Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Army											Date: March 2023	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 4: *Advanced Component Development & Prototypes (ACD&P)*					R-1 Program Element (Number/Name) PE 0603308A / *Army Space Systems Integration*							
COST ($ in Millions)	**Prior Years**	**FY 2022**	**FY 2023**	**FY 2024 Base**	**FY 2024 OCO**	**FY 2024 Total**	**FY 2025**	**FY 2026**	**FY 2027**	**FY 2028**	**Cost To Complete**	**Total Cost**
Total Program Element	-	25.401	30.945	19.120	-	19.120	19.417	19.434	19.640	19.851	0.000	153.808
990: *Space And Missile Defense Integration*	-	25.401	30.945	19.120	-	19.120	19.417	19.434	19.640	19.851	0.000	153.808

A. Mission Description and Budget Item Justification

The Friendly Force Data Integration and Management (FFDIM) Capability Definition Package (CDP), a Joint Capabilities Integration and Development System (JCIDS) requirements document (October 2017) validated the Joint Friendly Force Tracking (JFFT) Testbed's development, testing and integration capabilities and Friendly Force Tracking (FFT) System Expert support provided by U.S. Army Space and Missile Defense Command (USASMDC) as U.S. Strategic Command's (USSTRATCOM's) Army Service Component Command (ASCC). In addition, Chairman of the Joint Chiefs of Staff Instruction 3910 (FFT Operations Guidance) directs USSTRATCOM's ASCC to execute eight specified FFT mission support responsibilities that include providing a testing and development capability to support joint, interagency and coalition partners FFT operations. USASMDC/ARSTRAT: Headquarters, Department of the Army General Order 37, dated 16 October 2006, designated USASMDC/ARSTRAT as the Army proponent for space, the Army integrator for global missile defense (GMD), and the Army Service Component Command (ASCC) of the USSTRATCOM. Army Regulation (AR) 10-87, Army Commands, Army Service Component Commands, and Direct Reporting Units, dated 4 September 2007, and AR 5-22, The Army Force Modernization Proponent System, dated 19 August 2009, designated USASMDC/ARSTRAT as the Army specified proponent for Space/High Altitude capabilities. As the Army proponent for space and high altitude, USASMDC/ARSTRAT is responsible for developing warfighting concepts, conduct warfighting experiments to validate those concepts, identify capabilities needed to implement the validated concepts, and develop Doctrine, Organizations, Training, Material, Leadership & Education, Personnel, Facilities and Policy (DOTMLPF-P) solutions.

B. Program Change Summary ($ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	25.755	17.945	19.087	-	19.087
Current President's Budget	25.401	30.945	19.120	-	19.120
Total Adjustments	-0.354	13.000	0.033	-	0.033
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	13.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.354	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	0.033	-	0.033

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2022	FY 2023
Project: 990: *Space And Missile Defense Integration*		

Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Army	Date: March 2023
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0603308A *I Army Space Systems Integration*

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2022	FY 2023
Congressional Add: *Multi Function and Multi Mission Payload*	2.000	-
Congressional Add: *Communications Resiliency Arrays of Distributed Local Elements (CRADLE)*	5.000	-
Congressional Add: *Multi-mission Synthetic Aperture Radar Payload Development*	-	5.000
Congressional Add: *Full Spectrum Protective Technologies for Cyber Mission Assurance*	-	8.000
Congressional Add Subtotals for Project: 990	7.000	13.000
Congressional Add Totals for all Projects	7.000	13.000

Change Summary Explanation

Increased funding due to revised economic assumptions.

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army			Date: March 2023
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0603308A / *Army Space Systems Integration*	Project (Number/Name) 990 / *Space And Missile Defense Integration*	

COST ($ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
990: *Space And Missile Defense Integration*	-	25.401	30.945	19.120	-	19.120	19.417	19.434	19.640	19.851	0.000	153.808
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This Program Element (PE) funds the Space and High Altitude (SHA) Force Development activities of the United States Army Space and Missile Defense Command (USASMDC) Space and Missile Defense Center of Excellence (SMDCoE). The SMDCoE is the warfighting function lead and Department of the Army force modernization proponent for integration of current and future SHA systems to enable Army forces on the battlefield. The SMDCoE workforce supports the research and doctrine development from one of the SMDCoE principle locations in Huntsville, AL; Colorado Springs, CO; and Joint Base Langley-Eustis. As the Army proponent for SHA, the SMDCoE is responsible for developing warfighting concepts, identifying and validating needed capabilities, conducting warfighting experiments, and developing Doctrine, Organizations, Training, Material, Leadership & Education, Personnel, Facilities and Policy (DOTMLPF-P) solutions for the Army to leverage the SHA domains in support of Army operations. The SMDCoE focuses on providing solutions for capability gaps of land domain forces in a multi-domain battle environment in two ways: First, by leveraging the benefits of the SHA domains to enable decentralized land force operations in support of the Army's mission command philosophy; and second by delivering synchronized capabilities from, through and into the space domain in direct support of land domain forces. Effective integration of SHA capabilities enable the application of strategic land power and execution of Multi-Domain Operations (MDO). Additionally, SHA capabilities anchor the Army's ability to penetrate and disintegrate enemy anti-access and area denial (A2AD) systems and exploit the resultant freedom of maneuver to achieve strategic objectives and force a return to competition on favorable terms. Under the direction of an experienced member of the Senior Executive Service (SES), the SMDCoE receives guidance from the USASMDC Commanding General and works in close coordination with the Army Combined Arms Center, Army Futures Command, the United States Strategic Command, the United States Space Command the Missile Defense Agency.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
Title: Space and High Altitude Capability Development Proponency	9.925	9.953	10.910
Description: Perform Army Force Modernization Responsibilities for the SHA Altitude Domains.			
FY 2023 Plans: Support Army modernization efforts by developing concepts to integrate emerging technologies to enhance Multi-Domain Operation with a particular focus on increasing Multi-Domain Task Force (MDTF), Multi-Domain Effects Battalion (MDEB) and Theater Strike Effects Groups (TSEG) capabilities.			
FY 2024 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0603308A / *Army Space Systems Integration*	**Project (Number/Name)** 990 / *Space And Missile Defense Integration*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
Continue to develop concepts, transition technologies, and provide acquisition support for SHA technologies to assure uninterrupted access to space based technologies and leverage the capabilities provided for Army force operations on the battlefield. ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Funding change reflects planned life cycle of this effort.			
Title: Joint Friendly Force Tracking (J-FFT) Testbed ***Description:*** Development and deployment of J-FFT capabilities. ***FY 2023 Plans:*** J-FFT testbed and development teams respond to the growth in FFT device use by enabling multiple device types, data types, and displays supported by the various FFT and HF TTL data architectures. The JFFT Testbed will develop and deliver new capabilities for added functionality in data visualization and management. JFFT will continue to exploit, expand and provide approved infrastructures at all classification levels that improve performance and reduce costs. ***FY 2024 Plans:*** J-FFT will continue to exploit, expand and provide mission owners with approved infrastructures at all classification levels that achieve improved performance and reduce costs. Ensure J-FFT technologies remain a key contributor to support coalition assessments and exercises that advancing US and allies FFT interoperability. ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Funding change reflects planned life cycle of this effort.	3.652	3.200	3.368
Title: Assured Positioning, Navigation and Timing / Navigation Warfare (A-PNT/NAVWAR) ***Description:*** Provide PNT/NAVWAR capability development support for the Army. ***FY 2023 Plans:*** The SMDCoE Army Capability Manager for Space and High Altitude (ACM SHA) works to mitigate capability gaps due to the growing threat to PNT, to provide situational awareness of the NAVWAR environment, and to prevent adversary use of PNT information through coordinated employment of NAVWAR capabilities. ***FY 2024 Plans:***	2.567	2.355	2.263

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0603308A / *Army Space Systems Integration*	**Project (Number/Name)** 990 / *Space And Missile Defense Integration*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
Continue to identify, develop, integrate and provide the Assured-Positioning, Navigation, and Timing (A-PNT) Cross Functional Team (CFT)with products and analysis to guide development and fielding of capabilities to achieve the PNT overmatch necessary to support future Army operations. ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Funding change reflects planned life cycle of this effort.			
Title: Space and High Altitude Models, Simulations and Operations Support ***Description:*** Supports the SMDCoE responsibility to provide Space and High Altitude modeling and simulations, and resources underlying operating expenses and support. ***FY 2023 Plans:*** Resources provide the computational and network resources, modeling and simulation, and operational analysis required to support major decisions concerning the acquisition of systems and the development of concepts of operations (CONOPS) that provide the best Joint, and Army Space and High Altitude capabilities to current and future Warfighters. ***FY 2024 Plans:*** Continue to support modeling and simulation, operational analysis and overarching operations to test and provide analytical rigor behind space and high altitude concepts and capability development ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Funding change reflects planned life cycle of this effort.	2.257	2.125	2.579
Title: SBIR/STTR Transfer ***Description:*** Funding transferred in accordance with Title 15 USC §638 ***FY 2023 Plans:*** Funding transferred in accordance with Title 15 USC §638. ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Funding transferred in accordance with Title 15 USC §638.	-	0.312	-
Accomplishments/Planned Programs Subtotals	18.401	17.945	19.120

	FY 2022	FY 2023
Congressional Add: Multi Function and Multi Mission Payload	2.000	-

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0603308A / *Army Space Systems Integration*	**Project (Number/Name)** 990 / *Space And Missile Defense Integration*

	FY 2022	FY 2023
FY 2022 Accomplishments: This project will develop a low-cost multi-function multi-mission SAR sensor payload that can be used to provide SAR imagery for multiple mission functions including weather prediction, mission planning and other tactical and strategic operations. Project will result in a design of LEO satellite to provide high resolution, multi-spectral imagery of cloud cover, including sensor, orbital configuration and down linked high resolution multi-spectral capability for multiple missions.		
Congressional Add: Communications Resiliency Arrays of Distributed Local Elements (CRADLE) ***FY 2022 Accomplishments:*** CRADLE is a new bi-static communications and radar system that uses Army developed technologies to form distributed arrays using networks of local elements in theater. The successful implementation will leverage not only new advancements in beam-forming but also the Army's investment in portable communication systems.	5.000	-
Congressional Add: Multi-mission Synthetic Aperture Radar Payload Development ***FY 2023 Plans:*** This project will develop a low-cost multi-function multi-mission SAR sensor payload that can be used to provide SAR imagery for multiple mission functions including weather prediction, mission planning and other tactical and strategic operations. Project will result in a design of LEO satellite to provide high resolution, multi-spectral imagery of cloud cover, including sensor, orbital configuration and down linked high resolution multi-spectral capability for multiple missions.	-	5.000
Congressional Add: Full Spectrum Protective Technologies for Cyber Mission Assurance ***FY 2023 Plans:*** Develop protective technologies and capabilities to safeguard critical assets across the space and missile defense capability areas from cyber exploitation to ensure a sustained competitive edge against near-peer adversaries.	-	8.000
Congressional Adds Subtotals	7.000	13.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

SMDCoE space and high altitude capability development efforts have a natural association and linkage with Army Strategic Missile Defense (SMD) capability development also performed within the SMDCoE. Emerging space and high altitude technologies and concepts often influence SMD identification, tracking and response.

D. Acquisition Strategy

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army			Date: March 2023
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0603308A / *Army Space Systems Integration*	Project (Number/Name) 990 / *Space And Missile Defense Integration*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Personnel and Operations support	TBD	SMDC/ARSTRAT : Huntsville, AL and Colorado Springs,	17.537	18.401		14.433		15.752		-		15.752	Continuing	Continuing	-
SBIR/STTR Transfer	TBD	Various : Various	-	-		0.312		-		-		-	0.000	0.312	-
		Subtotal	17.537	18.401		14.745		15.752		-		15.752	Continuing	Continuing	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Communications Resiliency Arrays of Distributed Local Elements (CRADLE) (CA)	TBD	SMDC : Various	-	5.000		-		-		-		-	0.000	5.000	-
Multi-Function and Multi-Mission Payload	TBD	Various : Various	-	2.000		-		-		-		-	0.000	2.000	-
Multi-mission Synthetic Aperture Radar Payload Development	TBD	Various : Various	-	-		5.000		-		-		-	0.000	5.000	-
Full Spectrum Protective Technologies for Cyber Mission Assurance	TBD	Various : Various	-	-		8.000		-		-		-	0.000	8.000	-
		Subtotal	-	7.000		13.000		-		-		-	0.000	20.000	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
J-FFT Testbed and Development	TBD	SMDC/ARSTRAT : Colorado Springs, CO	3.170	-		3.200		3.368		-		3.368	0.000	9.738	-
		Subtotal	3.170	-		3.200		3.368		-		3.368	0.000	9.738	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army			Date: March 2023
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0603308A / *Army Space Systems Integration*	Project (Number/Name) 990 / *Space And Missile Defense Integration*	

	Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	20.707	25.401		30.945		19.120		-		19.120	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0603308A / *Army Space Systems Integration*	**Project (Number/Name)** 990 / *Space And Missile Defense Integration*

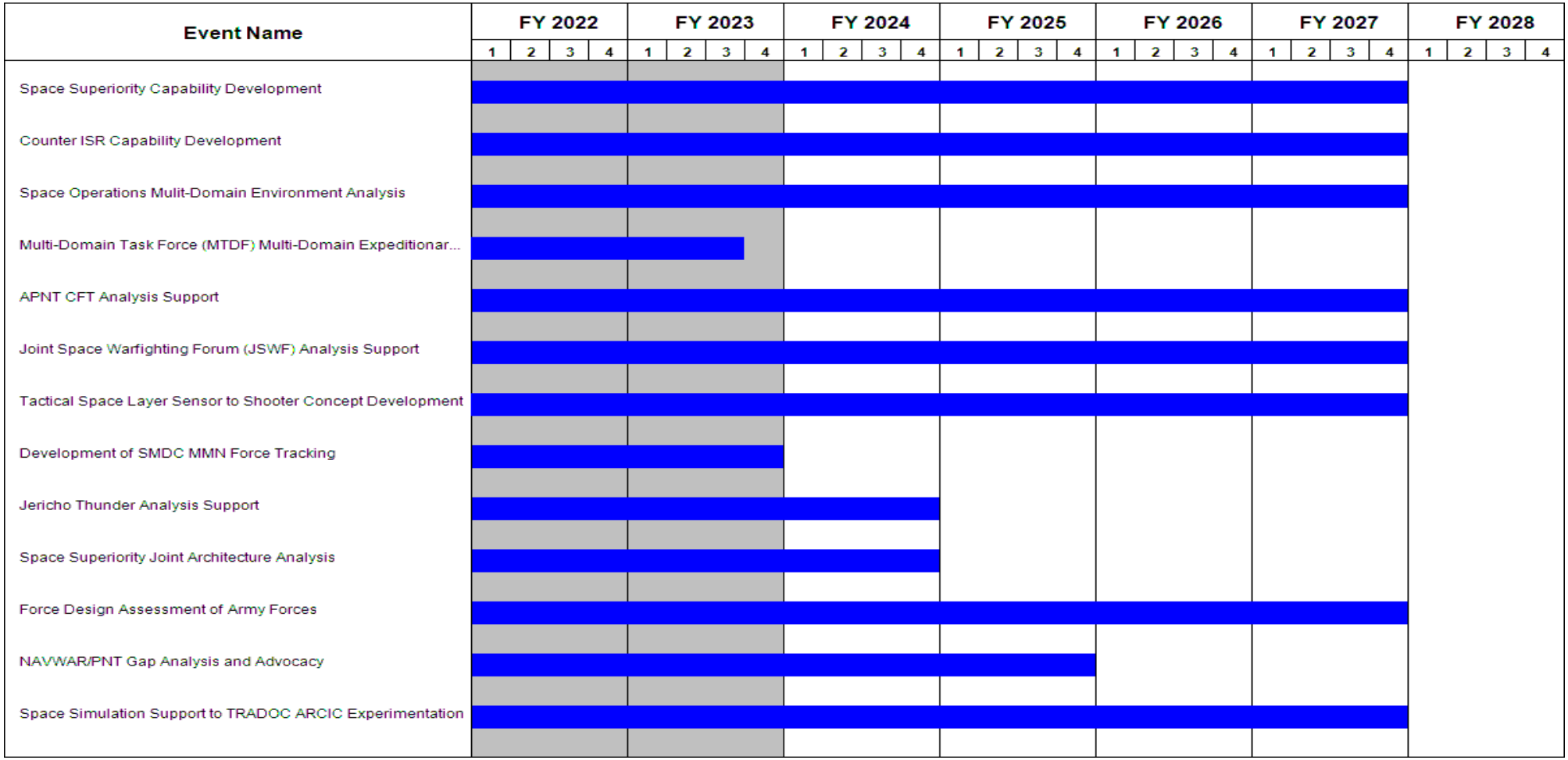

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0603308A / *Army Space Systems Integration*	**Project (Number/Name)** 990 / *Space And Missile Defense Integration*

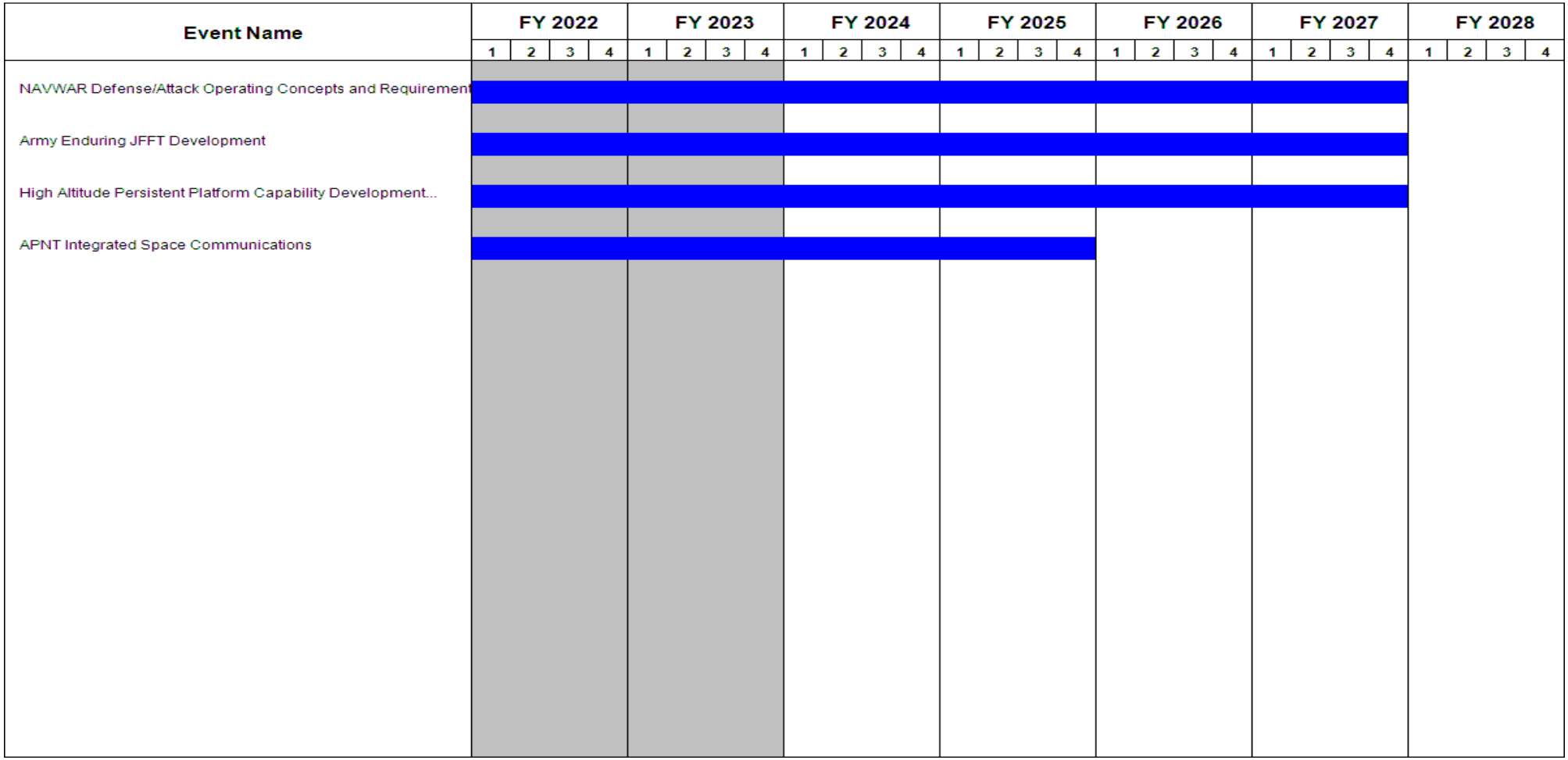

Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0603308A / *Army Space Systems Integration*	**Project (Number/Name)** 990 / *Space And Missile Defense Integration*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Space Superiority Capability Development	1	2021	4	2027
Counter ISR Capability Development	1	2021	4	2027
Space Operations Mulit-Domain Environment Analysis	1	2021	4	2027
Multi-Domain Task Force (MTDF) Multi-Domain Expeditionary Brigade (MDEB) Study	3	2021	3	2023
High Altitude Impacts on Ground Effectiveness Study	1	2021	1	2021
NAVWAR Characterization Study	1	2021	1	2021
APNT CFT Analysis Support	1	2021	4	2027
Joint Space Warfighting Forum (JSWF) Analysis Support	1	2021	4	2027
Tactical Space Layer Sensor to Shooter Concept Development	3	2021	4	2027
Low Earth Orbit	1	2021	4	2021
Development of SMDC MMN Force Tracking	1	2021	4	2023
Jericho Thunder Analysis Support	1	2021	4	2024
SMDC NanoSat Analysis (SNAP, KE)	1	2021	4	2021
Space Superiority Joint Architecture Analysis	1	2021	4	2024
Force Design Assessment of Army Forces	1	2021	4	2027
NAVWAR/PNT Gap Analysis and Advocacy	1	2021	4	2025
Space Simulation Support to TRADOC ARCIC Experimentation	1	2021	4	2027
NAVWAR Defense/Attack Operating Concepts and Requirement	1	2021	4	2027
Army Enduring JFFT Development	1	2021	4	2027
High Altitude Persistent Platform Capability Development Documentation	1	2021	4	2027
APNT Integrated Space Communications	1	2021	4	2025