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Exhibit R-2, RDT&E Budget Item Justification: PB 2022 Army **Date:** May 2021

Appropriation/Budget Activity 2040: <i>Research, Development, Test & Evaluation, Army / BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 1206308A / <i>Army Space Systems Integration</i>
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COST (\$ in Millions)	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
Total Program Element	-	100.985	-	-	-	-	-	-	-	-	-	-
FE5: <i>Space And Missile Defense Integration</i>	-	100.985	-	-	-	-	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

This Program Element (PE) funds space systems integration efforts performed by the US Army Space and Missile Defense Command/Army Forces Strategic Command (USASMDC/ARSTRAT) and the Program Executive Office for Intelligence, Electronic Warfare (PEO IEW&S) to develop and field space superiority capabilities.

Project FE5: Funds USASMDC/ARSTRAT to integrate warfighting concepts and technologies, validate concepts, and identify capabilities needed to implement the validated concepts, and develop DOTMLPF solutions to realize those space and high altitude related capabilities. Provide engineering support to the Joint Friendly Force Tracking (J-FFT) Mission Management Center (MMC) through an associated test-bed for both operational and developmental injection and integration of real-time J-FFT information into the Common Operating Picture (COP) for Combatant Commanders (CCMDs), Joint Task Forces (JTFs), and Coalition Partners. The MMC injects real-time J-FFT information into the COP for CCMDs, JTFs and Coalition partners. USSTRATCOM, in accordance with CJCSI 3910.01 (reference V.4.) is designated one of three coordinating agencies for J-FFT within DoD. CJCSI 3910.01 directs eight Force Modernization tasks to USSTRATCOM. USSTRATCOM SI 534-5 (reference V.6.) and annually published USSTRATCOM operations orders have designated USASMDC/ARSTRAT as the lead USSTRATCOM component command for Friendly Force Tracking (FFT).

Project FE6: Details of this program are reported in accordance with Title 10, United States Code, Section 119 (a)(1).

B. Program Change Summary (\$ in Millions)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Previous President's Budget	104.996	0.000	0.000	-	0.000
Current President's Budget	100.985	0.000	0.000	-	0.000
Total Adjustments	-4.011	0.000	0.000	-	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-4.011	-			

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Appropriation/Budget Activity 2040 / 4					R-1 Program Element (Number/Name) PE 1206308A / Army Space Systems Integration				Project (Number/Name) FE5 / Space And Missile Defense Integration			
COST (\$ in Millions)	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
FE5: Space And Missile Defense Integration	-	100.985	-	-	-	-	-	-	-	-	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

This project transitions to 0603308A / 990.

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/Army Forces Strategic Command (USASMDC/ARSTRAT) 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.

Project FE5 funds USASMDC/ARSTRAT efforts to develop, analyze and mature warfighting concepts, and conduct warfighting experiments for space and high altitude capabilities. USASMDC/ARSTRAT is the proponent for space/high altitude capabilities and is responsible for determining and integrating DOTMLPF-P for the Army. The program also funds development and integration of new data sources and services into the JFFT Mission Management Center (MMC), providing users FFT information system services at the highest Mission Assurance Category level (MAC 1). Software products developed and deployed by the JFFT Testbed into the MMC enable the receipt, integration and dissemination of real-time FFT information to the Common Operating Picture (COP) displays for Combatant Commanders, Joint Task Forces and coalition partners. JFFT Subject Matter Expert support to critical FFT interoperability assessments and development activities with coalition partners are supporting DOD's priority of strong alliances and partnerships. Integrated FFT data solutions developed by JFFT Testbed enable FFT data for COP display and Situational Awareness between Army forces and Unified Action Partners. The JFFT Testbed will continue to leverage FFT systems expertise and reduce Department of Defense costs by supporting numerous efforts, including the joint Personnel Recovery community response to a Joint Urgent Operational Needs Statement to resolve critical issues in isolated persons reporting and locating.

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Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 1206308A / Army Space Systems Integration	Project (Number/Name) FE5 / Space And Missile Defense Integration		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2020	FY 2021	FY 2022
Title: Architecture Development, Wargames and Demonstrations Description: Funding is provided for planning, developing, and executing architectures and combat development solutions for Army integration of space systems, space control capabilities, missile defense, and high altitude systems.		7.909	-	-
Title: Joint Friendly Force Tracking (J-FFT) Testbed Description: Funding is provided to enable the Joint Friendly Force Tracking (J-FFT) Testbed to develop and integrate Combat Commanders' FFT and Hostile Force Tagging, Tracking, and Locating (HF TTL) requirements into existing and future command and control network architectures, leveraging network enabled command and control system enhancements, and continuing to support development of FFT capabilities for deployed and coalition forces.		2.596	-	-
Title: Organizational Development as Part of the SRC40 Proponency Mission Description: Continue participation in the Force Design Update (FDU) process. Development of Operational & Organizational (O&O) Concept Papers, Organization Design Papers, Cost Benefit Analyses, Unit Reference Sheets (URS), and Manpower Requirements Criteria (MARC) determination.		1.050	-	-
Title: Position, Navigation, and Timing Navigation Warfare (PNT/NAVWAR) Description: Identifying and advocating for positioning, navigation, and timing (PNT) and Navigation Warfare (NAVWAR) requirements through CDR USSTRATCOM to the Joint Staff to establish and formalize joint NAVWAR requirements, in the Joint Capabilities Integration and Development System (JCIDS) process. Continuing to identify and advocate for PNT and NAVWAR emerging requirements through Commander, U.S. Strategic Command to the Joint Staff to establish and formalize joint NAVWAR requirements, in the JCIDS process and supporting the Army Assured Positioning Navigation and Timing (APNT) Cross Functional Team by conducting required capability analysis and developing JCIDS documents for its three Lines of Effort: Assured PNT, Navigation Warfare, and Space. USASMDC/ARSTRAT Future Warfare Center will execute these funds in FY 2020.		1.810	-	-
Title: Narrowband C-SSE enterprise level capability to monitor, detect, and assess UHF SATCOM interference Description: Developing and deploying Narrowband Consolidated SATCOM System Expert (C-SSE) SATCOM Tools that will allow the U.S. Army to fight SATCOM. The USASMDC/ARSTRAT NB C-SSE Division executes the SATCOM electromagnetic interference (EMI) mission in support of CCMDs, Services, Agencies, and Warfighters. Two critical elements of that support are to provide NB EMI management and Space Situation Awareness. Once fully developed and operational, coupled with a sustainment plan, this will improve the joint commander's ability to "fight SATCOM" in a contested environment.		11.157	-	-
Title: Low Earth Orbit Strategy		76.463	-	-

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Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 1206308A / Army Space Systems Integration	Project (Number/Name) FE5 / Space And Missile Defense Integration		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2020	FY 2021	FY 2022
Description: A dedicated constellation of small satellites to provide resilient, persistent LEO capability to address shortfalls in current reconnaissance, surveillance, and target acquisition (RSTA) and PNT systems. Provides the ability to identify and locate targets of interest in denied and contested environments actionable to the tactical warfighter. This includes the Battle Management, Command and Communication (BMC2) capability required to task payloads and fuse data, as well as algorithms to enhance, analyze, and disseminate this data to the tactical warfighter via existing Army systems and networks in support of Sensor-to-Shooter demonstrations directly supporting Long Range Precision Fires (LRPF).				
Accomplishments/Planned Programs Subtotals		100.985	-	-
C. Other Program Funding Summary (\$ in Millions)				
N/A				
Remarks				
N/A				
D. Acquisition Strategy				
N/A				

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Army **Date:** May 2021

Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 1206308A / Army Space Systems Integration	Project (Number/Name) FE5 / Space And Missile Defense Integration
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Management Services (\$ in Millions)				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 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			
Government Personnel and operations support.	TBD	SMDC/ARSTRAT Huntsville, AL and Colorado Springs : SMDC/ARSTRAT Huntsville, AL and Colorado Springs	16.826	6.666		-		-		-		-	0.000	23.492	-
FY 2020 SBIR/STTR Transfer	TBD	Various : Various	-	-		-		0.000		-		0.000	-	-	-
Subtotal			16.826	6.666		-		0.000		-		0.000	0.000	23.492	N/A

Remarks
N/A

Product Development (\$ in Millions)				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 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			
Contracts for Experiments & technology enhancements of prototypes/tools and analysis	Various	SMDC/ARSTRAT Huntsville, AL and Colorado Springs : SMDC/ARSTRAT Huntsville, AL and Colorado Springs	15.655	17.018		-		-		-		-	0.000	32.673	-
Low Earth Orbit	C/Various	Various : Huntsville AL, Wilmngton, MA, Boulder CO, VA	7.500	77.301		-		-		-		-	0.000	84.801	-
Subtotal			23.155	94.319		-		-		-		-	0.000	117.474	N/A

Project Cost Totals	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract
	39.981	100.985	0.000	0.000	-	0.000	0.000	140.966	N/A

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2022 Army			Date: May 2021
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 1206308A / Army Space Systems Integration	Project (Number/Name) FE5 / Space And Missile Defense Integration	

Event Name	FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				FY 2026			
	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
Development of SMDC MMC Force Tracking																												
Jericho Thunder Analysis Support																												
SMDC NanoSat Analysis (SNAP, KE)																												
Space Superiority Joint Architecture Analysis																												
Force Design Assessment of Army Forces																												
NAVWAR/PNT Gap Analysis and Advocacy																												
Implications of the Emerging "Third" Offset Strategy for SMDC S																												
Space Simulation Support to TRADOC ARCIC Experimentation																												
Common Ground Station Operating Concept and Requirement D																												
NAVWAR Defense/Attack Operating Concepts and Requirement																												
Army Enduring JFFT Development																												
High Altitude Persistent Platform Capability Development Docu																												
NAVWAR/PNT in Denied Environment																												

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Exhibit R-4, RDT&E Schedule Profile: PB 2022 Army		Date: May 2021
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 1206308A / Army Space Systems Integration	Project (Number/Name) FE5 / Space And Missile Defense Integration

Event Name	FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				FY 2026			
	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
Space Superiority Capability Development																												
Counter ISR Capability Development																												
Space Operations Multi-Domain Environment Analysis																												
NAVWAR Attack Study																												
Pseudolite Performance Analysis																												
APNT CFT Analysis Support																												
Joint Space Warfighting Forum (JSWF) Analysis Support																												
Support of the APN/CFT																												
Own Earth Orbit																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2022 Army		Date: May 2021
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 1206308A / Army Space Systems Integration	Project (Number/Name) FE5 / Space And Missile Defense Integration

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Development of SMDC MMC Force Tracking	1	2018	4	2020
Jericho Thunder Analysis Support	1	2019	4	2020
SMDC NanoSat Analysis (SNAP, KE)	1	2019	4	2020
Space Superiority Joint Architecture Analysis	1	2018	4	2020
Force Design Assessment of Army Forces	1	2019	4	2020
NAVWAR/PNT Gap Analysis and Advocacy	1	2018	2	2020
Implications of the Emerging "Third" Offset Strategy for SMDC Space	1	2019	4	2020
Space Simulation Support to TRADOC ARCIC Experimentation	1	2018	4	2020
Common Ground Station Operating Concept and Requirement Document	1	2019	3	2020
NAVWAR Defense/Attack Operating Concepts and Requirements Documentation	1	2018	4	2020
Army Enduring JFFT Development	1	2018	4	2020
High Altitude Persistent Platform Capability Development Document	1	2018	4	2020
NAVWAR/PNT in Denied Environment	1	2019	2	2020
Space Superiority Capability Development	1	2018	4	2020
Counter ISR Capability Development	3	2017	4	2020
Space Operations Multi-Domain Environment Analysis	4	2017	4	2020
ICEWS Study	4	2018	4	2019
High Altitude Impacts on Ground Effectiveness Study	4	2018	4	2019
NAVWAR Characterization Study	4	2018	4	2019
NAVWAR Attack Study	4	2019	4	2020
Psuedolite Performance Analysis	2	2019	1	2020
APNT CFT Analysis Support	3	2018	4	2020

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Exhibit R-4A, RDT&E Schedule Details: PB 2022 Army **Date:** May 2021

Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 1206308A / Army Space Systems Integration	Project (Number/Name) FE5 / Space And Missile Defense Integration
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Events	Start		End	
	Quarter	Year	Quarter	Year
Joint Space Warfighting Forum (JSWF) Analysis Support	1	2018	4	2020
Support of the APN/CFT	1	2018	4	2020
Ow Earth Orbit	1	2020	4	2020