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Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Army **Date:** March 2024

Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army / BA 7: Operational Systems Development	R-1 Program Element (Number/Name) PE 0303142A / SATCOM Ground Environment (SPACE)
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	14.551	26.838	26.643	-	26.643	36.166	12.389	12.530	12.655	Continuing	Continuing
253: Dscs-Dcs (Phase II)	-	4.523	11.902	4.794	-	4.794	4.800	4.850	4.906	4.955	Continuing	Continuing
456: MILSATCOM System Engineering	-	2.813	1.776	1.769	-	1.769	2.415	2.470	2.498	2.523	0.000	16.264
CO7: Protected Tactical Satellite Communications	-	7.215	13.160	20.080	-	20.080	28.951	5.069	5.126	5.177	0.000	84.778

A. Mission Description and Budget Item Justification

Project 253, Dscs-Dcs (Phase II), SATCOM Ground Environment (SPACE) - A portion of this funding line is directly aligned to support the Army Network Modernization Strategy.

FY 2025 Base funding in the amount of \$4.794 million develops Satellite Communication (SATCOM) ground subsystem equipment and software in support of Joint Chiefs of Staff (JCS) validated Mission Command Network and Systems requirements for the worldwide Defense Enterprise Wideband SATCOM System (DEWSS). DEWSS is composed of the Super High Frequency (SHF) Wideband Global SATCOM (WGS) programs, which supports legacy, interim and emerging communication space architectures and future force requirements. Expansion of the WGS constellation and upgrades to WGS capabilities are vital to support the Army's emerging power projection and rapid deployment mission. WGS provides high-capacity tactical end-to-end connectivity and interoperability with strategic networks and national decision-makers, satisfying JCS network operations in support of the President, JCS, combatant commanders, military departments, Department of State and other government departments and agencies. This requirement supports the Army 2030 / 2040 Strategic Plan.

Project 456, MILSATCOM System Engineering is directly aligned to Army Network Modernization Strategy.

FY 2025 base funding in the amount of \$1.769 million supports MILSATCOM System Engineering (MSE). MSE assures the tactical Army satellite communications (SATCOM) and SATCOM On-the-Move (SOTM) systems are engineered to legally and efficiently operate worldwide. MILSATCOM System Engineering shapes Joint SATCOM systems' design efforts, standards development and planning processes. MILSATCOM System Engineering represents the Army's tactical interests within Department of Defense (DoD), Commercial and International forums to ensure affordable and scalable future SATCOM capabilities for maneuver forces. These efforts are synchronized with the Space Force and DoD's plans for Protected Tactical Waveforms (PTW) on Wideband Global SATCOM (WGS), the Protected Tactical Satellite (PTS), and commercial SATCOM systems. These efforts also ensure that the Army continues to evaluate evolving technologies for the planning and designing of SATCOM solutions that reduce technical and programmatic impacts. MILSATCOM System Engineering expertise supports obtaining SATCOM modem and terminal certifications for Tactical Network systems to operate on the network, provides SATCOM spectrum management and lab support, and supports testing and integration of Assured Position Navigation and Timing (APNT) capabilities.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040: <i>Research, Development, Test & Evaluation, Army / BA 7: Operational Systems Development</i>	R-1 Program Element (Number/Name) PE 0303142A / <i>SATCOM Ground Environment (SPACE)</i>	
<p>MILSATCOM System Engineering also provides the technical and programmatic expertise to facilitate the Unified Network Capabilities and Integration (UNCI) integration mission of transport convergence and integration of emerging technologies within the Tactical Network portfolio. MILSATCOM SE provides the programmatic and technical expertise to coordinate the UNCI mission to align and integrate elements of the Tactical Network portfolio in support of units such as the Expeditionary Signal Battalion (ESB) and Multi Domain Task Force (MDTF). MILSATCOM System Engineering expertise supports the evaluation and integration of commercial SATCOM (COMSATCOM) capabilities with MILSATCOM and Tactical Network systems in support of pathway diversity and other modernization efforts. MILSATCOM System Engineering supports the development of the Network Centric Waveform Technology (NCW-T) to support regional SATCOM planning and management. MILSATCOM System Engineering expertise with lab testing and analysis supports future efforts to support One Network Service Support Center and the ability to evaluate Low Probability of Intercept (LPI), Low Probability of Detection (LPD), Transmission Security (TRANSEC), and resiliency capabilities of current and emerging technologies.</p> <p>Project CO7, Protected Anti-Jam Tactical SATCOM is directly aligned to the Army Network Modernization Priority and supports the Army of 2030 and 2040 initiatives.</p> <p>Project CO7, Protected Anti-Jam Tactical SATCOM funding supports development of the Army's Resilient Anti-Jam modem (RAM previously referred to as Block II Small Form Factor (SFF)), contactor and government system engineering and program management. Funding supported the prior development of the Air Force/Army Anti-Jam Modem (A3M) (previously referred to as Block I Large Form Factor (LFF)).</p> <p>Protected Anti-Jam Tactical SATCOM (Protected SATCOM) fills a critical communications gap for Anti-Jam SATCOM capability for mobile ground forces conducting expeditionary operations in electronically contested environments. It provides the ability for the Army tactical terminals to be resilient in a contested environment and protect against catastrophic loss of situational awareness and command and control during critical battle movement with Anti-Jam capabilities. A3M will offer tactical Army protection against interference that is either intentional or unintentional. These DoD Joint efforts are synchronized with United States Space Force (USSF) and Army for execution of Protected Tactical Waveforms (PTW) on Wideband Global SATCOM (WGS), Protected Tactical Satellites (PTS), and commercial SATCOM systems.</p> <p>Protected SATCOM supports initial development, testing and certification of production representative Protected Tactical Waveform (PTW) modems, incorporating Army requirements, to support continued spiral development of critical protected communications capabilities to address resiliency in jamming environments. The Protected/Resilient SATCOM Abbreviated - Capabilities Development Document (A-CDD) was validated and approved in June 2021.</p> <p>FY 2025 funding in the amount of \$20.080 million will support development of Army RAM, contactor and government system engineering and program management (SEPM), test and certification, logistics support and data development and other associated activities as required.</p>		

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Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Army	Date: March 2024
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Appropriation/Budget Activity 2040: <i>Research, Development, Test & Evaluation, Army / BA 7: Operational Systems Development</i>	R-1 Program Element (Number/Name) PE 0303142A / SATCOM Ground Environment (SPACE)
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B. Program Change Summary (\$ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	18.297	26.838	11.731	-	11.731
Current President's Budget	14.551	26.838	26.643	-	26.643
Total Adjustments	-3.746	0.000	14.912	-	14.912
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-3.079	-			
• SBIR/STTR Transfer	-0.667	-			
• Adjustments to Budget Years	-	-	14.912	-	14.912

Change Summary Explanation

FY2025 increase of \$14.912 million supports the Army development and testing of the Resilient Anti-Jam Modem (RAM).

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Exhibit R-2A, RDT&E Project Justification: PB 2025 Army										Date: March 2024		
Appropriation/Budget Activity 2040 / 7					R-1 Program Element (Number/Name) PE 0303142A / SATCOM Ground Environment (SPACE)				Project (Number/Name) 253 / Dscs-Dcs (Phase II)			
COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
253: Dscs-Dcs (Phase II)	-	4.523	11.902	4.794	-	4.794	4.800	4.850	4.906	4.955	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Project 253, Dscs-Dcs (Phase II), SATCOM Ground Environment (SPACE) supports the Army's 2030 / 2040 Strategic Plan and network modernization strategy.

FY 2025 Base dollars in the amount of in the amount of \$4.794 million develops Satellite Communication (SATCOM) ground subsystem equipment and software in support of Joint Chiefs of Staff (JCS) validated Mission Command Network and Systems requirements for the worldwide Defense Enterprise Wideband SATCOM System (DEWSS). DEWSS is composed of the Super High Frequency (SHF) Wideband Global SATCOM (WGS) programs, which supports legacy, interim and emerging communication space architectures and future force requirements. Expansion of the WGS constellation and WGS capabilities are vital to support the Army's emerging power projection and rapid deployment mission. WGS provides high capacity tactical end-to-end connectivity and interoperability with strategic networks and national decision-makers, satisfying JCS network operations in support of the President, JCS, combatant commanders, military departments, Department of State and other government departments and agencies.

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

	FY 2023	FY 2024	FY 2025
Title: SATCOM Terminal Digital Intermediate Frequency Implementation Analysis	3.684	4.151	4.794
<p>Description: SATCOM Terminal Digital Intermediate Frequency (IF) implementation analysis and experimentations aimed at improving bandwidth efficiency of gateway terminals while providing an additional layer of resiliency through terminal redundancy. These analyses and experimentations include various evaluations for digital terminal components to replace current, less efficient, analog components. These analyses also include assessment of terrestrial connectivity among SATCOM terminals to enable Continuity of Operations (COOP) and failover scenarios required for resiliency.</p> <p>FY 2024 Plans: Continue to integrate Digital IF Solutions for the Interconnect Facility (ICF) Replacement Wideband Signal Processors (WSP), COTS LAN Switches and Routers and High Speed Fiber Optics into the Prototyping, Integration, Test, Training (PITT) facility at Tobyhanna Army Depot (TYAD). Perform technical assessments and Wideband Global SATCOM (WGS) delta certification tests.</p> <p>FY 2025 Plans: Continue to integrate digital IF solutions, including COTS LAN Switches and Routers, High Speed Fiber Optics, and additional Wideband Signal Processors (WSP) solutions into the Prototyping, Integration, Test, and Training facility at Tobyhanna Army Depot (TYAD). Perform technical assessments and Wideband Global SATCOM (WGS) certification and Risk Management Framework (RMF) accreditation tests.</p> <p>FY 2024 to FY 2025 Increase/Decrease Statement:</p>			

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Exhibit R-2A, RDT&E Project Justification: PB 2025 Army **Date:** March 2024

Appropriation/Budget Activity 2040 / 7	R-1 Program Element (Number/Name) PE 0303142A / SATCOM Ground Environment (SPACE)	Project (Number/Name) 253 / Dscs-Dcs (Phase II)
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2023	FY 2024	FY 2025
Increase due to continued integration of Digital IF Solutions.			
Title: Electromagnetic Interference Mitigation Analysis Description: Completed assessments of emerging radio frequency interference mitigation/cancellation technologies for effectiveness in improving reliability/resiliency of strategic and tactical satellite communications. Mature technology to software/firmware that will improve protected SATCOM modem/terminal performance in electro-magnetic interference contested environment. Technology will also improve terminal performance against adversary and friendly satellite link jamming resources.	0.400	-	-
Title: Enterprise Digital IF Multi-carrier (EDIM) Modem Description: Completed integration of commercial technologies onto a single modem platform to replace the existing end of life legacy modem currently fielded at all DoD Gateways. New technologies include multi-carrier capability to meet forecasted MILSATCOM capacity demands in support of JADC2, Digital IF to enable resiliency and path diversity and Interference Cancellation to improve reliability of SATCOM communication links. Additionally, complete development of testing units in order to begin First Article Test and Wideband Global SATCOM (WGS) system certification. FY 2024 Plans: Continue Non-Recurring Engineering (NRE) efforts to integrate, test and certify the EDIM Modem Platform. FY 2024 to FY 2025 Increase/Decrease Statement: Decrease reflects completion of Non-Recurring Engineering (NRE) efforts in FY 2024.	0.439	7.751	-
Accomplishments/Planned Programs Subtotals	4.523	11.902	4.794

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

Line Item	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
• BB8500: Defense Enterprise Wideband Satcom Systems	107.228	101.181	87.058	-	87.058	90.512	90.556	90.636	91.541	Continuing	Continuing

Remarks

D. Acquisition Strategy
This finances technical maturation, systems engineering, modem risk mitigation, and risk management framework support. Funding provides for SATCOM terminal upgrades, enhancement of baseband throughput capabilities, technology insertion and upgrades which improves SATCOM gateway resiliency while allowing for full utilization of Wideband Global SATCOM (WGS) capabilities. Both the Wideband SATCOM Operational Management System (WSOMS) and the Enterprise Wideband SATCOM Terminal System (EWSTS) Capability Production Documents (CPDs) contain Netcentric-Ready Key Performance Parameters (NR-KPPs) as required by

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Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 7	R-1 Program Element (Number/Name) PE 0303142A / SATCOM Ground Environment (SPACE)	Project (Number/Name) 253 / Dscs-Dcs (Phase II)

CJCSI 6212.01C. Netcentric efforts are required to facilitate the migration from the current trunk-based communications systems to Internet Protocol (IP) based systems and to engineer, test and integrate IP based capabilities into WSOMS and EWSTS systems. Studies, risk mitigation, system integration and advanced demonstrations for Netcentric baseband and policy-based control will accommodate technology insertion, data sharing, remote operations, architecture efforts and use of commercial technology, thus ensuring the life of the Defense Enterprise Wideband Satellite System (DEWSS) terminal family beyond 2035 and reducing lifecycle costs and enterprise requirements on the WGS satellites in the future. Contracting approach for new technology is through the use of Broad Agency Announcements (BAA) and Other Transaction Authority (OTA) contracts. SATCOM Terminal Digital Intermediate Frequency (IF) demonstrations with multi-vendor equipment will be conducted using live satellite links between Tobyhanna Army Depot (TYAD) and Joint SATCOM Engineering Center (JSEC) at Aberdeen Proving Grounds. All components demonstrated will be at Technology Readiness Level (TRL) 6. Electromagnetic Interference Algorithms at TRL 6 will be hosted on a stand-alone hardware platform and tested at JSEC using live satellite links. All verified algorithms and performance specifications will transition to the Enterprise Digital IF Multi-Carrier (EDIM) modem program during 4Q FY 2023.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army												Date: March 2024			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)							
2040 / 7				PE 0303142A / SATCOM Ground Environment (SPACE)				253 / Dscs-Dcs (Phase II)							
Product Development (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
SATCOM Terminal Digital IF Implementation Analysis	MIPR	Aberdeen Proving Ground : MD	3.010	2.732	Jan 2023	3.336	Jan 2024	4.374	Jan 2025	-		4.374	Continuing	Continuing	Continuing
Electromagnetic Interference Mitigation Analysis	MIPR	Aberdeen Proving Ground : MD	2.910	0.400	Jan 2023	-		-		-		-	Continuing	Continuing	Continuing
Enterprise Digital IF Multi-carrier (EDIM) Modem System Engineering Analysis	MIPR	ACC - Rock Island : IL	-	0.439	Jan 2023	7.751	Jan 2024	-		-		-	Continuing	Continuing	Continuing
Subtotal			5.920	3.571		11.087		4.374		-		4.374	Continuing	Continuing	N/A
Support (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
In-house Support	Allot	PdM WESS : Ft. Belvoir, VA	0.105	0.060		0.015		0.020		-		0.020	Continuing	Continuing	Continuing
Contractor Support	MIPR	ACC : Rock Island, IL	1.151	0.892	Jan 2023	0.800	Feb 2024	0.400	Feb 2025	-		0.400	Continuing	Continuing	Continuing
Subtotal			1.256	0.952		0.815		0.420		-		0.420	Continuing	Continuing	N/A
Project Cost Totals			7.176	4.523		11.902		4.794		-		4.794	Continuing	Continuing	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 7	R-1 Program Element (Number/Name) PE 0303142A / SATCOM Ground Environm ent (SPACE)	Project (Number/Name) 253 / Dscs-Dcs (Phase II)	

Event Name	FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029							
	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				
SATCOM Terminal Digital Intermediate Frequency (IF) Impl...	[Redacted]																															
Electromagnetic Interference Mitigation Analysis	[Redacted]				[Redacted]																											
Enterprise Digital IF Multi-carrier (EDIM) Modem System ...	[Redacted]												[Redacted]																			

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Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 7	R-1 Program Element (Number/Name) PE 0303142A / SATCOM Ground Environment (SPACE)	Project (Number/Name) 253 / Dscs-Dcs (Phase II)

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
SATCOM Terminal Digital Intermediate Frequency (IF) Implementation Analysis	1	2021	4	2029
Electromagnetic Interference Mitigation Analysis	1	2021	4	2023
Enterprise Digital IF Multi-carrier (EDIM) Modem System Engineering Analysis	1	2023	4	2025

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Exhibit R-2A, RDT&E Project Justification: PB 2025 Army										Date: March 2024		
Appropriation/Budget Activity 2040 / 7					R-1 Program Element (Number/Name) PE 0303142A / SATCOM Ground Environment (SPACE)				Project (Number/Name) 456 / MILSATCOM System Engineering			
COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
456: MILSATCOM System Engineering	-	2.813	1.776	1.769	-	1.769	2.415	2.470	2.498	2.523	0.000	16.264
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Project 456, MILSATCOM System Engineering is directly aligned to the Army Network Modernization Strategy.

FY 2025 Base funding in the amount of \$1.769 million - MILSATCOM System Engineering assures the tactical Army satellite communications (SATCOM) and SATCOM On-the-Move (SOTM) systems are engineered to legally and efficiently operate worldwide. MILSATCOM System Engineering shapes Joint SATCOM systems' design efforts, standards development and planning processes. MILSATCOM System Engineering represents the Army's tactical interests within Department of Defense (DoD), Commercial, and International forums to ensure affordable and scalable future SATCOM capabilities are available for maneuver forces. These efforts are synchronized with the Space Force and DoD's plans for Protected Tactical Waveforms (PTW) on Wideband Global SATCOM (WGS), the Protected Tactical Satellite (PTS), and commercial SATCOM systems. These efforts also ensure that the Army continues to evaluate evolving technologies for the planning and designing of SATCOM solutions that reduce technical and programmatic impacts. MILSATCOM System Engineering expertise supports obtaining SATCOM modem and terminal certifications for Tactical Network systems to operate on the network, provides SATCOM spectrum management and lab support, and supports testing and integration of Assured Position Navigation and Timing (APNT) capabilities.

MILSATCOM System Engineering also provides the technical and programmatic expertise to facilitate the Unified Network Capabilities and Integration (UNCI) integration mission of transport convergence and integration of emerging technologies within the Tactical Network portfolio. MILSATCOM System Engineering provides the programmatic and technical expertise to coordinate the UNCI mission to align and integrate elements of the Tactical Network portfolio in support of units such as the Expeditionary Signal Battalion (ESB), Multi Domain Task Force (MDTF), and Security Force Assistance Brigade (SFAB). MILSATCOM System Engineering expertise supports the evaluation and integration of commercial SATCOM (COMSATCOM) capabilities with MILSATCOM and Tactical Network systems in support of pathway diversity and other modernization efforts. MILSATCOM System Engineering supports the development of the Network Centric Waveform (NCW) Technology to support SATCOM planning and management. MILSATCOM System Engineering expertise with lab testing and analysis supports future efforts to support One Network Service Support Center and the ability to evaluate Low Probability of Intercept (LPI), Low Probability of Detection (LPD), Anti-Jam (AJ), Transmission Security (TRANSEC), and resiliency capabilities of current and emerging technologies.

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

	FY 2023	FY 2024	FY 2025
Title: Protected communications system engineering and WGS communications	0.484	0.253	0.253
Description: Provides systems engineering support for technology maturation, development and planning associated with joint SATCOM development efforts, and supports testing and integration of Assured Position Navigation and Timing (APNT) capabilities.			

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Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024		
Appropriation/Budget Activity 2040 / 7	R-1 Program Element (Number/Name) PE 0303142A / SATCOM Ground Environment (SPACE)	Project (Number/Name) 456 / MILSATCOM System Engineering		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2023	FY 2024	FY 2025
<p>FY 2024 Plans: Continue to support systems engineering and analysis for Protected Communications and WGS Communications, as well as development and technology maturation of NCW-T.</p> <p>FY 2025 Plans: Continue to support systems engineering and analysis for Protected Communications and WGS Communications, as well as development and technology maturation of NCW-T.</p>				
<p>Title: Systems architecture and analysis support</p> <p>Description: Provides systems engineering support relating to the architecture and analysis of NCW-T and collaborative SATCOM efforts. These efforts, such as research, analysis, technical engineering and integration services for bandwidth studies and future technology insertions, impact Army use of military and commercial satellite constellations and integration of enabling technologies. Provides SATCOM spectrum management and supports Joint/DoD standards development and strategic planning.</p> <p>Provides additional programmatic support across the tactical network.</p> <p>FY 2024 Plans: Continue to support in house engineering support, contractor support, and system architecture and analysis.</p> <p>FY 2025 Plans: Continue to support in house engineering support, contractor support, and system architecture and analysis.</p>		1.511	0.510	0.510
<p>Title: Testing and certification of critical SATCOM and SATCOM On-the-Move communication and network technologies</p> <p>Description: Provides support for testing and certification of the critical SATCOM and SATCOM On-the-Move (SOTM) communication and network technologies.</p> <p>FY 2024 Plans: Continue to support continued testing and certification of critical SATCOM and SOTM communication and network technologies.</p> <p>FY 2025 Plans: Continue to support continued testing and certification of critical SATCOM and SOTM communication and network technologies.</p> <p>FY 2024 to FY 2025 Increase/Decrease Statement: FY25 decrease driven by minor reduction in funding for effort.</p>		0.578	0.761	0.754
<p>Title: Unified Network Capabilities and Integration Program Management and Support</p>		0.240	0.252	0.252

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Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2023	FY 2024	FY 2025
<p>Description: Provides programmatic and technical expertise in systems engineering test, evaluation, and integration in support of aligning and integrating elements of the Tactical Network Portfolio.</p> <p>FY 2024 Plans: Continue to support systems engineering and integration efforts in support of NCW Technology development and test as well as testing and certification of critical SATCOM and SOTM Technology.</p> <p>FY 2025 Plans: Continue to support systems engineering and integration efforts in support of NCW Technology development and test as well as testing and certification of critical SATCOM and SOTM Technology.</p>			
Accomplishments/Planned Programs Subtotals	2.813	1.776	1.769

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

N/A

Remarks

D. Acquisition Strategy

MILSATCOM System Engineering provides advanced systems engineering, research, development, test, and evaluation (RDTE) and integration of new and emerging technologies to optimize terminal performance and communications control. Once the technologies are mature and deemed feasible, funding and management responsibility for implementation and integration of the technology will transition to Tactical Network and related Programs of Record.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army **Date:** March 2024

Appropriation/Budget Activity 2040 / 7	R-1 Program Element (Number/Name) PE 0303142A / SATCOM Ground Environment (SPACE)	Project (Number/Name) 456 / MILSATCOM System Engineering
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Product Development (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Protected Communications and WGS Communications	C/FPIF	Various : APG, MD	1.504	0.484	Apr 2023	0.253	Apr 2024	0.252	Apr 2025	-		0.252	0.000	2.493	-
Subtotal			1.504	0.484		0.253		0.252		-		0.252	0.000	2.493	N/A

Support (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
System Architecture and Analysis Support	MIPR	C5ISR Center : APG, MD	1.023	1.511	Dec 2022	0.510	Dec 2023	0.508	Dec 2024	-		0.508	0.000	3.552	-
Unified Network Capabilities and Integration Program Management and Support	C/T&M	Various : APG	-	0.240		0.252	Dec 2023	0.251	Dec 2024	-		0.251	0.000	0.743	-
Subtotal			1.023	1.751		0.762		0.759		-		0.759	0.000	4.295	N/A

Test and Evaluation (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Test and Certification	MIPR	C5ISR Center : APG, MD	0.466	0.578	Dec 2022	0.761	Dec 2023	0.758	Dec 2024	-		0.758	0.000	2.563	-
Subtotal			0.466	0.578		0.761		0.758		-		0.758	0.000	2.563	N/A

			Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			2.993	2.813	1.776	1.769	-	1.769	0.000	9.351	N/A

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 7	R-1 Program Element (Number/Name) PE 0303142A / SATCOM Ground Environment (SPACE)	Project (Number/Name) 456 / MILSATCOM System Engineering	

Event Name	FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
	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
Protected Communications and WGS Communications																												
System Architecture and Analysis Support																												
Test and Certification																												
Unified Network Capabilities and Integration Program Man...																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 7	R-1 Program Element (Number/Name) PE 0303142A / SATCOM Ground Environment (SPACE)	Project (Number/Name) 456 / MILSATCOM System Engineering

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Protected Communications and WGS Communications	1	2023	4	2029
System Architecture and Analysis Support	1	2023	4	2029
Test and Certification	1	2023	4	2029
Unified Network Capabilities and Integration Program Management Support	1	2023	4	2029

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Exhibit R-2A, RDT&E Project Justification: PB 2025 Army										Date: March 2024		
Appropriation/Budget Activity 2040 / 7					R-1 Program Element (Number/Name) PE 0303142A / SATCOM Ground Environment (SPACE)				Project (Number/Name) CO7 / Protected Tactical Satellite Communications			
COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
CO7: Protected Tactical Satellite Communications	-	7.215	13.160	20.080	-	20.080	28.951	5.069	5.126	5.177	0.000	84.778
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Project CO7, Protected Anti-Jam Tactical SATCOM is directly aligned to the Army Network Modernization Priority and supports the Army of 2030 and 2040 initiatives.

Protected Anti-Jam Tactical SATCOM (Protected SATCOM) provides the ability for the Army tactical terminals to be resilient in a contested environment and protect against catastrophic loss of situational awareness and command and control during critical battle movement with Anti-Jam capabilities. The Resilient Anti-Jam Modem (RAM) (previously referred to as Block II Small Form Factor (SFF)) will provide on the move and early entry satellite terminals with adaptive, anti-jam communications for the highest levels of protected communications in multi domain operations. Air Force/Army Anti-Jam Modem (A3M) offers tactical Army protection against interference that is either intentional or unintentional. A3M is a Joint Effort between the Army and US Space Force (USSF). RAM is an Army only requirement as USSF doesn't have a requirement for RAM.

Protected SATCOM supports initial development, testing and certification of production representative Protected Tactical Waveform (PTW) modems, incorporating Army requirements, to support continued spiral development of critical protected communications capabilities to address resiliency in jamming environments. The Protected/Resilient SATCOM Abbreviated - Capabilities Development Document (A-CDD) was validated and approved in June 2021.

FY 2025 funding in the amount of \$20.080 million will support development of Army RAM, contractor and government system engineering and program management (SEPM), test and certification, logistics support and data development and other associated activities as required.

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

	FY 2023	FY 2024	FY 2025
Title: PTW Block I Modem Development	1.300	-	-
Description: PTW Development of Air Force/Army Anti-Jam Modem (A3M) (Block I) supports development and engineering of Army requirements for the PTW modems that will be utilized for protected tactical communications.			
Title: Government System Engineering and Program Management Support (SEPM)	0.935	1.004	1.351
Description: Funding supports Government System Engineering and Program Management (SEPM) which includes programmatic personnel, and other related administrative costs. Government Program Management consists of matrix personnel labor and travel requirements. This includes all required program oversight, system engineering and technical control, risk management, and fielding support.			

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Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024		
Appropriation/Budget Activity 2040 / 7	R-1 Program Element (Number/Name) PE 0303142A / SATCOM Ground Environment (SPACE)	Project (Number/Name) CO7 / Protected Tactical Satellite Communications		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2023	FY 2024	FY 2025
<p>FY 2024 Plans: Funding supports programmatic activities related to completing A3M development and initiating RAM development. This includes Army network systems architecture and analysis.</p> <p>FY 2025 Plans: Funding supports programmatic activities related to protected modem development. This includes Army network systems architecture and analysis.</p> <p>FY 2024 to FY 2025 Increase/Decrease Statement: FY2024 to FY2025 Government SEPM increased due to required manpower oversight to complete Preliminary Design Review (PDR) and preparing for Critical Design Review (CDR) objectives for RAM.</p>				
<p>Title: Contractor System Engineering and Program Management Support (SEPM)</p> <p>Description: Funding supports Contractor System Engineering and Program Management (SEPM) which includes programmatic personnel (program analyst, budget analyst, engineer), and other related administrative costs.</p> <p>FY 2024 Plans: Funding supports programmatic activities related to completing A3M Block I modem development and initiating the RAM development. This includes Army network systems architecture and analysis.</p> <p>FY 2025 Plans: Funding supports programmatic activities related to protected modem development. This includes Army network systems architecture and analysis.</p> <p>FY 2024 to FY 2025 Increase/Decrease Statement: FY2024 to FY2025 Contractor SEPM increased due to required manpower oversight to complete PDR and preparing for CDR objectives for RAM.</p>		2.785	1.457	1.649
<p>Title: Test and Certification</p> <p>Description: Funding for Government support for testing and certification.</p>		2.195	-	-
<p>Title: Resilient Anti-Jam Modem Development (RAM)</p> <p>Description: Funding supports development of a small form factor Resilient Anti-Jam Modem (RAM). This activity supports engineering of Army requirements for PTW modems in protected tactical communications. This will be an Army led activity.</p> <p>FY 2024 Plans:</p>		-	10.699	17.080

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Exhibit R-2A, RDT&E Project Justification: PB 2025 Army	Date: March 2024
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Appropriation/Budget Activity 2040 / 7	R-1 Program Element (Number/Name) PE 0303142A / SATCOM Ground Environment (SPACE)	Project (Number/Name) CO7 / Protected Tactical Satellite Communications
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2023	FY 2024	FY 2025
The Army will begin development of a small form factor Resilient Anti-Jam Modem (RAM).			
FY 2025 Plans: The Army will continue development of a small form factor Resilient Anti-Jam Modem (RAM).			
FY 2024 to FY 2025 Increase/Decrease Statement: FY24 to FY25 funding increases for RAM Development due to RAM development focus objectives to complete PDR and preparing for CDR.			
Accomplishments/Planned Programs Subtotals	7.215	13.160	20.080

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

<u>Line Item</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u> <u>Base</u>	<u>FY 2025</u> <u>OCO</u>	<u>FY 2025</u> <u>Total</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>FY 2029</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• B34002: Protected Anti Jam Tactical SATCOM	5.853	19.122	16.028	-	16.028	10.316	34.216	34.248	34.620	0.000	154.403

Remarks
Production to support procurement and fielding of Protected Anti-Jam Tactical SATCOM capability. This funding line procures 63 A3M modems in FY23 and procures 297 A3M modems in FY24. In FY25, Army will procure an additional 232 A3M modems.

D. Acquisition Strategy
The Protected Anti-Jam Tactical SATCOM (Protected SATCOM) Acquisition Strategy for Resilient Anti-Jam Modem (RAM) development will leverage successfully tested technology from the A3M (Block I) effort and is an Army only requirement. RAM is designed to provide resilient and anti-jam capability for Army SATCOM terminals and will coordinate modem development with Army tactical terminal program offices. The program will leverage an existing IDIQ contract established by USSF for the development of RAM. Protected SATCOM capability is a Joint requirement. The large form factor A3M (previously known as Block I) was a Joint development effort between the United States Space Force (USSF) and the Army. The small form factor RAM (previously known as Block II) is an Army only requirement and is being developed by the Army.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army												Date: March 2024			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)							
2040 / 7				PE 0303142A / SATCOM Ground Environm ent (SPACE)				CO7 I Protected Tactical Satellite Communications							
Management Services (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Government System Engineering and Program Management	MIPR	Various : APG	-	0.935	Dec 2022	1.004	Dec 2023	1.351	Dec 2024	-		1.351	0.000	3.290	-
Contractor Systems Engineering and Program Support	C/T&M	Various : APG	-	2.785	Dec 2022	1.457	Dec 2023	1.649	Dec 2024	-		1.649	0.000	5.891	-
Subtotal			-	3.720		2.461		3.000		-		3.000	0.000	9.181	N/A
Product Development (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
PTW Development of A3M	C/FPIF	L3 Harris : Salt Lake City, Utah, Camden, NJ	-	1.300	Oct 2022	-		-		-		-	0.000	1.300	-
Resilient Anti-Jam Modem Dev	C/FPIF	L3 Harris : Salt Lake City, Utah, Camden, NJ	-	-		10.699	Dec 2023	17.080	Dec 2024	-		17.080	0.000	27.779	-
Subtotal			-	1.300		10.699		17.080		-		17.080	0.000	29.079	N/A
Test and Evaluation (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Test and Certification	MIPR	JSEC : APG, MD	-	2.195	Nov 2022	-		-		-		-	0.000	2.195	-
Subtotal			-	2.195		-		-		-		-	0.000	2.195	N/A
Project Cost Totals			-	7.215		13.160		20.080		-		20.080	0.000	40.455	N/A

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Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 7	R-1 Program Element (Number/Name) PE 0303142A / SATCOM Ground Environment (SPACE)	Project (Number/Name) CO7 / Protected Tactical Satellite Communications

Event Name	FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
	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
PTW A3M Development	PTW Block I Modem Development																											
A3M Test and Certification	A3M Test and Certification																											
A3M Production					A3M Production																							
Resilient Anti-Jam Modem Development					Resilient Anti-Jam Modem Development																							
RAM Test and Certification													RAM Test and Certification															
RAM Production																	RAM Production											
Emerging Threat Mitigation																	Emerging Threat Mitigation											

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Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 7	R-1 Program Element (Number/Name) PE 0303142A / SATCOM Ground Environment (SPACE)	Project (Number/Name) CO7 / Protected Tactical Satellite Communications

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
PTW A3M Development	2	2020	4	2023
A3M Test and Certification	1	2023	4	2023
A3M Production	4	2023	4	2026
Resilient Anti-Jam Modem Development	3	2024	4	2026
RAM Test and Certification	2	2026	4	2026
RAM Production	1	2027	4	2031
Emerging Threat Mitigation	1	2027	4	2033