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

Appropriation/Budget Activity 3620F: <i>Research, Development, Test & Evaluation, Space Force I BA 8: Software and Digital Technology Pilot Programs</i>	R-1 Program Element (Number/Name) PE 1203614SF / <i>JSpOC Mission System</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	0.000	155.067	154.529	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	309.596
68A035: <i>SSA/BMC2</i>	0.000	155.067	154.529	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	309.596
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-	-	-

Program MDAP/MAIS Code: N82

A. Mission Description and Budget Item Justification

In FY 2023, PE 1203614SF, Project 68A035 SSA/BMC2 efforts was transferred to PE 1208248SF, Enterprise Space BMC2, Project 68A035 SSA/BMC2, for Space C2 software program transparency.

The FY 2018 National Defense Authorization Act (Sections 873/874) directed the Office of the Secretary of Defense (OSD) to streamline software development. The Space Command and Control (C2) 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 Research, Development, Test & Evaluation (RDT&E), Space Procurement, and Operations and Maintenance funds transferred from within PE 1203614F, JSpOC Mission Systems and consolidated into the RDT&E appropriation.

The Space Force is developing a Space C2 and Space Domain Awareness (SDA) capability for the Combined Force Space Component Commander (CFSCC) and the Joint Task Force - Space Defense (JTF-SD). The Space C2 program provides a collaborative environment that will enhance and modernize SDA and Battle Management C2 (BMC2) capabilities; create decision-relevant views of the space and multi-domain environment; rapidly detect, track and characterize objects of interest; identify / exploit traditional and non-traditional sources; perform space threat analysis; and enable efficient distribution of data across the Space Surveillance Network (SSN). The program maintains enterprise infrastructure, platform and data services, and develops mission applications to enable responsive, resilient operational-level Space C2 capabilities for the National Space Defense Center (NSDC), Combined Space Operations Center (CSpOC), 18th Space Control Squadron (SPCS) and other C2 centers. Employing an agile-based Rapid Delivery Framework with a 90-day Program Increment (PI) construct fosters a collaborative and integrated environment for the community to effectively plan and deliver C2 capabilities. The enterprise-wide system will provide a common government infrastructure and standards for rapid prototyping of dynamic SDA and BMC2 applications to address the evolving and dynamic threat. The system will provide a collaborative environment that will enhance and modernize SDA and BMC2 capabilities. Funding includes technical studies, development, experimentation, integration and related support costs.

Space acquisition must respond with speed and agility to emerging adversary threats. Space Systems Command (SSC) has transformed the organization and implementation of space acquisition to an enterprise approach, to increase innovation and resiliency, leveraging international, commercial, and mission partnerships, and managing program/project priorities according to an integrated unclassified/classified enterprise space architecture. Expanding the appropriate acquisition authorities and contract mechanisms to deliver capability sooner, SSC will strategically execute experimentation, prototyping, risk reduction, and other efforts to develop new or repurpose existing capabilities.

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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 Elements 1206392SF and 1206398SF. In PY 120K was expended for civilian pay expenses in this Program Element, and in CY 0 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 & Evaluation, Procurement, Production and Modification, and the Operation and Maintenance of these programs.

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	149.742	154.529	0.000	0.000	0.000
Current President's Budget	155.067	154.529	0.000	0.000	0.000
Total Adjustments	5.325	0.000	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	0.000			
• Reprogrammings	9.999	0.000			
• SBIR/STTR Transfer	-4.674	0.000			
• Other Adjustments	0.000	0.000	0.000	0.000	0.000

Change Summary Explanation

FY 2021: \$9.999M increase for Warp Core data platform for machine-to-machine access to and integration from data sources and -\$4.674M decrease for SBIR.

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Title: Enterprise Space BMC2 Development	125.364	112.186	0.000	0.000	0.000
Description: This program delivers a robust and responsive Space Domain Awareness (SDA) and Battle Management Command and Control (BMC2) capability to meet emerging threats. The program will deliver capability for decision makers trying to prevent a conflict from extending to space, or winning it if it does. Capabilities and associated infrastructure include, but are not limited to, the following: SDA, Indications & Warning (I&W), Transmit/Receive, Space Control, Tactical Operations and Common Data Management Layer,					

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C. Accomplishments/Planned Programs (\$ in Millions)						
<p>Platforms and Infrastructure; and Cyber and Threat Warning. The program maintains foundational DevSecOps enablers such as, but not limited to, Data as a Service, Platform Support, Continuous Improvement/Continuous Deployment (CI/CD) toolchain, and infrastructure and inherent sustainment efforts that are an integral part of the agile software development process. Other activities include dedicated Systems Engineering & Integration (SE&I), Test & Evaluation (T&E), Model Based Systems Engineering (MBSE) and prototype Validation & Verification to support these efforts.</p> <p>FY 2022 Plans: Plan and develop a message standard compliant open architecture to support both the SDA and BMC2 missions to meet dynamic emerging threats. The enterprise architecture and platform/infrastructure will modernize and deliver new capabilities in the NSDC, CSpOC, and other operations centers supporting SDA, BMC2, Theater Support, Data Analytics & Visualization, and Modeling & Simulation tools. Continue developmental, system engineering and contracting efforts to integrate best in breed commercial, contractor, and government applications through the release of multiple incremental software capability drops throughout FY 2022. Additionally, FY 2022 funding will allow the program to implement system resiliency and situational awareness necessary to operate in the contested space domain. Activities include, but are not limited to, program office support, studies, technical analysis, experimentation, and prototyping.</p> <p>FY 2023 Base Plans: N/A</p> <p>FY 2023 OCO Plans: N/A</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement: FY 2023 decreased as efforts were transferred to PE 1208248SF, Enterprise Space BMC2, Project 68A035 SSA/BMC2, for Space C2 software program transparency.</p>						
Title: Space C2 Sustainment		29.703	42.343	0.000	0.000	0.000
<p>Description: The program maintains existing capability for the CSpOC, NSDC and other C2 centers. These tasks include maintaining the Commercial Off The Shelf (COTS) software database, removing and canceling decommissioned systems and unused tools, adding new tools required for ongoing support of the system, maintaining data support systems, and maintaining day to day software operations which continuously ensures and optimizes reliability, security, resiliency, availability, flexibility and scalability of the warfighter tools. The program maintains foundational DevSecOps enablers such as, but not limited to, Data as a Service, Platform</p>						

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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Support, Continuous Improvement/Continuous Deployment (CI/CD) toolchain, and infrastructure and inherent sustainment efforts that are an integral part of the agile software development process.					
<i>FY 2022 Plans:</i> SSC will continue to fund government software centers, laboratories, and contractors for supporting the update, maintenance and modification, integration, configuration management and cybersecurity requirements of legacy software and associated hardware. Activities may include, but are not limited to, software license acquisition, program office support, studies, and technical analysis.					
<i>FY 2023 Base Plans:</i> N/A					
<i>FY 2023 OCO Plans:</i> N/A					
<i>FY 2022 to FY 2023 Increase/Decrease Statement:</i> FY 2023 decreased as efforts were transferred to PE 1208248SF, Enterprise Space BMC2, Project 68A035 SSA/BMC2, for Space C2 software program transparency.					
Accomplishments/Planned Programs Subtotals	155.067	154.529	0.000	0.000	0.000

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

Remarks

E. Acquisition Strategy
The Space Force is employing agile software development practices such as flexible requirements, frequent user interaction, and rapid delivery and deficiency retirement. The program acquires tools and capabilities through an agile-based Rapid Delivery Framework that delivers and sustains new features and capabilities through a CI/CD pipeline with 90-day Program Increments. This strategy focuses on rapidly delivering capability to warfighters and leveraging commercial, industry and government partners. Currently there are multiple contractors performing on competitively-awarded contracts with no single prime contractor responsible for the entire ecosystem.

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

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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			
Space C2 Technical Mission Analysis (WS) Development	RO	Aerospace : El Segundo, CA	0.000	1.000	Jan 2021	2.000	Dec 2021	-		-		-	0.000	3.000	-
Space C2 Enterprise Systems Engineering & Integration Development	Various	Various : various	0.000	5.351	Nov 2020	5.267	Nov 2021	-		-		-	0.000	10.618	-
Space C2 Applications Development	Various	Various : Various	0.000	107.196	Nov 2020	89.314	Nov 2021	-		-		-	0.000	196.510	-
Space C2 Platform Sustainment	Various	Various : Various	0.000	20.240	Dec 2020	22.263	Dec 2021	-		-		-	0.000	42.503	-
Space C2 Infrastructure Sustainment	Various	Various : Various	0.000	4.000	Dec 2020	3.588	Dec 2021	-		-		-	0.000	7.588	-
Legacy System Sustainment	Various	Various : Various	0.000	5.462	Nov 2020	2.492	Nov 2021	-		-		-	0.000	7.954	-
Space C2 Data Management Sustainment	SS/FFP	Palantir : Denver, CO	0.000	-		14.000	Nov 2021	-		-		-	0.000	14.000	-
Subtotal			0.000	143.249		138.924		-		-		-	0.000	282.173	N/A

Test and Evaluation (\$ 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			
Test	Various	Various : Various	0.000	1.562	Jan 2021	3.000	Dec 2021	-		-		-	0.000	4.562	-
Subtotal			0.000	1.562		3.000		-		-		-	0.000	4.562	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			
A&AS	C/CPAF	Various : Various	0.000	6.267	Nov 2020	7.534	Nov 2021	-		-		-	0.000	13.801	-
FFRDC	Various	Various : Various	0.000	3.691	Jan 2021	4.426	Dec 2021	-		-		-	0.000	8.117	-
Other	Various	Various : Various	0.000	0.298	May 2021	0.645	Oct 2021	-		-		-	0.000	0.943	-

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Exhibit R-4A, RDT&E Schedule Details: PB 2023 Air Force **Date:** April 2022

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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Space C2				
Platform/Infrastructure	1	2021	4	2022
Program Increments 8-11	1	2021	4	2021
Program Increments 12-15	1	2022	4	2022
Data Management	1	2021	4	2022
Space C2 sustainment (maintain existing capability)	1	2021	4	2022