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 4: *Advanced Component Development & Prototypes (ACD&P)*					R-1 Program Element (Number/Name) PE 1206855SF / *Evolved Strategic SATCOM (ESS)*							
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	-	69.009	172.089	565.597	0.000	565.597	670.659	1,274.735	1,351.919	1,588.225	Continuing	Continuing
643725: *Evolved Strategic SATCOM (ESS)*	-	69.009	172.089	565.597	0.000	565.597	670.659	1,274.735	1,351.919	1,588.225	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

ESS will meet the requirements for strategic communications and capability gaps identified in the Protected Satellite Communications Services (PSCS) Analysis of Alternatives (AoA), the Protected Follow-on for Resiliency (PAFR) Study and the Strategic Tiger Team. The ESS architecture and functionality will be designed in accordance with the United States Strategic Command's signed ESS Concept of Operations and the Joint Requirements Oversight Council's validated Capability Development Document (CDD) satisfying the legacy Advanced Extremely High Frequency (AEHF) strategic requirements and mission performance with enhancements for increased resiliency and cybersecurity. The ESS system continues and adds to the strategic SATCOM mission of the AEHF program by providing space and mission control segments for worldwide and arctic DoD strategic, secure, jam-resistant, communications for ground, sea, and air assets.

ESS will support strategic mission requirements to provide the National Command Authority (NCA) and Combatant Commanders with highly-reliable, secure Military Satellite Communications. ESS will support a strategic need date in the early 2030's in all operational environments and will be compatible with the existing architectures. The ESS system will satisfy emerging requirements using modular open system approaches to support incremental enhancements.

For more rapid and resilient strategic capability risk reduction, the ESS Program Office is executing its approved Space Segment acquisition strategy that leverages Middle Tier Acquisition authorities from the National Defense Authorization Act of 2016 for rapid prototyping, while maintaining the continuity of the AEHF strategic mission.

Activities for the ESS ground segment acquisition includes evolving and enhancing the existing ground segment, space-to-ground segment integration, and modernization in support of Enterprise Ground Services compatibility, in accordance with the acquisition strategies and schedules.

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 re-purpose existing capabilities.

The FY 2023 funding request was reduced by $7.746M to account for the availability of prior year execution balances.

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 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 1206855SF *I Evolved Strategic SATCOM (ESS)*

The total cost of the Evolved Strategic SATCOM Space Segment Rapid Prototype Middle Tier of Acquisition effort is $1,435.6M, including RDT&E and procurement of prototype units. The Evolved Strategic SATCOM Space Segment Rapid Prototype Middle Tier of Acquisition effort is fully funded across the Future Years Defense Program.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver ESS 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 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Previous President's Budget	71.395	160.056	0.000	0.000	0.000
Current President's Budget	69.009	172.089	565.597	0.000	565.597
Total Adjustments	-2.386	12.033	565.597	0.000	565.597
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	-7.967			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	20.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-2.386	0.000			
• Other Adjustments	0.000	0.000	565.597	0.000	565.597

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2021	FY 2022
Project: 643725: *Evolved Strategic SATCOM (ESS)*		
Congressional Add: *IT upgrades to NC3 Cybersecurity*	-	20.000
Congressional Add Subtotals for Project: 643725	-	20.000
Congressional Add Totals for all Projects	-	20.000

Change Summary Explanation

FY 2022: +$20.000M; Congressional add for IT upgrades to NC3 cybersecurity.

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 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 1206855SF *I Evolved Strategic SATCOM (ESS)*

FY 2023: +$565.597M; 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 FY2023 cannot be made in a relevant manner.

C. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: Space Segment Prototyping	54.889	126.577	352.001

Description: Award up to three competitive rapid-prototyping contracts. Invest in technology and demonstrations that enable continued development of a modernized, strategic payload and other key technology prototypes, risk reduction, and space segment design. Enables long-term return on investment through an energized Strategic SATCOM industrial base, increased competition, promotion of innovation by driving diverse designs, and increased resiliency. Actively manage contractors through prototyping, demonstration and requirements/criteria needed for contractors to competitively bid on the ESS space segment Build, Integration and Test (I&T) and Delivery follow-on.

FY 2022 Plans:
Continue execution of up to three rapid prototyping contracts with payload and other key technology demonstrations, risk reduction activities, and space segment design focused on, but not limited to, delivery of initial ESS CONOPS, interoperability concepts, and crosslink demonstrations. Complete System Functional Reviews (SFR). Each of the contracts will have varying prototyping and demonstration plans and schedules, depending on the specific contractor. Each of the contractors will have varying requirements for hardware planning and purchase, procurement of contractor and government provided test equipment, manufacturing prototypes, and manpower ramp-up. Includes all necessary program office, cyber, resiliency, and security support and equipment as well as Government contractor support for oversight and integration. Additionally, FY 2022 funding will allow the program to rapidly respond 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, prototyping, etc. FFRDC, UARC, and technical support will assist with requirements trades, technical approaches, threat assessment and mitigation approaches, and ESS testing assets.

FY 2023 Plans:
Continue execution of three rapid prototyping contracts through critical year of payload technology development. Capitalize on contractors' System Functional Review technical baselines and artifacts to perform functional demonstrations of key technical elements within the payload using breadboards as necessary. Demonstrate and validate microelectronic designs, hardware producibility, software coding, and performance to derived system requirements. Assess contractor demonstration performance against preliminary design review entrance criteria. Contractor demonstrations are focused on phased arrays, crosslinks, and timing management. Demonstrate that electronics solution can transmit, receive, process and route the ESS waveform and can perform the protocols, modes, and distribution as outlined in the Government-controlled ESS System Specification. Demonstrate ability to produce electronically-steered arrays that can receive and transmit in specific portions of the electromagnetic spectrum. Ensure contractors' sub-array or subset of elements can perform to requirements decomposed from the systems level for power, signal integrity, timing, noise, etc. Validate system performance requirements at the array level. Develop software simulations

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Air Force	Date: April 2022
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C. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
to verify that design for constellation time management can meet the ESS requirements for autonomous operations. Resolve open system engineering trades and populate outstanding requirements in order to progress to a space segment-level preliminary design review in FY 2024. The Systems Engineers will show full traceability that the design satisfies the Capability Development Document and that each requirement has sufficient margin between the expected performance and associated requirement. Expand focus to spacecraft bus design, bus integration, and delivery of bus-to-payload interface control documents. Provide interface control documents for modular open system architecture designs for additional capabilities. 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 funds increased due to the increased critical payload technology development and demonstration necessary to progress the three firm fixed price competing contractors towards preliminary design maturity. In FY 2023, the demonstrations significantly accelerate in complexity, payload functionality, and validation of key functions.			
Title: ESS Ground Segment and Space-to-Ground Integration	9.223	15.360	173.027
Description: Develop and field the ESS ground segment, to include Mission Planning, Command and Control and other architecture and activities required to support the ESS space segment. Includes interoperability with the existing architectures and interfaces for Enterprise Ground Services (EGS) compatibility. Provide for space-to-ground (system) and mission integration for the ESS system of systems (SoS). ***FY 2022 Plans:*** Complete five Broad Agency Announcement contracts for ground segment Phase 1 Mission Planning technology readiness. Knowledge gained from Phase 1 will inform analysis for Phase 2 Mission Planning architectural design, culminating in a presentation of the ground segment acquisition strategy to the Milestone Decision Authority for approval. Focus program office and other related activities on ground segment Phase 2 Mission Planning architectural design that includes, but is not limited to studies, technical analysis, market research, engagements with industry, acquisition strategy development, and source selection preparation. Prepare request for proposal and contract awards for ground segment Phase 2 Mission Planning architectural design in FY 2023. Continue ground segment Command and Control studies with design and development to best evolve these legacy systems. Includes all required cryptography, cyber, resiliency, and security activities as well as Government contractor support for management and oversight. FFRDC and UARC studies and technical support will assist with requirements trades, technical approaches, threat assessment and mitigation approaches, prototyping strategy, and ESS testing assets. Continue development activities in support of the ground segment and system/mission integration schedules. ***FY 2023 Plans:***			

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 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 1206855SF *I Evolved Strategic SATCOM (ESS)*

C. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Award multiple Ground and SoS Integration contracts. Fund program office, FFRDC, and UARC support to execute a competition which acquires a secure software development framework/pipeline and ensures ESS alignment with EGS. Build a classified development environment to support a Continuous Integration/Continuous Development (CI/CD) Software Pipeline and work with operational mission partners to acquire Authority-to-Operate (ATO) at multiple sites. Onboard mission partners into end-to-end development environment for production, test, war gaming, and cyber testing. Generate strategic framework for mission planning applications and produce a System Developer Kit. Prepare ESS to procure ground system specific applications for satellite control, mission planning, and satellite integration and test. Develop Request for Proposal (RFP) for mission planning applications. Create software catalogue and functionally decompose software into a delivery roadmap aligned with strategic framework. Develop end user agreements with operational sites outlining deliveries and key milestones. Begin integration work to establish connectivity with Public Key Management Architecture (PKMA) and cryptographic modernization efforts with the NSA. Continue ground segment Command and Control (C2) studies with legacy sustainment team and terminal program office to evolve legacy systems by investigating code reuse with AEHF and Enhanced Polar System (EPS) to capitalize on enterprise NC3 efforts. Assess necessary mechanical and cryptographic improvements to the Command Post Terminal to support ESS. Continue development activities in support of the ground segment and system/mission integration schedules. Activities include, but are not limited to program office support, studies, technical analysis, experimentation, prototyping, etc. FFRDC, UARC, and technical support will assist with requirements trades, technical approaches, threat assessment and mitigation approaches, and ESS testing assets. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** FY 2023 funds increased to support the award of multiple contracts to begin ground system acquisition for the NC3 enterprise to include ramping up software procurement, classified infrastructure development, and systems engineering and integration required to manage the complexity and testing of 32 interfaces across space, ground, terminals, and end users.			
Title: End-Cryptographic Unit (ECU) ***Description:*** Develop and deliver the National Security Agency (NSA)-certified ECUs required for secure strategic communications encryption in the ESS payloads, bus, and payload test terminals in accordance with the approved ECU acquisition strategy and schedule. Upon development completion, production ECU units will be delivered as government-furnished equipment (GFE) for integration and testing with the ESS payloads and payload test terminals. ***FY 2022 Plans:*** Provide for NSA support on encrypted ECU requirements and standards. Execute the approved space segment payload and payload test terminals ECU acquisition strategy with the Air Force's Lifecycle Management Center (AFLCMC) Cryptologic and Cyber System Division (CCSD) for ECU crypto development. Define and prepare for ECU development contract award to support future delivery of ECUs that meet the ESS control documents. Plan and provide program office support, government-furnished	4.897	10.152	40.569

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Air Force	Date: April 2022
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C. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
equipment, studies or technical analyses, and information or resources in support of prototyping activities. Includes all required cyber, resiliency, and security activities required as well as Government contractor support for management and oversight. FFRDC and UARC studies and technical support will assist with requirements trades, technical approaches, threat assessment and mitigation approaches, and ESS testing assets. ***FY 2023 Plans:*** Award the ECU development and production contract through a CCSD-led and ESS Program Office-supported competitive solicitation to transition to the Engineering & Manufacturing Development (EMD) phase. Fund CCSD, UARC, and FFRDC to provide program office support, planning, GFE, studies, technical analyses and information or resources in support of prototyping activities. Support ESS ECU requirements for the payload, bus, and test terminal ECUs. Provide NSA-certified crypto solutions to support tracking, telemetry, and commanding (TT&C), mission data (MD), transmission security (TRANSEC), and communications security (COMSEC); includes all required cyber, resiliency, and security activities required, as well as Government support for contractor management and oversight. FFRDC and UARC studies and technical support will assist with requirements trades, technical approaches, threat assessment and mitigation approaches, and ESS testing assets to include the Strategic Test Terminal (ST2). Continue to coordinate with the NSA on the development and certification of ECU requirements and the delivery of cryptographic keying material to support the development effort. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** FY 2023 funds increase due to ECU contract award and program transition to EMD acquisition phase. This will allow the development contractor to start design work to meet ESS requirements for payload and test terminal ECUs, to include Engineering Development Unit (EDU), Production Representative Article (PRA), and Flight ECUs.			
Accomplishments/Planned Programs Subtotals	69.009	152.089	565.597

	FY 2021	FY 2022
Congressional Add: IT upgrades to NC3 Cybersecurity	-	20.000
FY 2022 Plans: The Congressional add supports: Improve nuclear command, control, and communications (NC3) cybersecurity practices by creating secure IT infrastructure to connect the government and industry partners to protect the critical ESS NC3 SATCOM capability for the nation. This secure IT infrastructure will allow for the full and efficient elevation of the overall ESS program's security posture necessary to enable this protection.		
Congressional Adds Subtotals	-	20.000

D. Other Program Funding Summary ($ in Millions)

N/A

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Air Force	Date: April 2022
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D. Other Program Funding Summary ($ in Millions)

Remarks

E. Acquisition Strategy

The Milestone Decision Authority (MDA) designated the ESS Space Segment as an FY 2016 National Defense Authorization Act Middle Tier Acquisition (Rapid Prototyping) activity and approved the ESS acquisition strategy on 14 December 2018. A rapid prototyping phase effectively replaces the Technology Maturation and Risk Reduction phase from a traditional acquisition under Department of Defense 5000 series Directives and Instructions. The ESS Program Office used this approach to award three (3) space segment contracts in late FY 2020 and early FY 2021 that focus on reducing space segment risks with the objective of maximizing ESS demonstrated capability for the payload and other key technologies. An ESS Program Office-led RFP and source selection will determine which space prototyping contractor(s) is positioned for the space segment Build, Integration and Test, and Delivery follow-on contract. The space prototyping contractors will be carried through the follow-on contract source selection to continue momentum until the follow-on contract is awarded in late FY 2025.

Competition during space prototyping is energizing the industrial base in strategic SATCOM; injecting diverse technical processes and integration approaches; burning down risks early and identifying/correcting issues as early as possible; and decreasing traditional fielding timelines to support a more resilient, responsive architecture against emerging threats. Success during competitive rapid-prototyping determines and informs follow-on Build, I&T, and Delivery.

The initial Ground Segment Acquisition Strategy was approved by the Program Executive Officer (PEO) in 4th Quarter FY 2019 to begin early technology readiness studies for ESS Mission Planning in FY 2020. The Mission Planning phase architectural design will be informed by Mission Planning phase and the ESS program forecasts a contract award in early FY 2023, utilizing competitive solicitation and potentially awarding to multiple contractors. Command and Control studies are underway to best evolve these legacy systems.

An ECU acquisition strategy was approved by the PEO in FY 2021. The ESS program office is partnering with the AFLCMC CCSD for ECU crypto development, both on the space vehicle for payload and bus cryptographic devices and in the test terminal. Using a CCSD-led competitive RFP, a contract for payload and payload test terminal ECU development will be awarded in early FY 2023.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Air Force		Date: April 2022
Appropriation/Budget Activity 3620F / 4	**R-1 Program Element (Number/Name)** PE 1206855SF / *Evolved Strategic SATC OM (ESS)*	**Project (Number/Name)** 643725 / *Evolved Strategic SATCOM (ESS)*

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 Segment Prototyping	SS/FFP	Various : Various	-	37.513	Oct 2020	98.199	Oct 2021	330.764	Oct 2022	-		330.764	Continuing	Continuing	-
Ground Segment and Space-to-Ground Integration	TBD	TBD : TBD	-	3.877	Mar 2021	6.628	Jan 2022	130.553	Jan 2023	-		130.553	Continuing	Continuing	-
IT Upgrades to NC3 cybersecurity	TBD	TBD : TBD	-	-		20.000	Jun 2022	-		-		-	0.000	20.000	-
End-Cryptographic Unit (ECU)	TBD	TBD : TBD	-	0.888	Mar 2021	3.603	Jan 2022	33.491	Jan 2023	-		33.491	Continuing	Continuing	-
Technical Mission Analysis	MIPR	Aerospace : El Segundo, CA	-	10.828	Feb 2021	16.378	Nov 2021	19.476	Nov 2022	-		19.476	Continuing	Continuing	-
Enterprise SE&I	C/CPIF	Linquest : Los Angeles, CA	-	10.729	Feb 2021	14.255	Feb 2022	21.484	Feb 2023	-		21.484	Continuing	Continuing	-
		Subtotal	-	63.835		159.063		535.768		-		535.768	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	-	3.455	Feb 2021	3.984	Nov 2022	4.869	Nov 2023	-		4.869	Continuing	Continuing	-
Other Support	Various	Various : Various	-	0.050	Mar 2021	0.500	Oct 2021	0.750	Oct 2022	-		0.750	Continuing	Continuing	-
A&AS	Various	Various : Various	-	1.669	Mar 2021	8.542	Nov 2021	24.210	Nov 2022	-		24.210	Continuing	Continuing	-
		Subtotal	-	5.174		13.026		29.829		-		29.829	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	-	69.009		172.089		565.597		-		565.597	Continuing	Continuing	N/A

Remarks

Space Segment Prototyping includes three firm-fixed-price contracts to Lockheed Martin, Northrop Grumman, and Boeing and each will be obligated up to $85.0M in FY23.
The Space Segment Prototyping also includes related efforts that are not included in these contracts, such as studies/analyses, test equipment, and additional technology

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Air Force			Date: April 2022
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	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract

development required for program success. These efforts provide data for requirements trades, technical approaches, threat assessment and mitigation, and test approaches/ assets.

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Air Force		Date: April 2022
Appropriation/Budget Activity 3620F / 4	**R-1 Program Element (Number/Name)** PE 1206855SF / *Evolved Strategic SATC OM (ESS)*	**Project (Number/Name)** 643725 / *Evolved Strategic SATCOM (ESS)*

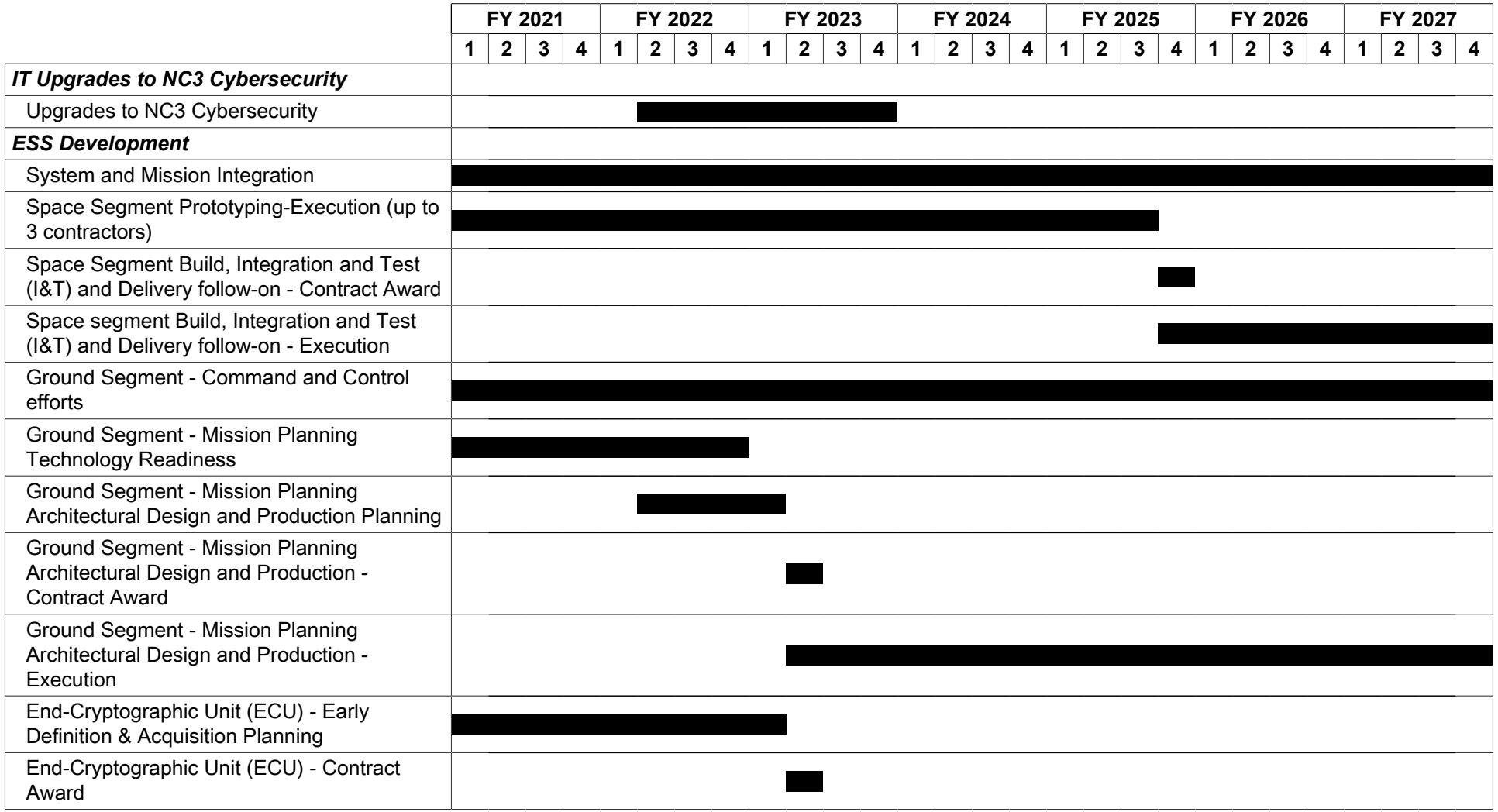

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Air Force		Date: April 2022
Appropriation/Budget Activity 3620F / 4	**R-1 Program Element (Number/Name)** PE 1206855SF / *Evolved Strategic SATC OM (ESS)*	**Project (Number/Name)** 643725 / *Evolved Strategic SATCOM (ESS)*

	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
End-Cryptographic Unit (ECU) - Development & Delivery																												

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Air Force		Date: April 2022
Appropriation/Budget Activity 3620F / 4	**R-1 Program Element (Number/Name)** PE 1206855SF / *Evolved Strategic SATC OM (ESS)*	**Project (Number/Name)** 643725 / *Evolved Strategic SATCOM (ESS)*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
IT Upgrades to NC3 Cybersecurity				
Upgrades to NC3 Cybersecurity	2	2022	4	2023
ESS Development				
System and Mission Integration	1	2021	4	2027
Space Segment Prototyping-Execution (up to 3 contractors)	1	2021	3	2025
Space Segment Build, Integration and Test (I&T) and Delivery follow-on - Contract Award	4	2025	4	2025
Space segment Build, Integration and Test (I&T) and Delivery follow-on - Execution	4	2025	4	2027
Ground Segment - Command and Control efforts	1	2021	4	2027
Ground Segment - Mission Planning Technology Readiness	1	2021	4	2022
Ground Segment - Mission Planning Architectural Design and Production Planning	2	2022	1	2023
Ground Segment - Mission Planning Architectural Design and Production - Contract Award	2	2023	2	2023
Ground Segment - Mission Planning Architectural Design and Production - Execution	2	2023	4	2027
End-Cryptographic Unit (ECU) - Early Definition & Acquisition Planning	1	2021	1	2023
End-Cryptographic Unit (ECU) - Contract Award	2	2023	2	2023
End-Cryptographic Unit (ECU) - Development & Delivery	2	2023	3	2027