Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Air Force	Date: April 2022
Appropriation/Budget Activity 3620F: *Research, Development, Test & Evaluation, Space Force* / BA 8: *Software and Digital Technology Pilot Programs*	**R-1 Program Element (Number/Name)** PE 1208248SF / *Space Command & Control - Software Pilot Program*

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	155.053	0.000	155.053	122.584	123.592	126.332	128.793	Continuing	Continuing
68A035: *SSA/BMC2*	-	0.000	0.000	155.053	0.000	155.053	122.584	123.592	126.332	128.793	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This effort is not a new start. In FY 2023, PE 1203614SF, JSpOC Mission System, Project 68A035 SSA/BMC2 efforts were transferred to PE 1208248SF, Enterprise Space BMC2, Project 68A035 SSA/BMC2 for Space Command and Control (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 C2 program is an OSD pilot initiative in which all lifecycle funding is tracked under Budget Activity 8 (BA 8), 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 within a single RDT&E appropriation in this PE.

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 program will also identify shared/common platform, infrastructure, and data layer solutions to support open frameworks and architectures across the enterprise ground portfolio. 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.

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Air Force	Date: April 2022
Appropriation/Budget Activity 3620F: *Research, Development, Test & Evaluation, Space Force I* BA 8: *Software and Digital Technology Pilot Programs*	**R-1 Program Element (Number/Name)** PE 1208248SF *I Space Command & Control - Software Pilot Program*

This program element may include necessary civilian pay expenses required to manage, execute, and deliver Space C2 for weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program elements 1206392SF and 1206398SF. In PY $0 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 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	0.000	0.000	0.000	0.000
Current President's Budget	0.000	0.000	155.053	0.000	155.053
Total Adjustments	0.000	0.000	155.053	0.000	155.053
• 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	0.000	0.000			
• Other Adjustments	0.000	0.000	155.053	0.000	155.053

Change Summary Explanation

FY 2023: The FY 2022 President's Budget submittal did not reflect FY 2023 through FY 2026 funding. Additionally, FY 2023 is the first year of funding this program in this PE. Therefore, an explanation of the change between the two budget positions for FY2023 cannot be made in a relevant manner.

C. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: Enterprise Space BMC2 Development	0.000	0.000	111.421
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, 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.			

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Air Force	Date: April 2022
Appropriation/Budget Activity 3620F: *Research, Development, Test & Evaluation, Space Force I* BA 8: *Software and Digital Technology Pilot Programs*	**R-1 Program Element (Number/Name)** PE 1208248SF *I Space Command & Control - Software Pilot Program*

C. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
FY 2022 Plans: N/A ***FY 2023 Plans:*** Continue to 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 in program increments 16-19 drops throughout FY 2023. FY 2023 funding will allow the program to implement system resiliency, cybersecurity, and situational awareness necessary to operate in the contested space domain, conduct studies to identify shared platform, infrastructure, and data layer solutions that will inform future concepts and activities in support of enterprise open frameworks and architectures, as well as risk reduction activities, technical analysis for common platform, infrastructure and data layers for ground and communication systems to build upon. Rapidly respond to implement system resiliency and situational awareness necessary to operate in the contested space domain. Activities may include, but are not limited to program office support, studies, technical analysis, experimentation, prototyping, etc. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** FY 2023 decreased compared to the FY22 funding amount in PE 1203614SF by 0.765M to support procurement in this fiscal year.			
Title: Space C2 Procurement ***Description:*** Provides hardware, software, technical documents, integration, testing and associated support to modernize and enhance Space C2 infrastructure for operations centers. ***FY 2022 Plans:*** N/A ***FY 2023 Plans:*** SSC will procure Commercial and Government Off The Shelf (COTS/GOTS) hardware and software necessary to host and field critical applications as well as refresh existing hardware in use at Vandenberg Space Force Base (VSFB) and Schriever Space Force Base (SSFB). Activities may include but are not limited to program office support, studies, technical analysis, etc. ***FY 2022 to FY 2023 Increase/Decrease Statement:***	0.000	0.000	2.500

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Air Force	Date: April 2022
Appropriation/Budget Activity 3620F: *Research, Development, Test & Evaluation, Space Force I* BA 8: *Software and Digital Technology Pilot Programs*	**R-1 Program Element (Number/Name)** PE 1208248SF *I Space Command & Control - Software Pilot Program*

C. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
FY 2023 increased compared to the FY22 funding amount in PE 1203614SF by 2.500M to support hardware procurement and associated requirements (test, documentation, etc.) at operations centers.			
Title: Space C2 Sustainment	0.000	0.000	41.132
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. ***FY 2022 Plans:*** N/A ***FY 2023 Plans:*** 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 infrastructure and legacy software associated hardware. 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. Rapidly respond to implement system resiliency and situational awareness necessary to operate in the contested space domain. Activities may include, but are not limited to program office support, studies, technical analysis, experimentation, prototyping, etc. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** FY 2023 decreased compared to the FY22 funding amount in PE 1203614SF by 1.100M to support procurement in this fiscal year.			
Accomplishments/Planned Programs Subtotals	0.000	0.000	155.053

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
• 08 1203614SF: *JSpOC Mission System*	155.067	154.529	-	-	-	-	-	-	-	0.000	309.596

Remarks

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Air Force	Date: April 2022
Appropriation/Budget Activity 3620F: *Research, Development, Test & Evaluation, Space Force I* BA 8: *Software and Digital Technology Pilot Programs*	**R-1 Program Element (Number/Name)** PE 1208248SF *I Space Command & Control - Software Pilot Program*

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.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Air Force		Date: April 2022
Appropriation/Budget Activity 3620F / 8	**R-1 Program Element (Number/Name)** PE 1208248SF / *Space Command & Contro* *l - Software Pilot Program*	**Project (Number/Name)** 68A035 / *SSA/BMC2*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Space C2 Applications Development	Various	Various : Various	-	0.000		0.000		88.298	Nov 2022	-		88.298	Continuing	Continuing	-
Space C2 Platform Sustainment	Various	Various : Various	-	0.000		0.000		22.132	Dec 2022	-		22.132	Continuing	Continuing	-
Space C2 Infrastructure Sustainment	Various	Various : Various	-	0.000		0.000		5.000	Nov 2022	-		5.000	Continuing	Continuing	-
Space C2 Enterprise Systems Engineering & Integration Development	Various	Various : Various	-	0.000		0.000		5.000	Nov 2022	-		5.000	Continuing	Continuing	-
Space C2 Data Sustainment	TBD	Various : Various	-	0.000		0.000		14.000	Nov 2022	-		14.000	Continuing	Continuing	-
Space C2 Procurement	TBD	TBD : TBD	-	0.000		0.000		2.500	Mar 2023	-		2.500	Continuing	Continuing	-
Space C2 Technical Mission Analysis Development	RO	Aerospace : El Segundo, CA	-	0.000		0.000		2.000	Jan 2023	-		2.000	Continuing	Continuing	-
		Subtotal	-	0.000		0.000		138.930		-		138.930	Continuing	Continuing	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Space C2 Test	Various	Various : Various	-	0.000		0.000		3.000	Dec 2022	-		3.000	Continuing	Continuing	-
		Subtotal	-	0.000		0.000		3.000		-		3.000	Continuing	Continuing	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
FFRDC	Various	Various : Various	-	0.000		0.000		4.500	Dec 2022	-		4.500	Continuing	Continuing	-
A&AS	Various	Various : Various	-	0.000		0.000		7.623	Dec 2022	-		7.623	Continuing	Continuing	-
Other	Various	Various : Various	-	0.000		0.000		1.000	Oct 2022	-		1.000	Continuing	Continuing	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Air Force		Date: April 2022
Appropriation/Budget Activity 3620F / 8	**R-1 Program Element (Number/Name)** PE 1208248SF / *Space Command & Contro* *l - Software Pilot Program*	**Project (Number/Name)** 68A035 / *SSA/BMC2*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	0.000		0.000		13.123		-		13.123	Continuing	Continuing	N/A

	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	-	0.000		0.000		155.053		-		155.053	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Air Force		Date: April 2022
Appropriation/Budget Activity 3620F / 8	**R-1 Program Element (Number/Name)** PE 1208248SF / *Space Command & Contro* *l - Software Pilot Program*	**Project (Number/Name)** 68A035 / *SSA/BMC2*

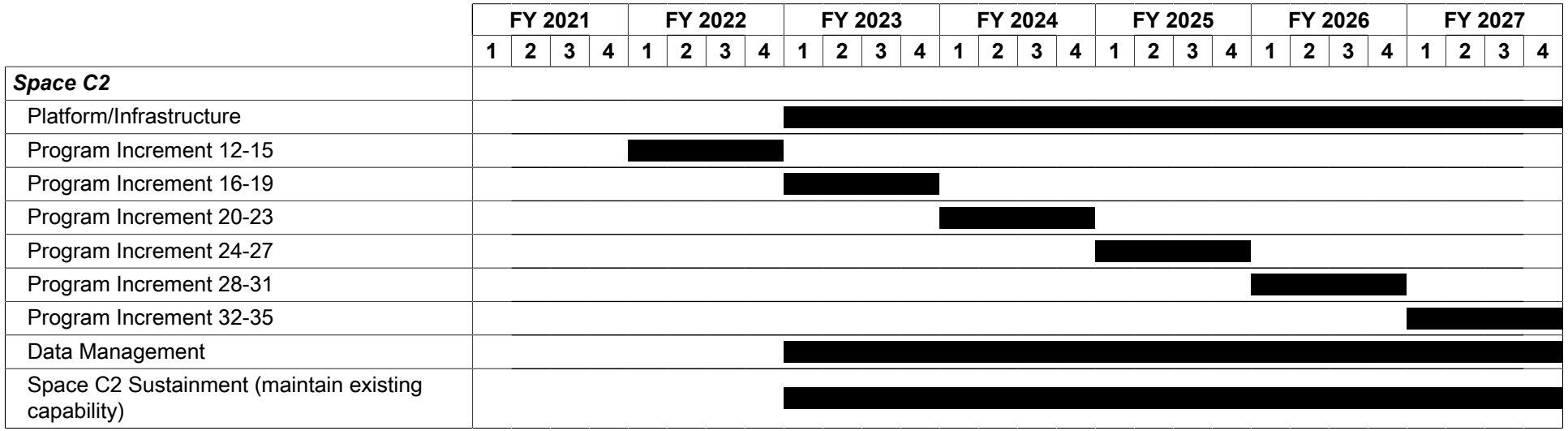

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Air Force		Date: April 2022
Appropriation/Budget Activity 3620F / 8	**R-1 Program Element (Number/Name)** PE 1208248SF / *Space Command & Contro* *l - Software Pilot Program*	**Project (Number/Name)** 68A035 / *SSA/BMC2*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Space C2				
Platform/Infrastructure	1	2023	4	2027
Program Increment 12-15	1	2022	4	2022
Program Increment 16-19	1	2023	4	2023
Program Increment 20-23	1	2024	4	2024
Program Increment 24-27	1	2025	4	2025
Program Increment 28-31	1	2026	4	2026
Program Increment 32-35	1	2027	4	2027
Data Management	1	2023	4	2027
Space C2 Sustainment (maintain existing capability)	1	2023	4	2027