	Project (Number/Name) 684596 / AOC - Software Pilot Program

	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	

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Air Force		Date: April 2022
Appropriation/Budget Activity 3600 / 8	R-1 Program Element (Number/Name) PE 0608410F / Air & Space Operations Center (AOC) - Software Pilot Program	Project (Number/Name) 684596 / AOC - Software Pilot Program

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
AOC WS Modifications				
AOC WS Modifications Kessel Run	1	2023	4	2027

Note

See PE 0207410F, Air & Space Operations Center (AOC), Project Number 674596, AOC WS Modifications for prior years development events.