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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 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0708051F / <i>Rapid Sustainment Modernization (RSM)</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	-	90.117	69.000	43.431	0.000	43.431	26.976	23.734	24.387	26.118	0.000	303.763
648051: <i>Rapid Sustainment Modernization Technologies</i>	-	90.117	69.000	43.431	0.000	43.431	26.976	23.734	24.387	26.118	0.000	303.763
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

The Rapid Sustainment Modernization program provides funding to the Rapid Sustainment Office (RSO). The RSO will develop, test and deploy new technologies for implementation across the sustainment enterprise, to improve readiness, and reduce sustainment costs.

RSO will achieve this by reaching across the sustainment enterprise to include the warfighter, depot maintenance, field maintenance, supply chain and program offices to identify enterprise needs. RSO will then identify, assess, develop, validate and verify new technology projects that support these areas, all while reducing costs and increasing aircraft readiness

RSO New Sustainment technologies such as; Conditioned Based Mtx Plus (CBM+), Advanced Manufacturing (Additive Manufacturing/Coldspray), RSM Technologies to include Digital Engineering, Automation/Robotics, Augmented and Virtual Reality, Austere/Contested environments, Intermittent Fault Detection (IFD) and Black Gold compressor blade coating are evaluated across the technology space in support of the Department of the Air Force (DAF) sustainment enterprise.

This is a new program element created based off the FY 2021 appropriation line item 56A. This requirement is not a new start as it was previously funded and executed with DAF Research, Development, Test and Evaluation (RDT&E) funding.

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 FY 2023 \$0 was expended for civilian pay expenses in this program element.

This effort is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P), because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

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B. Program Change Summary (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	65.000	0.000	0.000	0.000	0.000
Current President's Budget	90.117	69.000	43.431	0.000	43.431
Total Adjustments	25.117	69.000	43.431	0.000	43.431
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	19.445	69.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	5.672	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	43.431	0.000	43.431
C. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023	FY 2024		
Title: Rapid Sustainment Modernization-AM	90.117	69.000	36.231		
Description: Advanced Repair and Qualification					
FY 2023 Plans: Assess new technologies/equipment and develop standardizes processes to allow for procurement of equipment with appropriate funding Bring AM under a single umbrella program to focus technology growth via the RSM AM AGORA Marketplace: a centralized platform accessible via Cloud One to access Government AM capabilities, AM part requests/approvals, and approved AM hardware					
FY 2024 Plans: Continue to assess new technologies/equipment and develop standardizes processes to allow for procurement of equipment with appropriate funding Continue to bring AM under a single umbrella program to focus technology growth via the RSM AM AGORA Marketplace: a centralized platform accessible via Cloud One to access Government AM capabilities, AM part requests/approvals, and approved AM hardware					
FY 2023 to FY 2024 Increase/Decrease Statement: Funds decreased due to reduced congressional add funds					
Title: Rapid Sustainment Modernization-RSM Technologies	-	0.000	5.300		
Description: RSM Technologies					

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C. Accomplishments/Planned Programs (\$ in Millions)		FY 2022	FY 2023	FY 2024
<p>FY 2023 Plans: None</p> <p>FY 2024 Plans: Intermittent Fault Detection (IFD): Supports efforts to address the No Fault Found issue by enabling the investigation of IFD technologies and the associated process by which to test, evaluate, identify best of breed, deploy, and sustain the assets.</p> <p>Black Gold: Accomplish testing and evaluation of the Black Gold compressor blade coating on turbine engines to enable certification and fleet integration of the coatings on aircraft engines for enhancement of fuel efficiency, improved erosion protection, and associated sustainment benefits.</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: Increase due to receiving RSIP funds</p>				
<p>Title: Rapid Sustainment Modernization-CBM+</p> <p>Description: CBM+</p> <p>FY 2023 Plans: None</p> <p>FY 2024 Plans: Implementation, expansion, sustainment, and enhancement of CBM+ SBA processes and CBM+ tool-kit to improve reliability of weapon systems, minimize Logistics Analytics Data Environment (BLADE) to enhance the synthesis of data across the enterprise and enhance analysis/unscheduled repairs, synchronize maintenance actions, reduce mission aborts, decrease maintenance costs, and reduce cycle time through Enhanced Reliability Centered Maintenance (eRCM) and Sensor Based Algorithms (SBAs) CBM+ will use databases and information systems such as Basing and decision making information in the RSM CBM+ tool-kit (PANDA) Investment funding will be used for expansion of software enhancements in Panda and sensor based efforts such as aircraft (a/c) sensor 1553 (BUS) box decoders, sniffers, and SBA advancements.</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: Increase due to receiving RSIP funds</p>		-	0.000	1.900
Accomplishments/Planned Programs Subtotals		90.117	69.000	43.431

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

<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 04 845010: <i>Base Procured Equipment</i>	0.000	0.000	20.345	0.000	20.345	20.723	21.159	21.589	22.236	0.000	106.052

Remarks

E. Acquisition Strategy

Funding in this program is used toward Rapid Sustainment Office requirements.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Air Force **Date:** March 2023

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Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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			
Advanced Manufacturing(Additive and Coldspray)	Various	Various : Wright Patterson, OH	-	84.445	Mar 2023	69.000	Dec 2023	34.420	Dec 2023	-		34.420	Continuing	Continuing	-
Conditioned Based Maintenance(CBM+)	Various	Various : Wright Patterson, OH	-	0.000	Dec 2022	-		1.800	Dec 2023	-		1.800	Continuing	Continuing	-
RSM Technologies	Various	Various : Wright Patterson, OH	-	5.672	Apr 2023	-		5.039	Dec 2023	-		5.039	Continuing	Continuing	-
Subtotal			-	90.117		69.000		41.259		-		41.259	Continuing	Continuing	N/A

Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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			
Program Management Adminstration (PMA)	Various	Various : Wright Patterson, OH	-	-		-		2.172	Dec 2023	-		2.172	Continuing	Continuing	-
Subtotal			-	-		-		2.172		-		2.172	Continuing	Continuing	N/A

	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract	
Project Cost Totals		-	90.117	69.000	43.431	-	43.431	Continuing	Continuing	N/A

Remarks
 FY20 - New areas of additive manufacturing and cold spray technologies, equipment and qualification processes that are maturing and providing benefit to the DAF
 FY21 - Digital Engineering/Digital Twin: digital transformation of the existing Air Force fleet to increase operational readiness levels, decrease parts obsolescence and diminishing manufacturing sources required to get mission capable rates to acceptable levels

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Air Force		Date: March 2023
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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

Advanced Repair and Qualification Processes	
AM/Cold Spray	
Conditioned Based Maintenance Plus	
CBM+	
RSM Technologies	
RSM Technologies	

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Air Force		Date: March 2023
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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Advanced Repair and Qualification Processes</i>				
AM/Cold Spray	2	2022	4	2028
<i>Conditioned Based Maintenance Plus</i>				
CBM+	2	2022	4	2028
<i>RSM Technologies</i>				
RSM Technologies	2	2022	4	2028