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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 5: System Development & Demonstration (SDD)</i>	R-1 Program Element (Number/Name) PE 1206445SF / <i>Commercial SATCOM (COMSATCOM) Integration</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	-	41.711	23.400	23.513	0.000	23.513	21.380	69.418	72.456	70.667	0.000	322.545
650140: <i>COMSATCOM</i>	-	41.711	0.000	13.668	0.000	13.668	15.909	64.406	72.456	70.667	0.000	278.817
651126: <i>COMSATCOM Infrastructure</i>	-	0.000	23.400	9.845	0.000	9.845	5.471	5.012	0.000	0.000	0.000	43.728

A. Mission Description and Budget Item Justification

Commercial SATCOM Integration develops, prototypes and demonstrates the capabilities required to fully leverage COMSATCOM as part of the Department's SATCOM enterprise. The United States Space Force (USSF) has determined that an enterprise approach to the procurement, delivery and management of its SATCOM capabilities is the best means to create an environment that is responsive to Combatant Commanders and other users across the spectrum of conflict. In addition, an enterprise approach will improve affordability, Department purchasing power and mission assurance. Project 650140, COMSATCOM Enterprise Integration of Fighting SATCOM, will rapidly prototype and deliver Enterprise Management and Control (EM&C) integration tools and mission applications enabling warfighters to operate responsive and resilient SATCOM as a single enterprise. Project 651126, COMSATCOM Infrastructure, will develop and stand up COMSATCOM business and customer management tools, finalizing the Congressionally-directed migration from DISA systems to USSF systems. Development of enhanced COMSATCOM acquisition capabilities leverage enterprise innovation activities focused on transforming how DoD acquires, accesses and deploys COMSATCOM capabilities.

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, maximizing 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 capabilities.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver COMSATCOM for weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in PE 1206445SF.

This program is in Budget Activity 5, System Development and Demonstration (SDD) because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full rate production.

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B. Program Change Summary (\$ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Previous President's Budget	43.212	23.400	0.000	0.000	0.000
Current President's Budget	41.711	23.400	23.513	0.000	23.513
Total Adjustments	-1.501	0.000	23.513	0.000	23.513
• 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	-1.501	0.000			
• Other Adjustments	0.000	0.000	23.513	0.000	23.513

Congressional Add Details (\$ in Millions, and Includes General Reductions)

Project: 650140: *COMSATCOM*

Congressional Add: *Enterprise Integration of Fighting SATCOM*

Congressional Add Subtotals for Project: 650140

Congressional Add Totals for all Projects

	FY 2021	FY 2022
	41.711	-
	41.711	-
	41.711	-

Change Summary Explanation

FY 2023: +\$23.513M; Continue COMSATCOM development and integration efforts to deliver the Fighting SATCOM capabilities. 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.

FY 2021: -\$1.501M; SBIR

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Appropriation/Budget Activity 3620F / 5	R-1 Program Element (Number/Name) PE 1206445SF / <i>Commercial SATCOM (C OMSATCOM) Integration</i>	Project (Number/Name) 650140 / <i>COMSATCOM</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
650140: <i>COMSATCOM</i>	-	41.711	0.000	13.668	0.000	13.668	15.909	64.406	72.456	70.667	0.000	278.817
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The backbone of Fighting SATCOM is a SATCOM Enterprise Management and Control (EM&C) capability for an Integrated SATCOM Enterprise. This is the foundation for SATCOM integration into an operational level Command and Control (C2) system that enables the end-to-end sensor-to-shooter execution serving the protect and defend, as well as theatre support missions for United States Space Command (USSPACECOM) and the Theater Combatant Commands. SATCOM EM&C applications will provide critical services to our warfighters to facilitate timely, quality driven battlespace decisions for SATCOM allocation and use. The effort leverages a Development Security Operations (DevSecOps) platform to rapidly prototype and deliver EM&C mission applications enabling responsive, resilient SATCOM for the Single Warfighting Commander, National Space Defense Center (NSDC), Combined Space Operations Center (CSpOC), SATCOM Integrated Operations Division (SIOD), Regional SATCOM Support Centers (RSSC), Space and Missile Defense Command (SMDC) Satellite Operations Brigade, and other C2 centers. Enterprise-level architecture, prototyping, test, and experimentation will drive Commander's acceptance of capabilities and enable integrated mission systems with machine-to-machine connections. SATCOM EM&C applications are delivered in capability categories including Situational Awareness / Common Operating Picture, Enterprise SATCOM Planning, and SATCOM Mission Management.

The FY 2023 funding request was reduced by \$6.292M to account for the availability of prior year execution balances.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2021	FY 2022	FY 2023
Title: Enterprise Integration of Fighting SATCOM (1)	-	-	13.668
<p>Description: SSC is developing the EM&C capability to support the Chief of Space Operation's (CSO) Fighting SATCOM Vision. Leveraging the Capability Roadmap Architecture and Situational Awareness/Common Operating Picture previously developed, prototyping efforts focus on improving the user interface/experience, integrating global spectrum usage, providing status of SATCOM systems (ground and space), Electro-Magnetic Interference (EMI) characterization, and development of SATCOM registries.</p> <p>FY 2023 Plans: This effort continues plans initiated in the FY 2021 Congressional add and leverages the FY 2021 prototyping and integration efforts to mature EM&C. FY 2023 funding will be used to continue integration of data sources into the Situational Awareness/Common Operating Picture (SA/COP) capability matured with FY 2021 funding to include MILSATCOM and Commercial systems. Maturing the SA/COP capability includes data visualization providing integrated picture of SATCOM related sensors networks and functionality for defensive space control. In addition, this effort leverages FY 2021 prototyping efforts to continue development of Enterprise Planning capability to reduce human burden in planning efforts and integrate SA/COP capabilities, as well as</p>			

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Exhibit R-2A, RDT&E Project Justification: PB 2023 Air Force	Date: April 2022
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Appropriation/Budget Activity 3620F / 5	R-1 Program Element (Number/Name) PE 1206445SF / <i>Commercial SATCOM (COMSATCOM) Integration</i>	Project (Number/Name) 650140 / <i>COMSATCOM</i>
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2021	FY 2022	FY 2023
<p>planning efforts for delivery of Mission Management and Analytical Tools capabilities to facilitate operational dynamic roaming by leveraging machine-to-machine interfaces. Invest in tools to support EMI/RF characterization. Integrate with DISA's SATCOM Ordering Management and Situational Awareness Tool (SOMSAT). Continue to leverage a DevSecOps platform and pipeline, and other contract vehicle(s) as required, to rapidly prototype and deliver EM&C mission applications, and fund supporting infrastructure, IT, and cyber efforts to support this platform. Continue to define Flexible Network Interface and Flexible Terminal Interface standards and support implementation to facilitate data exchange between terminals, network operations centers, and EM&C. Fund the development and integration of MILSATCOM (e.g. WGS), commercial (e.g. mPOWER), and international partner (e.g. UK Skynet) systems into the enterprise architecture. Rapidly respond to implement system resiliency necessary to operate in the contested space domain. Activities include, but are not limited to, program office support, studies, technical analysis, experimentation, prototyping, etc.</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement: FY 2023 funding increased to build upon FY21 Congressional add to continue EM&C and application development.</p>			
Accomplishments/Planned Programs Subtotals	-	-	13.668

	FY 2021	FY 2022
<p>Congressional Add: Enterprise Integration of Fighting SATCOM</p> <p>FY 2021 Accomplishments: This is not a New Start, as it transitions the effort from Program Element 1206431SF, Advanced EHF MILSATCOM (Space). In FY 2021, six prototype contracts were successfully awarded using the Space Enterprise Consortium (SpEC) contracting vehicle to mature capabilities in the following four areas: 1) Terminal Registry to develop an authoritative source of truth for SATCOM terminals, 2) Integrated Data Manager to aggregate, normalize, and tap disparate data, 3) Health and Status to display the health and status of SATCOM systems, and 4) Radio Frequency/Electromagnetic Interference (EMI) to provide spectral and EMI data and support geolocation. In addition, the EM&C Systems Engineering & Integration (SE&I) contractor continued integrating and maturing the SA/COP capability targeted for the Satellite Integrated Operations Division (SIOD). These are all foundational building blocks to provide data visualization applications and tools, a terminal registry, Unified Data Library (UDL) data calls and definition, integration of EMI and current system status, and a common application interface and operating picture. Activities may include, but are not limited to program office support, studies, technical analysis, experimentation, prototyping, etc.</p>	41.711	-
Congressional Adds Subtotals	41.711	-

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

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Exhibit R-2A, RDT&E Project Justification: PB 2023 Air Force		Date: April 2022
Appropriation/Budget Activity 3620F / 5	R-1 Program Element (Number/Name) PE 1206445SF / Commercial SATCOM (C OMSATCOM) Integration	Project (Number/Name) 650140 / COMSATCOM

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

Remarks

D. Acquisition Strategy

Fighting SATCOM Integration utilizes the Middle Tier of Acquisition authorities by leveraging Other Transaction Authority (OTA) agreement awards through the Space Enterprise Consortium to rapidly develop prototype capabilities in operationally relevant blocks. Early risk reduction and delivery of first operational prototypes began in FY 2021. Individual prototype efforts are competitively awarded fixed-price agreements leveraging non-traditional defense contractors. USSF is developing a SATCOM EM&C acquisition strategy and capability roadmap for technology insertion for SATCOM, leveraging various contract vehicle(s) to incrementally deliver capability enhancements while relying on a mix of contractor and SE&I support for integration of these capabilities into a consolidated EM&C system. Prototyping efforts will work in concert with this strategy.

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

Prototyping and Integration	
SATCOM SA/COP	
Enterprise Planning	
Mission Management	
Prototype Transition	
Transition to operational environment	
Mission Support	
Maintain SATCOM EM&C application, environment, data sources	

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Exhibit R-4A, RDT&E Schedule Details: PB 2023 Air Force		Date: April 2022
Appropriation/Budget Activity 3620F / 5	R-1 Program Element (Number/Name) PE 1206445SF / <i>Commercial SATCOM (COMSATCOM) Integration</i>	Project (Number/Name) 650140 / <i>COMSATCOM</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Prototyping and Integration</i>				
SATCOM SA/COP	1	2023	4	2027
Enterprise Planning	1	2023	4	2027
Mission Management	1	2023	4	2027
<i>Prototype Transition</i>				
Transition to operational environment	1	2025	4	2027
<i>Mission Support</i>				
Maintain SATCOM EM&C application, environment, data sources	1	2023	4	2027

Note

Project 650140 does not have FY 2022 funding. FY 2021 funding is carrying the program events listed above through FY 2022 and until FY 2023 funding becomes available.

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Appropriation/Budget Activity 3620F / 5					R-1 Program Element (Number/Name) PE 1206445SF / <i>Commercial SATCOM (C OMSATCOM) Integration</i>				Project (Number/Name) 651126 / <i>COMSATCOM Infrastructure</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
651126: <i>COMSATCOM Infrastructure</i>	-	0.000	23.400	9.845	0.000	9.845	5.471	5.012	0.000	0.000	0.000	43.728
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

In FY 2022, PE 1206445SF, Project 651126, COMSATCOM Infrastructure, is a New Start.

A. Mission Description and Budget Item Justification

IAW the FY18 NDAA 1601(a), as amended, and on behalf of the Chief of Space Operations (CSO) and in consultation with the DoD Chief Information Officer (CIO), the USSF Commercial Satellite Communications Office (CSCO), serves as the sole authority for the procurement of COMSATCOM services for the DoD; this responsibility was previously held by DISA. In order to provide the joint warfighter with modernized access to COMSATCOM services and ensure combat effectiveness across all domains, the CSCO requires a comprehensive COMSATCOM Management & Control (CM&C) Systems of Systems. CM&C implementation is also critical to complete the Congressionally-mandated COMSATCOM mission transition from DISA to USSF. The CM&C Program will have multiple components including: (1) Business Suite & Marketplace designed to automate and streamline requests for work and customer interaction, thereby replacing manual processes for over 100 different contracts valued at \$5B over the FYDP; (2) Financial Management System required to operate a new and cutting-edge Enterprise Space Activity Group (ESAG) under the Defense Working Capital Funds (DWCF); (3) Integration with third party systems and capabilities, including cloud-based hosting and Enterprise Management & Control (EM&C) - the nexus of future USSF space-based SATCOM Command and Control (C2).

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2021	FY 2022	FY 2023
Title: COMSATCOM Management and Control (CM&C) System of Systems	0.000	23.400	9.845
<p>Description: The subject Research, Development, Test and Evaluation (RDT&E) funds will be executed by the Space Systems Command (SSC), and will be used to stand up mission-critical COMSATCOM support systems, thereby enabling a transformational change to the acquisition of COMSATCOM, increasing speed to service, improving quality of service, reducing cost, and laying the foundation to incorporate new industry innovations into the future. This activity will transition and enhance the existing COMSATCOM customer-facing tools and background financial management data systems from DISA to the USSF. An enhanced system of tools is required to automate and securely distribute COMSATCOM services and capabilities to stakeholders, in order to improve the ordering, billing, activation, provisioning, and other financial management tasks currently leveraging limited DISA capability.</p> <p>FY 2022 Plans: Funding in FY 2022 will develop USSF financial management systems, integrate CM&C systems, and build the applications that populate the CSCO Marketplace. The Financial Management System encompasses the finance and accounting capabilities required to manage and report CSCO working capital fund business such as invoicing, payments and rate tracking. CM&C</p>			

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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2021	FY 2022	FY 2023
<p>Integration provides the processes and capabilities needed to interconnect all relevant and applicable sub-systems and components, to include those owned and operated by other organizations and commercial providers, to facilitate enterprise connectivity. The CSCO Marketplace will consist of applications required by customers to order and/or activate products and services. The CSCO Marketplace also includes 24/7 customer support. Activities may include, but are not limited to, program office support, studies, non-recurring engineering, technical analysis, experimentation, prototyping, etc.</p> <p>FY 2023 Plans: Funding in FY 2023 will continue FY 2022 integration work for the CSCO Marketplace and Financial Management Systems into third party systems, etc. FY 2023 funding will also provide any necessary enhancements required for optimized user experience at all hierarchal levels for the systems. Finally, FY 2023 funding will ensure establishment or continuation of Authority to Operate and associated risk management and cybersecurity requirements for the applicable systems.</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement: FY 2023 funds decreased due to the main system development occurring in FY 2022. FY 2023 funding is to continue integration, enhancements and on-going modifications.</p>			
Accomplishments/Planned Programs Subtotals	0.000	23.400	9.845

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

N/A

Remarks

D. Acquisition Strategy

The current acquisition strategy is to perform competitive awards to qualified contractors via multiple contracting authorities. Efforts will include required compliance tools and processes supporting existing business models, necessary operational readiness updates to existing equipment, and other services required to implement the transition from DISA to USSF. Contracts may be competitively awarded, utilizing a to-be-determined contract type.

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	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

CM&C System-of-Systems																												
Financial Management System																												
CSCO Marketplace																												
CM&C Integration																												

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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
CM&C System-of-Systems				
Financial Management System	4	2022	4	2024
CSCO Marketplace	3	2022	3	2025
CM&C Integration	3	2022	4	2025