Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Air Force											Date: March 2023	
Appropriation/Budget Activity 3620F: *Research, Development, Test & Evaluation, Space Force* / BA 4: *Advanced Component Development & Prototypes (ACD&P)*					R-1 Program Element (Number/Name) PE 1206438SF / *Space Control Technology*							
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	-	34.760	50.303	58.374	0.000	58.374	62.086	62.483	63.443	65.734	Continuing	Continuing
642611: *Technology Insertion Planning and Analysis*	-	34.760	50.303	31.621	0.000	31.621	36.124	36.128	36.867	38.201	Continuing	Continuing
646438: *Joint Space Integration Technology*	-	0.000	0.000	26.753	0.000	26.753	25.962	26.355	26.576	27.533	Continuing	Continuing

Note

In FY 2024, a portion of Project 642611, Technology Insertion Planning and Analysis efforts was transferred to Project 646438, Joint Space Integration Technology for transparency.

A. Mission Description and Budget Item Justification

This project supports a range of activities including systems engineering, technology planning, development, demonstrations and prototyping, and testing, as well as modeling, simulations and exercises to support development and maturation of tactics and procedures for a responsive and resilient Space Control mission area. This includes technology development and prototyping for Defensive Counterspace (DCS) and Offensive Counterspace (OCS) and the necessary systems engineering for the warfighter to effectively employ such systems.

Specifically supported are DCS and Space Domain Awareness (SDA) activities, which include developing threat warning payloads for monitoring, detecting, identifying, tracking, assessing, verifying, categorizing, and characterizing objects and events in space. Additionally, Integration and Technology Futures program supports the development of payload prototypes and space defense force packages for protecting U.S. space systems, resources, and operations from enemy attempts to negate, interfere, or destroy them.

Specific OCS activities include disruption, denial, or degradation (and associated Electronic Support) of adversary space systems that may be used for purposes hostile to U.S. national security interests. Rapid Reaction Capabilities in response to immediate warfighter needs in the Space Control mission area are developed within the Rapid Reaction Branch (RRB). Depending on the magnitude of Combatant Command Urgent Operational Needs (UON), this program may not include necessary funding for all contingency deployments. As required, necessary funding will be requested through established Joint Urgent Operational Need (JUON) and Overseas Contingency Operations (OCO) processes.

Joint Space Technology Integration leverages knowledge of the space environment and impacts on weapon systems to prototype, develop, test, and field joint multi-domain software and modeling solutions to fill capability gaps for Combatant Commanders. Military Application of the Space Environment (MASE) project consolidates and integrates current space environment science and technology advancements to provide capability for joint force systems in all domains to address immediate and evolving threats to U.S. forces operating in harm's way. The data provided supports rapid and agile demonstrations, exercises, and war games that provide essential validation of delivered capabilities to improve operational effectiveness.

Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Air Force	Date: March 2023
Appropriation/Budget Activity 3620F: *Research, Development, Test & Evaluation, Space Force I* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 1206438SF *I Space Control Technology*

The FY 2024 funding request was reduced by 4.260M to account for the availability of prior year execution balances.

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.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver SCT 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.

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.

B. Program Change Summary ($ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	35.931	57.953	62.765	0.000	62.765
Current President's Budget	34.760	50.303	58.374	0.000	58.374
Total Adjustments	-1.171	-7.650	-4.391	0.000	-4.391
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	-7.500			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	2.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-1.171	-2.150			
• Other Adjustments	0.000	0.000	-4.391	0.000	-4.391

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2022	FY 2023
Project: 642611: *Technology Insertion Planning and Analysis*		
Congressional Add: *NEXT-C Gridded Ion Thruster Development*	2.902	2.000
Congressional Add Subtotals for Project: 642611	2.902	2.000
Congressional Add Totals for all Projects	2.902	2.000

Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Air Force	Date: March 2023
Appropriation/Budget Activity 3620F: *Research, Development, Test & Evaluation, Space Force I* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 1206438SF *I Space Control Technology*

Change Summary Explanation

FY 2024: -0.412M to realign funding to APPN 3410, PE 1207804SF (SAG 13C), for fiscal policy compliance as Space Systems Command (SSC) establishes Headquarters functions and a Chief Information Office (CIO) for integrated cybersecurity.

FY 2024: +0.281M inflation increase for non-pay and non-fuel purchases.

FY 2024: -4.260M due to higher AF priorities.

Exhibit R-2A, RDT&E Project Justification: PB 2024 Air Force			Date: March 2023
Appropriation/Budget Activity 3620F / 4	R-1 Program Element (Number/Name) PE 1206438SF / *Space Control Technology*	Project (Number/Name) 642611 / *Technology Insertion Planning and Analysis*	

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
642611: *Technology Insertion Planning and Analysis*	-	34.760	50.303	31.621	0.000	31.621	36.124	36.128	36.867	38.201	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

In FY 2024, a portion of Project 642611, Technology Insertion Planning and Analysis efforts was transferred from Project 646438, Joint Space Integration Technology for transparency.

A. Mission Description and Budget Item Justification

This project supports a range of activities including systems engineering, technology planning, development, demonstrations and prototyping, and testing, as well as modeling, simulations and exercises to support development and maturation of tactics and procedures for a responsive and resilient Space Control mission area. This includes technology development and prototyping for Defensive Counterspace (DCS) and Offensive Counterspace (OCS) and the necessary systems engineering for the warfighter to effectively employ such systems.

Specifically supported are DCS and Space Domain Awareness (SDA) activities, which include developing threat warning payloads for monitoring, detecting, identifying, tracking, assessing, verifying, categorizing, and characterizing objects and events in space. Additionally, Integration and Technology Futures program supports the development of payload prototypes and space defense force packages for protecting U.S. space systems, resources, and operations from enemy attempts to negate, interfere, or destroy them.

Specific OCS activities include disruption, denial, or degradation (and associated Electronic Support) of adversary space systems that may be used for purposes hostile to U.S. national security interests. Rapid Reaction Capabilities in response to immediate warfighter needs in the Space Control mission area are developed within the Rapid Reaction Branch (RRB). Depending on the magnitude of Combatant Command Urgent Operational Needs (UON), this program may not include necessary funding for all contingency deployments. As required, necessary funding will be requested through established Joint Urgent Operational Need (JUON) and Overseas Contingency Operations (OCO) processes.

Joint Space Technology Integration leverages knowledge of the space environment and impacts on weapon systems to prototype, develop, test, and field joint multi-domain software and modeling solutions to fill capability gaps for Combatant Commanders. Military Application of the Space Environment (MASE) project consolidates and integrates current space environment science and technology advancements to provide capability for joint force systems in all domains to address immediate and evolving threats to U.S. forces operating in harm's way. The data provided supports rapid and agile demonstrations, exercises, and war games that provide essential validation of delivered capabilities to improve operational effectiveness. In FY 2024, the Joint Space Integration Technology effort was transferred out of Project 642611 into a new Project 646438 for transparency.

Exhibit R-2A, RDT&E Project Justification: PB 2024 Air Force		Date: March 2023
Appropriation/Budget Activity 3620F / 4	**R-1 Program Element (Number/Name)** PE 1206438SF / *Space Control Technology*	**Project (Number/Name)** 642611 / *Technology Insertion Planning and Analysis*

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.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver SCT 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.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
Title: Rapid Reaction Branch	17.178	12.708	18.672
Description: Develops advanced capabilities for rapid prototyping and integration into space control programs of record and, if requested, to warfighter UONs and JUONs. Conducts prototype capability development, testing, training and rapid transition of technology and techniques to space control systems. Sustains deployed quick reaction capabilities until transition to program of record or mission completion.			
FY 2023 Plans: Develop, test, train, field, transition and sustain UON capabilities supporting USEUCOM/USAFE or in response to emergent requirements from other Combatant Commands. Conduct initial technical development and integration activities against relevant threat systems and technologies in preparation for operational requirements. Develop and test advanced prototypes in support of activities within the Space Control Technology portfolio. Based on technological advances relevant to the mission area, develop, integrate and evaluate next generation capabilities into (GRA) Increment 5. Develop, test, train, deliver and sustain urgent/ emergent operational needs using Increment 4 or Increment 5 GRA technologies as appropriate for urgent need time-lines, and start Increment 6. Integrate information assurance constructs and controls into developmental platforms to expedite fielding. Execute field development & test activities, at all locations, to verify system performance in the operational environment. Enhance fielded rapid reaction capabilities in response to evolving threats and operator feedback. Additionally, FY 2023 funding will allow the program to continue establishment of Remote Development Sites in USCENTCOM and USINDOPACOM. Lastly, the funding will allow for implementing system resiliency and situational awareness necessary to operate in the contested space domain. Activities may include, but are not limited to: studies, technical analysis, risk reduction experiments and prototyping, integration and test of command and control (C2), resiliency measures and mission partner interfaces, space test/combat range events, and office support etc.			
FY 2024 Plans: Develop, test, train, field, transition and sustain advanced rapid reaction capabilities in response to emergent requirements from multiple Combatant Commands. Conduct initial technical development and integration activities against relevant threat systems			

Exhibit R-2A, RDT&E Project Justification: PB 2024 Air Force		Date: March 2023
Appropriation/Budget Activity 3620F / 4	**R-1 Program Element (Number/Name)** PE 1206438SF / *Space Control Technology*	**Project (Number/Name)** 642611 / *Technology Insertion Planning and Analysis*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
and technologies in preparation for operational requirements. Develop and test advanced prototypes in support of activities within the Space Control Technology portfolio. Based on technological advances relevant to the mission area, develop, integrate and evaluate next generation capabilities into Ground Reference Architecture (GRA) Increment 6. Develop, test, train, deliver and sustain urgent/emergent operational needs using Increment 5 or Increment 6 GRA technologies as appropriate for urgent need timelines, and start Increment 6. Integrate information assurance constructs and controls into developmental platforms and architecture to expedite fielding. Execute remote and field development & test activities using remote development sites to verify system performance in the operational environment and stay abreast of emerging technologies. Enhance fielded rapid reaction capabilities in response to evolving threats and operator feedback. Additionally, FY 2024 funding will support three remote development site activities located in the USEUCOM, USCENTCOM, and USINDO-PACOM AORs further enabling the program to pace the threat and rapidly delivers critical warfighting capabilities in the contested space domain. Activities may include, but are not limited to: on-site security and communications support, technical analysis, risk reduction experiments and prototyping, development, integration and test of C2 architecture, travel and administrative office and laboratory support. ***FY 2023 to FY 2024 Increase/Decrease Statement:*** FY 2024 increased due to simultaneous support to three remote development site activities.			
Title: Integration and Technology Futures ***Description:*** Foundational architecture and prototype development to enable the integration, interoperability and compatibility of new Space Control Technology into space systems. Funds sensor and other capability technologies for transition into programs to meet space control mission requirements. ***FY 2023 Plans:*** Capture OCS and DCS enterprise capabilities in digital engineering models that represent the space enterprise assets, operations, related key performance characteristics, and threat response. Exercise the digital engineering models and establish secure networks for data sharing with mission partners to analyze the performance, operational capabilities, and interdependencies of space systems at the enterprise level to inform the counterspace mission areas. Define standards and perform various digital engineering functions, tools, procedures, and best practices to accelerate acquisition of successful and affordable counterspace systems. Conduct IRON JAR space experimentation activities with programs of record and mission partners to demonstrate and evaluate space technologies, mature space operations processes, conduct operator training, develop tactics, techniques, and procedures (TTPs), and validate digital engineering models. Identify and prioritize solution development of new space technologies. FY 2023 funding will allow the program to rapidly respond to implement system resiliency and situational awareness necessary to operate in the contested space domain.	14.680	10.939	12.949

Exhibit R-2A, RDT&E Project Justification: PB 2024 Air Force		Date: March 2023
Appropriation/Budget Activity 3620F / 4	**R-1 Program Element (Number/Name)** PE 1206438SF / *Space Control Technology*	**Project (Number/Name)** 642611 / *Technology Insertion Planning and Analysis*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
Activities may include, but are not limited to: studies, technical analysis, risk reduction experiments and prototyping, integration and test of C2, resiliency measures and mission partner interfaces, space test/combat range events, and office support etc. ***FY 2024 Plans:*** Capture OCS and DCS enterprise capabilities in digital engineering models that represent the space enterprise assets, operations, related key performance characteristics, and threat response. Exercise the digital engineering models and establish secure networks for data sharing with mission partners to analyze the performance, operational capabilities, and interdependencies of space systems at the enterprise level to inform the counter-space mission areas. Define standards and perform various digital engineering functions, tools, procedures, and best practices to accelerate acquisition of successful and affordable counter-space systems. Conduct IRON JAR space experimentation activities with programs of record and mission partners to demonstrate and evaluate space technologies, mature space operations processes, conduct operator training, develop tactics, techniques, and procedures (TTPs), and validate digital engineering models. Identify and prioritize solution development of new space technologies. FY 2023 funding will allow the program to 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: studies, technical analysis, risk reduction experiments and prototyping, integration and test of C2, resiliency measures and mission partner interfaces, space test/combat range events, and office support etc. Activities may include, but are not limited to: studies, technical analysis, risk reduction experiments, prototype development, technology transition, integration and test of command and control (C2), resiliency measures and mission partner interfaces, space test/combat range events, and office support etc. ***FY 2023 to FY 2024 Increase/Decrease Statement:*** FY 2024 increased due to activities above.			
Title: Military Application of the Space Environment (MASE) ***Description:*** MASE provides commanders an operational risk assessment tool to improve air and maritime campaign mission effectiveness. Develops, tests, and delivers weapon system tailored visualizations/decision aids supporting operational level mission planning and tactical execution. ***FY 2023 Plans:*** Research, develop and validate enhanced regional ionospheric and signal propagation models to predict (forecast) space domain impacts on weapon systems. Integrate model output into weapon system tailored visualizations to improve multi-domain mission	0.000	24.656	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2024 Air Force		Date: March 2023
Appropriation/Budget Activity 3620F / 4	**R-1 Program Element (Number/Name)** PE 1206438SF / *Space Control Technology*	**Project (Number/Name)** 642611 / *Technology Insertion Planning and Analysis*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
planning and execution. Conduct demonstrations of new capabilities and validate results during campaign planning, exercises, and war games. Develop, test, and train new (or updated) tactics, techniques, and procedures for use by operational users. Integrate new traditional and non-traditional data sources into models to improve support to decision makers. Rapidly develop, test, and deploy new system features in response to Combatant Commander needs and a continuously evolving threat to U.S. forces. ***FY 2024 Plans:*** N/A ***FY 2023 to FY 2024 Increase/Decrease Statement:*** FY 2024 decreased due to the MASE portion of Project 642611, Technology Insertion Planning and Analysis, being transferred to Project 646438, Joint Space Integration Technology.			
Accomplishments/Planned Programs Subtotals	31.858	48.303	31.621

	FY 2022	FY 2023
Congressional Add: NEXT-C Gridded Ion Thruster Development	2.902	2.000
FY 2022 Accomplishments: Project will partner with NASA to develop gridded ion thruster hardware based on the NASA Evolutionary Xenon Thruster - Commercial (NEXT-C) hardware development contract. The activity will include both in-house risk reduction tasks and contracted activities with industry through an existing contract mechanism. The objective for the project is to develop and test key components of a higher Thrust-to-Power (T/P) NEXT derivative for dual commercial and military applications. Development is planned to include the two key components of a propulsion system, including NEXT-C electric propulsion device and the associated higher power processing unit (PPU). ***FY 2023 Plans:*** Project will continue partnership with NASA to develop and improve gridded ion thruster hardware based on the NASA Evolutionary Xenon Thruster - Commercial (NEXT-C) hardware development contract. The objective for the project is to develop and test key components of a higher Thrust-to-Power (T/P) NEXT derivative for dual commercial and military applications. Development is planned to include the two key components of a propulsion system, including NEXT-C electric propulsion device and the associated higher power processing unit (PPU).		
Congressional Adds Subtotals	2.902	2.000

C. Other Program Funding Summary ($ in Millions)

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2024 Air Force		Date: March 2023
Appropriation/Budget Activity 3620F / 4	**R-1 Program Element (Number/Name)** PE 1206438SF / *Space Control Technology*	**Project (Number/Name)** 642611 / *Technology Insertion Planning and Analysis*

C. Other Program Funding Summary ($ in Millions)

Remarks

D. Acquisition Strategy

All contracts funded in this program element will be awarded using competitive procedures to the maximum extent possible. NEXT-C Gridded Ion Thruster Development will be awarded on existing NASA Glenn Research Center contract.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Air Force		Date: March 2023
Appropriation/Budget Activity 3620F / 4	**R-1 Program Element (Number/Name)** PE 1206438SF / *Space Control Technology*	**Project (Number/Name)** 642611 / *Technology Insertion Planning and Analysis*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
SCT Counterspace Technology Prototyping/ Rapid Reaction Development	Various	Various : Various	-	16.253	Oct 2021	11.399	Dec 2022	16.606	Oct 2023	-		16.606	Continuing	Continuing	-
SCT Integration and Technology Futures	C/Various	Various : Various	-	12.629	Nov 2021	10.000	Dec 2022	12.282	Oct 2023	-		12.282	Continuing	Continuing	-
NEXT-C Gridded Ion Thruster Development	MIPR	NASA Glenn Research Ctr : Cleveland, OH	-	2.902	Aug 2022	2.000	Sep 2023	-		-		-	Continuing	Continuing	-
MASE	Various	Various : Various	-	-		22.248	Nov 2022	-		-		-	Continuing	Continuing	-
SBIR/STTR	Allot	Not specified. : TBD	-	-		-		1.107	Oct 2023	-		1.107	Continuing	Continuing	-
		Subtotal	-	31.784		45.647		29.995		-		29.995	Continuing	Continuing	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
A&AS	Various	Various : Various	-	2.976	Jan 2022	4.656	Jan 2023	1.626	Jan 2024	-		1.626	Continuing	Continuing	-
		Subtotal	-	2.976		4.656		1.626		-		1.626	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	-	34.760		50.303		31.621		-		31.621	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Air Force		Date: March 2023
Appropriation/Budget Activity 3620F / 4	**R-1 Program Element (Number/Name)** PE 1206438SF / *Space Control Technology*	**Project (Number/Name)** 642611 / *Technology Insertion Planning and Analysis*

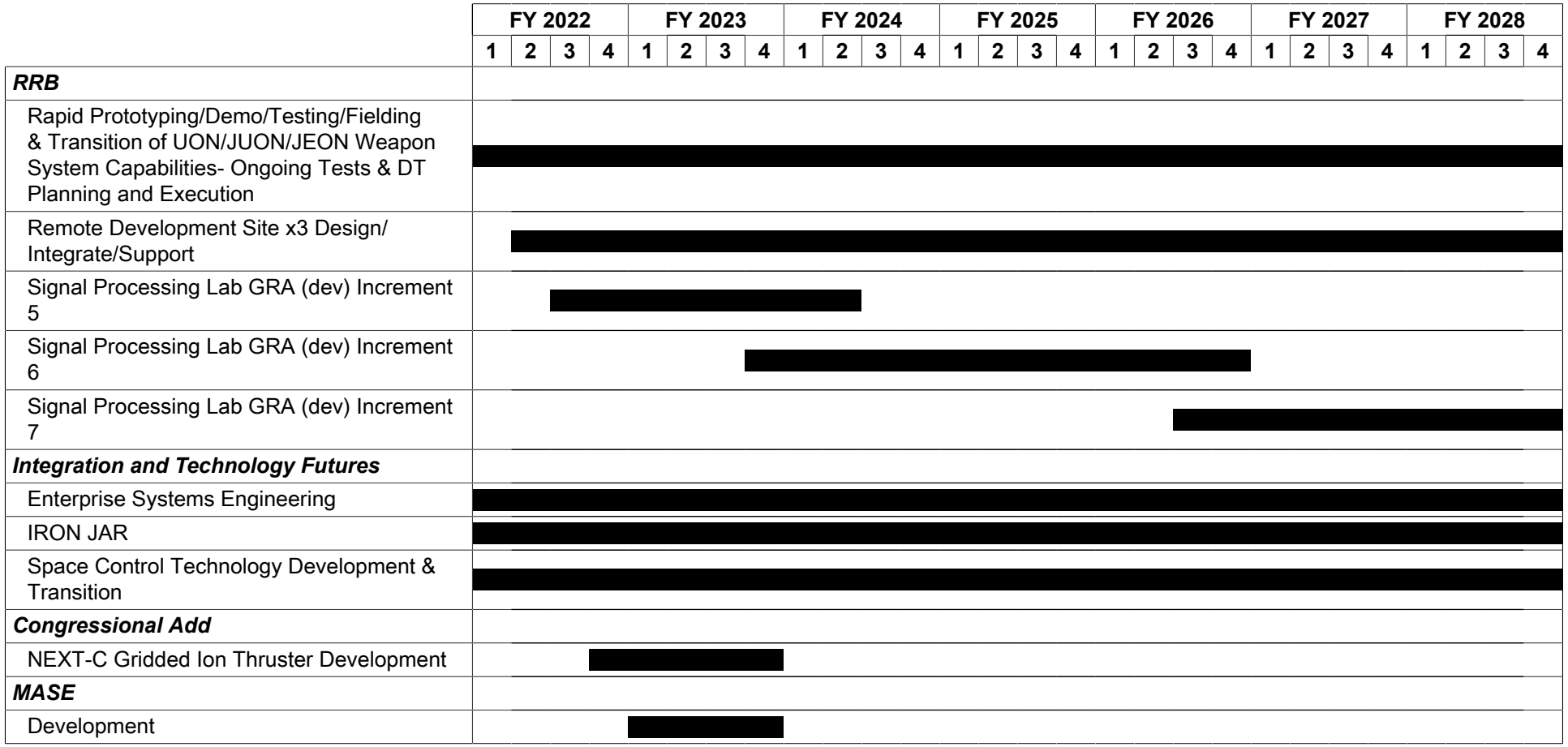

Exhibit R-4A, RDT&E Schedule Details: PB 2024 Air Force		Date: March 2023
Appropriation/Budget Activity 3620F / 4	**R-1 Program Element (Number/Name)** PE 1206438SF / *Space Control Technology*	**Project (Number/Name)** 642611 / *Technology Insertion Planning and Analysis*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
RRB				
Rapid Prototyping/Demo/Testing/Fielding & Transition of UON/JUON/JEON Weapon System Capabilities- Ongoing Tests & DT Planning and Execution	1	2022	4	2028
Remote Development Site x3 Design/Integrate/Support	2	2022	4	2028
Signal Processing Lab GRA (dev) Increment 5	3	2022	2	2024
Signal Processing Lab GRA (dev) Increment 6	4	2023	4	2026
Signal Processing Lab GRA (dev) Increment 7	3	2026	4	2028
Integration and Technology Futures				
Enterprise Systems Engineering	1	2022	4	2028
IRON JAR	1	2022	4	2028
Space Control Technology Development & Transition	1	2022	4	2028
Congressional Add				
NEXT-C Gridded Ion Thruster Development	4	2022	4	2023
MASE				
Development	1	2023	4	2023

Exhibit R-2A, RDT&E Project Justification: PB 2024 Air Force			Date: March 2023
Appropriation/Budget Activity 3620F / 4	R-1 Program Element (Number/Name) PE 1206438SF / *Space Control Technology*	Project (Number/Name) 646438 / *Joint Space Integration Technology*	

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
646438: *Joint Space Integration Technology*	-	0.000	0.000	26.753	0.000	26.753	25.962	26.355	26.576	27.533	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

In FY 2024, a portion of Project 642611, Technology Insertion Planning and Analysis efforts was transferred to Project 646438, Joint Space Integration Technology for transparency.

A. Mission Description and Budget Item Justification

Joint Space Technology Integration leverages knowledge of the space environment and impacts on weapon systems to prototype, develop, test, and field joint multi-domain software and modeling solutions to fill capability gaps for Combatant Commanders. Military Application of the Space Environment (MASE) project consolidates and integrates current space environment science and technology advancements to provide capability for joint force systems in all domains to address immediate and evolving threats to U.S. forces operating in harm's way. The data provided supports rapid and agile demonstrations, exercises, and war games that provide essential validation of delivered capabilities to improve operational effectiveness.

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.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver SCT 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 CY 2021 0.160M was expended for civilian pay expenses in this program element.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
Title: Military Application of the Space Environment (MASE)	-	0.000	26.753
Description: MASE is not a new start as it was previously funded in Appropriation 3620, RDT&E, Space Force, PE 1206438S, Space Control Technology, Project 642611, Technology Insertion Planning and Analysis.			

Exhibit R-2A, RDT&E Project Justification: PB 2024 Air Force		Date: March 2023
Appropriation/Budget Activity 3620F / 4	**R-1 Program Element (Number/Name)** PE 1206438SF / *Space Control Technology*	**Project (Number/Name)** 646438 / *Joint Space Integration Technology*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
The goal, mission and purpose of the Military Application of the Space Environment (MASE) Program is to design, develop, and field a decision aid to support air and maritime scheme of maneuver in a battlespace and satisfy the needs of multiple combatant commanders, service components, and the intelligence community. MASE provides commanders an operational risk assessment tool to improve air and maritime campaign mission effectiveness. Develops, tests, and delivers weapon system tailored visualizations/decision aids supporting operational level mission planning and tactical execution. ***FY 2023 Plans:*** N/A ***FY 2024 Plans:*** Research, develop and validate software for enhanced modeling and simulation of regional ionospheric and signal propagation effects to forecast space domain impacts on joint force weapon systems. Integrate model output into weapon system tailored visualizations to improve multi-domain mission planning and execution. Complete software development of Major Release 1.3 and begin development of software for Major Release 1.4 of new capabilities and validate results during campaign planning, exercises, and war games. Develop, test, and provide training for new or updated tactics, techniques, and procedures enhanced by MASE for operational users. Integrate new traditional and non-traditional data sources into models to improve space warfighting decision processes. Rapidly develop, test, and deploy new system features in response to continuously evolving threats to U.S. forces. ***FY 2023 to FY 2024 Increase/Decrease Statement:*** FY 2024 increased due to transfer of MASE effort from PE 1206427SF, Space Systems Prototype Transitions (SSPT).			
Accomplishments/Planned Programs Subtotals	-	0.000	26.753

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

All contracts funded in this program element will be awarded using competitive procedures to the maximum extent possible. The SE&I contract uses the Defense Technical Information Center (DTIC) Information Analysis Center (IAC) Multiple Award Contract (MAC) and runs March 2020-March 2025. The software development contract uses the Modeling, Simulation & Analysis (MS&A) for Space and Cyberspace Capabilities (MSCC) contract and runs July 2019-July 2024. All modeling, simulation and demonstration contracts are awarded through the Air Force Research Lab's (AFRL) competitive processes. The application infrastructure/online services are a combination of MACs through the USAF PlatformOne Program, the Operational Intelligence, Surveillance and Reconnaissance (ISR) DevSecOps NextGen (ODIN)

Exhibit R-2A, RDT&E Project Justification: PB 2024 Air Force		Date: March 2023
Appropriation/Budget Activity 3620F / 4	**R-1 Program Element (Number/Name)** PE 1206438SF / *Space Control Technology*	**Project (Number/Name)** 646438 / *Joint Space Integration Technology*

Program and the USAF Commercial Cloud Enterprise (C2E) Program. Test and evaluation tasks will be accomplished on existing competitively awarded USSF, USAF, and USN contracts.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Air Force			Date: March 2023
Appropriation/Budget Activity 3620F / 4	**R-1 Program Element (Number/Name)** PE 1206438SF / *Space Control Technology*	**Project (Number/Name)** 646438 / *Joint Space Integration Technology*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MASE Systems Engineering & Integration (SE&I)	C/CPFF	Booz Allen Hamilton : Colorado Springs, CO	-	-		-		5.933	Oct 2023	-		5.933	Continuing	Continuing	-
MASE Software Development	C/CPFF	DSoft Technologies : Colorado Springs, CO	-	-		-		2.134	Oct 2023	-		2.134	Continuing	Continuing	-
MASE Modeling, Simulation and Demonstration	Various	Various : Various	-	-		-		11.679	Oct 2023	-		11.679	Continuing	Continuing	-
MASE Application Infrastructure/Online Services	Various	Various : Various	-	-		-		1.412	Oct 2023	-		1.412	Continuing	Continuing	-
SBIR/STTR	Allot	Not specified. : TBD	-	-		-		0.936	Oct 2023	-		0.936	Continuing	Continuing	-
		Subtotal	-	-		-		22.094		-		22.094	Continuing	Continuing	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MASE Developmental/ Operational Testing	Various	Various : Various	-	-		-		3.467	Dec 2023	-		3.467	Continuing	Continuing	-
		Subtotal	-	-		-		3.467		-		3.467	Continuing	Continuing	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
A&AS	Various	Various : El Segundo, CA	-	-		-		0.832	Nov 2023	-		0.832	Continuing	Continuing	-
FFRDC	RO	Aerospace Corp. : El Segundo, CA	-	-		-		0.260	Nov 2023	-		0.260	Continuing	Continuing	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Air Force			Date: March 2023
Appropriation/Budget Activity 3620F / 4	R-1 Program Element (Number/Name) PE 1206438SF / *Space Control Technology*	Project (Number/Name) 646438 / *Joint Space Integration Technology*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Other Support	Various	Various : El Segundo, CA	-	-		-		0.100	Oct 2023	-		0.100	Continuing	Continuing	-
		Subtotal	-	-		-		1.192		-		1.192	Continuing	Continuing	N/A

	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	-		-		26.753		-		26.753	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Air Force		Date: March 2023
Appropriation/Budget Activity 3620F / 4	**R-1 Program Element (Number/Name)** PE 1206438SF / *Space Control Technology*	**Project (Number/Name)** 646438 / *Joint Space Integration Technology*

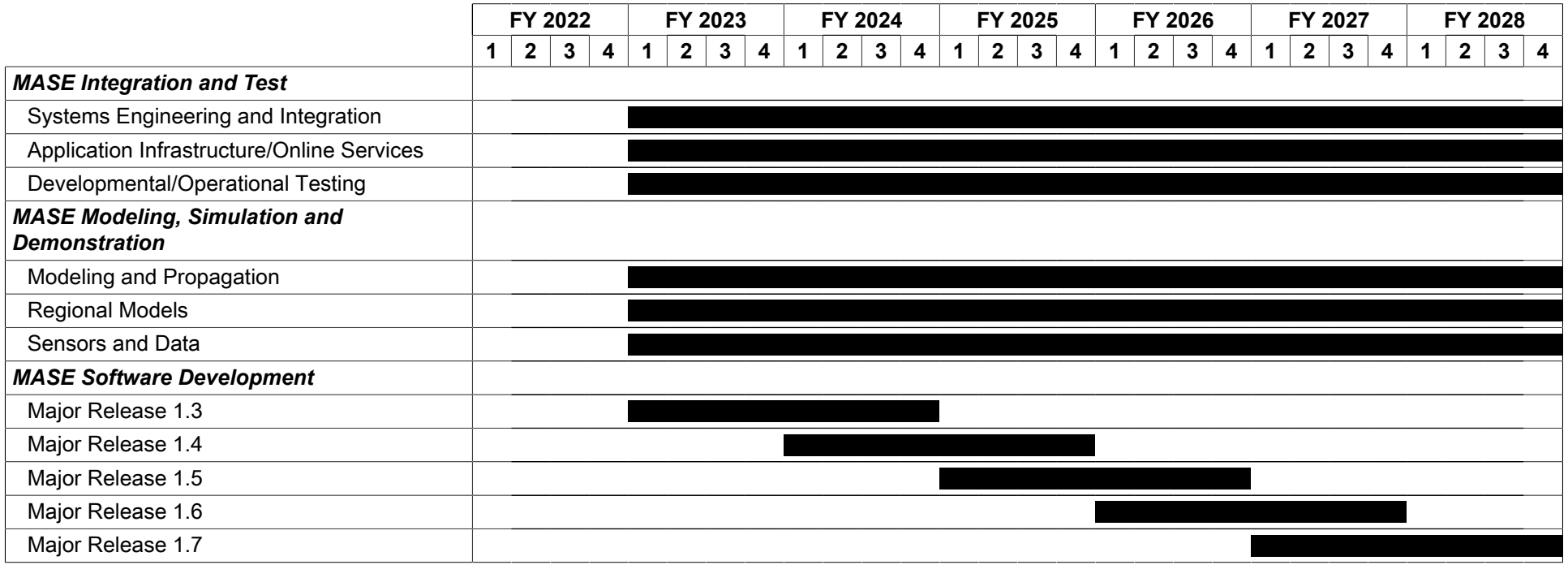

Exhibit R-4A, RDT&E Schedule Details: PB 2024 Air Force		Date: March 2023
Appropriation/Budget Activity 3620F / 4	**R-1 Program Element (Number/Name)** PE 1206438SF / *Space Control Technology*	**Project (Number/Name)** 646438 / *Joint Space Integration Technology*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
MASE Integration and Test				
Systems Engineering and Integration	1	2023	4	2028
Application Infrastructure/Online Services	1	2023	4	2028
Developmental/Operational Testing	1	2023	4	2028
MASE Modeling, Simulation and Demonstration				
Modeling and Propagation	1	2023	4	2028
Regional Models	1	2023	4	2028
Sensors and Data	1	2023	4	2028
MASE Software Development				
Major Release 1.3	1	2023	4	2024
Major Release 1.4	1	2024	4	2025
Major Release 1.5	1	2025	4	2026
Major Release 1.6	1	2026	4	2027
Major Release 1.7	1	2027	4	2028