Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Air Force											Date: February 2020	
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 1206433F / *Wideband Global SATCOM (SPACE)*							
COST ($ in Millions)	**Prior Years**	**FY 2019**	**FY 2020**	**FY 2021 Base**	**FY 2021 OCO**	**FY 2021 Total**	**FY 2022**	**FY 2023**	**FY 2024**	**FY 2025**	**Cost To Complete**	**Total Cost**
Total Program Element	-	3.833	1.920	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	5.753
657102: *Command & Control Sys-Consolidated (CCS-C)*	-	3.833	1.920	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	5.753
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Military Satellite Communications (MILSATCOM) Command and Control System-Consolidated (CCS-C) system provides integrated launch and on-orbit command and control (C2) functionality at Schriever AFB and Vandenberg AFB for MILSATCOM satellites. Schriever AFB is used for primary operations and Vandenberg AFB is used for backup operations. CCS-C uses modified commercial off the shelf hardware/software to control emerging and legacy MILSATCOM systems including Milstar, Defense Satellite Communications System (DSCS), Wideband Global SATCOM (WGS) and Advanced Extremely High Frequency (AEHF) satellites.

The CCS-C project 657102 funds system architecture evolution to provide increased performance for additional satellites and to comply with DoD, Air Force, and Air Force Space Command (AFSPC)-directed standards for Information Assurance, Satellite Control Standardization, and Net-Readiness. This continuing effort was previously funded in the FY 2014 President's Budget and prior as an Acquisition Category II (ACAT II) program. With the 10 October 2013 Final Operational Capability (FOC) declaration, the program has transitioned to an ACAT III program, the CCS-C Assurance and Capability Enhancement (CACE), beginning FY 2014. FY 2020 will be the final year for the CACE effort. The newly enhanced CCS-C system will remain and continue to be funded with O&M funds. The WGS and AEHF procurement program elements fund the mission unique software and databases for the WGS Block II Follow-On satellites and the AEHF 4-6 satellites, respectively.

Space acquisition must respond with speed and agility to emerging adversary threats. Space & Missile Systems Center (SMC) is transforming 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, SMC 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 CCS-C weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program elements 1206392F and 1206398F.

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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Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 1206433F / *Wideband Global SATCOM (SPACE)*	

B. Program Change Summary ($ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Previous President's Budget	3.970	1.920	0.000	0.000	0.000
Current President's Budget	3.833	1.920	0.000	0.000	0.000
Total Adjustments	-0.137	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	0.000	0.000			
• SBIR/STTR Transfer	-0.137	0.000			
• Other Adjustments	0.000	0.000	0.000	0.000	0.000

C. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: CCS-C development	3.833	1.920	0.000
Description: Develop system architecture to provide enhanced C2 of MILSATCOM satellites. ***FY 2020 Plans:*** Complete Operational Testing for CACE scheduled for 3rd Qtr FY 2020 at which time CACE transitions to Sustainment. 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, prototyping, etc. ***FY 2021 Plans:*** N/A ***FY 2020 to FY 2021 Increase/Decrease Statement:*** N/A			
Accomplishments/Planned Programs Subtotals	3.833	1.920	0.000

D. Other Program Funding Summary ($ in Millions)

N/A

Remarks

E. Acquisition Strategy

Competitive contract was awarded in November 2012 and began performance in January 2013. The CCS-C Production and Sustainment Contract (CPASC) includes effort to increase the capability of the CCS-C system to provide ongoing C2, launch readiness support, and anomaly resolution for MILSATCOM satellite families. The

Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Air Force	Date: February 2020
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CCS-C project 657102 funds system architecture evolution to provide increased performance for additional satellites and to comply with DoD, Air Force, and AFSPC-directed standards for Information Assurance, Satellite Control Standardization, and Net-Readiness.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Air Force		Date: February 2020
Appropriation/Budget Activity 3600 / 5	**R-1 Program Element (Number/Name)** PE 1206433F / *Wideband Global SATCOM (SPACE)*	**Project (Number/Name)** 657102 / *Command & Control Sys-Consolidated (CCS-C)*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Production and Sustainment Contract	C/FPIF	Kratos : San Diego, CA	-	3.052	Nov 2018	1.454	Nov 2019	-		-		-	0.000	4.506	0.000
Technical Mission Analysis	C/Various	Aerospace : El Segundo, CA	-	0.277	Nov 2018	-		-		-		-	0.000	0.277	-
Enterprise SE&I	C/CPIF	LinQuest : Los Angeles, CA	-	0.437	Nov 2018	0.346	Nov 2019	-		-		-	0.000	0.783	0.000
		Subtotal	-	3.766		1.800		-		-		-	0.000	5.566	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
A&AS	Various	Various : Various	-	0.067	Nov 2018	0.115	Nov 2019	-		-		-	0.000	0.182	0.000
Other Support	Various	Various : Various	-	0.000	Nov 2018	0.005	Nov 2019	-		-		-	0.000	0.005	-
		Subtotal	-	0.067		0.120		-		-		-	0.000	0.187	N/A

	Prior Years	FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	3.833		1.920		-		-		-	0.000	5.753	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2021 Air Force		Date: February 2020
Appropriation/Budget Activity 3600 / 5	**R-1 Program Element (Number/Name)** PE 1206433F / *Wideband Global SATCOM (SPACE)*	**Project (Number/Name)** 657102 / *Command & Control Sys-Consolidated (CCS-C)*

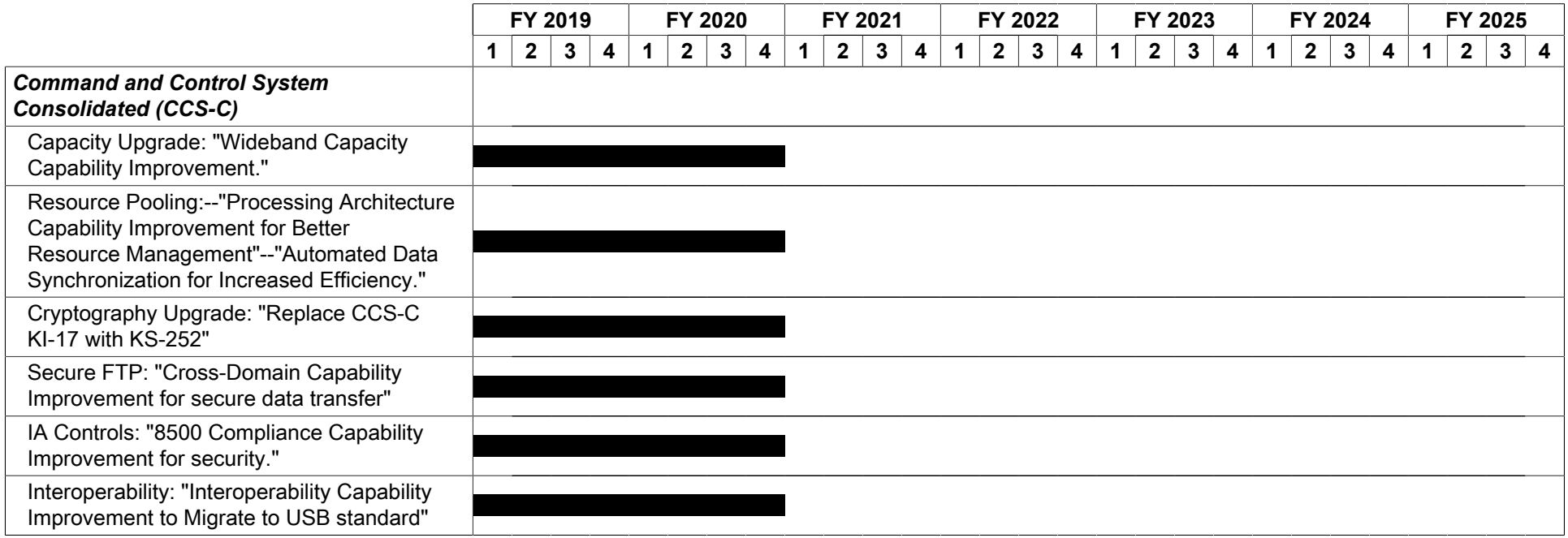

Exhibit R-4A, RDT&E Schedule Details: PB 2021 Air Force		Date: February 2020
Appropriation/Budget Activity 3600 / 5	**R-1 Program Element (Number/Name)** PE 1206433F / *Wideband Global SATCOM (SPACE)*	**Project (Number/Name)** 657102 / *Command & Control Sys-Consolidated (CCS-C)*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Command and Control System Consolidated (CCS-C)				
Capacity Upgrade: "Wideband Capacity Capability Improvement."	1	2019	4	2020
Resource Pooling:--"Processing Architecture Capability Improvement for Better Resource Management"--"Automated Data Synchronization for Increased Efficiency."	1	2019	4	2020
Cryptography Upgrade: "Replace CCS-C KI-17 with KS-252"	1	2019	4	2020
Secure FTP: "Cross-Domain Capability Improvement for secure data transfer"	1	2019	4	2020
IA Controls: "8500 Compliance Capability Improvement for security."	1	2019	4	2020
Interoperability: "Interoperability Capability Improvement to Migrate to USB standard"	1	2019	4	2020

Note

CCS-C upgrade started in 1Q, FY 2015.