Exhibit R-2, RDT&E Budget Item Justification: PB 2022 Army												Date: May 2021
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*							
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	-	-	25.584	18.755	-	18.755	-	-	-	-	-	-
990: *Space And Missile Defense Integration*	-	-	25.584	18.755	-	18.755	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

All Project FE5 funding is being transfer to Project 990 funding in FY2021
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.

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.

Exhibit R-2, RDT&E Budget Item Justification: PB 2022 Army					Date: May 2021
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*			
B. Program Change Summary ($ in Millions)	**FY 2020**	**FY 2021**	**FY 2022 Base**	**FY 2022 OCO**	**FY 2022 Total**
Previous President's Budget	0.000	26.230	18.775	-	18.775
Current President's Budget	0.000	25.584	18.755	-	18.755
Total Adjustments	0.000	-0.646	-0.020	-	-0.020
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-0.646			
• Adjustments to Budget Years	-	-	-0.020	-	-0.020

Change Summary Explanation

Additional funding for PNT NAVWAR effort

Exhibit R-2A, RDT&E Project Justification: PB 2022 Army			Date: May 2021
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 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
990: *Space And Missile Defense Integration*	-	-	25.584	18.755	-	18.755	-	-	-	-	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

USASMDC: Headquarters, Department of the Army General Order 37, dated 16 October 2006, designated USASMDC 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 as the Army specified proponent for Space/High Altitude capabilities. As the Army proponent for space and high altitude, USASMDC 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.

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: Headquarters, Department of the Army General Order 37, dated 16 October 2006, designated USASMDC 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 as the Army specified proponent for Space/High Altitude capabilities. As the Army proponent for space and high altitude, USASMDC 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. Accomplishments/Planned Programs ($ in Millions)	FY 2020	FY 2021	FY 2022
Title: Architecture Development, War games and Demonstrations	-	11.651	10.533
Description: All Project FE5 funding is being transfer to Project 990 funding in FY 2021. 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.			

Exhibit R-2A, RDT&E Project Justification: PB 2022 Army		Date: May 2021
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 2020	FY 2021	FY 2022
FY 2021 Plans: USASMDC Space and Missile Defense Center of Excellence (SMDCOE) will continue the full spectrum of JCIDS concept to capability development efforts to enhance the resiliency and effectiveness of critical space-based and space enabled assets and JCIDS capability development activities for space superiority, theater missile warning, high altitude, and emerging concepts/ technology for the full range of Navigation Warfare, tactical space layer, hypersonics, counter hypersonics, and directed energy. SMDCoE will participate in robust campaign of learning with the Army, Army Futures Command, Joint and sister service wargaming, experimentation, live prototyping, studies, assessments, and exercises to learn, validate, develop, and integrate the concepts and technology described above. SMDCOE will provide support to PEO IEWS and PEO M&S to acquire and field space superiority and enhanced missile warning capabilities. A JTAGS Block III CDD will be written to document the requirements to meet advanced missile threats and to counter hypersonics. A high altitude CDD will be written to capture the requirements for a high altitude, multi-mission, persistent platform to provide resiliency for space based capabilities. A Theater Space Warfare Operational and Organizational Concept and Army Space concept will capture the observations and insights from the campaign of learning and drive required capability development consistent with the Army's Operating Concept of Multi-Domain Operations (MDO) and CSA and Army Modernization Enterprise guidance for MDO capable forces by 2028 and MDO ready forces by 2035. CAPDEV, across the DOTMLPF-P, support will be provided to the APNT CFT to document the enduring requirements for the tactical space layer and NAVWAR capabilities for situational awareness, assured PNT and PNT denial to our adversaries. ***FY 2022 Plans:*** USASMDC Space and Missile Defense Center of Excellence (SMDCoE) will continue the full spectrum of JCIDS concept to capability development efforts to enhance the resiliency and effectiveness of critical space-based and space enabled assets and JCIDS capability development activities for space superiority, theater missile warning, high altitude, and emerging concepts/ technology for the full range of Navigation Warfare, tactical space layer, hypersonics, counter hypersonics, and directed energy. SMDCoE will participate in robust campaign of learning with the Army, Army Futures Command, Joint and sister service wargaming, experimentation, live prototyping, studies, assessments, and exercises to learn, validate, develop, and integrate the concepts and technology described above. SMDCoE will provide support to PEO IEWS and PEO M&S to acquire and field space superiority and enhanced missile warning capabilities. USASMDC Space and Missile Defense Center of Excellence (SMDCoE) will execute these funds in FY 2022. ***FY 2021 to FY 2022 Increase/Decrease Statement:*** Decrease to the Architecture Development, War games and Demonstrations program.			
Title: Joint Friendly Force Tracking (J-FFT) Testbed	-	3.170	3.498
Description: All Project FE5 funding is being transfer to Project 990 funding in FY 2021.			

Exhibit R-2A, RDT&E Project Justification: PB 2022 Army		Date: May 2021
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 2020	FY 2021	FY 2022
Joint-Friendly Force Tracking (J-FFT) division provides capabilities development, sustainment, and technical support to the Friendly Force Tracking (FFT) and Hostile Force Tagging, Tracking, and Locating (HF TTL) efforts of Combatant Commanders, Services, U.S. Government Agencies, Allies, and Coalition partners to support situational awareness (SA), command and control (C2), interoperability, fratricide prevention, and lethality projection. J-FFT develops solutions at all classification levels to integrate FFT, HF TTL and other Position Location Information (PLI) and C2 data into current and planned architectures, systems, and operational pictures, and support development and deployment of requirements to satisfy rapidly evolving Joint C2 requirements. Major customers: SMDC Force Tracking Mission Management Center (FT MMC); Special Operations Command (SOCOM); Africa Command (AFRICOM); Air Force Rapid Capabilities Office (AF RCO); Joint Staff J6. J-FFT enables the FT MMC to support: 59 device types; 22 data architectures; 518 user groups; over 146K registered devices; over 5M FFT reports/day; over 400 distress messages ("911") alert reports/year. 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 as the lead USSTRATCOM component command for Friendly Force Tracking (FFT). ***FY 2021 Plans:*** J-FFT Testbed supports SMDC Force Tracking Mission Management Center (FT MMC) Special Operations Command (SOCOM) Africa Command (AFRICOM) Air Force Rapid Capabilities Office (AF RCO) Joint Staff J6 and other U.S. Government agencies by providing agile capability development and integrated solutions to validated requirements that enable interoperable force tracking data exchange and satisfy joint, agency and coalition warfighting needs for timely, accurate Common Operational Picture (COP) displays and decision making. JFFT development will continue to respond to the growth in FFT device use by enabling the number of device types, data types, and displays supported by the various FFT and HF TTL data architectures. The JFFT Testbed is scheduled to develop and deliver new capabilities including command and control messaging, new FFT and HF TTL data sources and devices, and the ratified NATO message standard for FFT. Also planned is the inclusion of cloud data services at the Impact Level 2 (IL 2) (publicly releasable data), IL 5 (unclassified national security data), and IL 6 (secret), and re-design and implementation of needed upgrades to the Force Tracking Web product, fulfilling requirements for added functionality in data visualization and management. JFFT will continue to exploit, expand and provide mission owners with approved infrastructures at all classification levels that achieve improved performance and reduce costs. JFFT Testbed will remain a key contributor to support North Atlantic Treaty Organization Capability Team activities and other coalition assessments and exercises that advance US and coalition FFT interoperability. USASMDC Space and Missile Defense Center of Excellence (SMDCOE) will execute these funds in FY 2021. ***FY 2022 Plans:*** J-FFT Testbed supports SMDC Force Tracking Mission Management Center (FT MMC) Special Operations Command (SOCOM) Africa Command (AFRICOM) Air Force Rapid Capabilities Office (AF RCO) Joint Staff J6 and other U.S. Government agencies			

Exhibit R-2A, RDT&E Project Justification: PB 2022 Army		Date: May 2021
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 2020	FY 2021	FY 2022
by providing agile capability development and integrated solutions to validated requirements that enable interoperable force tracking data exchange and satisfy joint, agency and coalition warfighting needs for timely, accurate Common Operational Picture (COP) displays and decision making. JFFT development will continue to respond to the growth in FFT device use by enabling the number of device types, data types, and displays supported by the various FFT and HF TTL data architectures. The JFFT Testbed is scheduled to develop and deliver new capabilities for added functionality in data visualization and management. JFFT will continue to exploit, expand and provide mission owners with approved infrastructures at all classification levels that achieve improved performance and reduce costs. JFFT Testbed will remain a key contributor to support North Atlantic Treaty Organization Capability Team activities and other coalition assessments and exercises that advance US and coalition FFT interoperability. USASMDC Space and Missile Defense Center of Excellence (SMDCoE) will execute these funds in FY 2022. ***FY 2021 to FY 2022 Increase/Decrease Statement:*** The projected $275K (8.5%) increase to the J-FFT program in FY2022 is essential to advancing the capability of the program to ensure continued protection from fratricide to the warfighter and improved hostile force tracking.			
Title: Organizational Development as Part of the SRC40 Proponecy Mission	-	2.853	2.567
Description: All Project FE5 funding is being transfer to Project 990 funding in FY 2021. 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. ***FY 2021 Plans:*** Continue to participate in the Force Design Update (FDU) process. The U.S. Army Space and Missile Defense Command (USASMDC) Space and Missile Defense Center of Excellence (SMDCoE) will participate in the recurring process used to gain HQDA approval of organizational structure changes and designs through the FDU and FDU Jr. processes. This includes the development of Operational & Organizational Concept Papers, Organization Design Papers, Cost Benefit Analyses, Unit Reference Sheets, and Manpower Requirements Criteria determination. Participate in the Total Army Analysis (TAA), the Army's annual process to examine the projected Army force qualitatively and quantitatively. USASMDC will support TAA Rule of Allocation development, Capability Demand Analysis and Resourcing phases to ensure SRC40 units are properly accounted for in the future Program Objectives Memorandum (POM) Force. This is performed to analyze the projected Army Force against future demands and levels of funding/authorizations to build the POM Force. USASMDC SMDCOE will review the USASMDC Troops, Organization and Equipment (TOE) requirements documents conducted as part of a cyclic process as well when needed during other Force Design processes (i.e.-Basis of Issue Plan (BOIP) Modernization Path (MODPATH) reviews, Notification of Change reviews, SSN-LIN Automated Management and Integrating System (SLAMIS) reviews, etc.). Participate in BOIP Development. BOIP Development is collection of processes including the cyclic review of Army-wide BOIPs under development, development of			

Exhibit R-2A, RDT&E Project Justification: PB 2022 Army		Date: May 2021
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 2020	FY 2021	FY 2022
Feeder Data for USASMDC proponent item BOIPs, and validation of BOIP MODPATHs to USASMDC TOEs. Complete the Space Forces Force Structure Review which is a Cost-Benefit Analysis-like structured three-phased process consisting of a Needs Analysis, Gap Analysis, and Solutions Analysis to identify and document organizational based capability needs and gaps, develop a prioritized list of those gaps, and identify potential materiel and/or non-materiel solutions. U.S. Army Space and Missile Defense Command (USASMDC) Space and Missile Defense Center of Excellence (SMDCoE) will execute these funds in FY 2021. ***FY 2022 Plans:*** Continue to participate in the Force Design Update (FDU) process. The U.S. Army Space and Missile Defense Command (USASMDC) Space and Missile Defense Center of Excellence (SMDCoE) will participate in the recurring process used to gain HQDA approval of organizational structure changes and designs through the FDU and FDU Jr. processes. This includes the development of Operational & Organizational Concept Papers, Organization Design Papers, Cost Benefit Analyses, Unit Reference Sheets, and Manpower Requirements Criteria determination. Participate in the Total Army Analysis (TAA), the Army's annual process to examine the projected Army force qualitatively and quantitatively. USASMDC will support TAA Rule of Allocation development, Capability Demand Analysis and Resourcing phases to ensure SRC40 units are properly accounted for in the future Program Objectives Memorandum (POM) Force. This is performed to analyze the projected Army Force against future demands and levels of funding/authorizations to build the POM Force. USASMDC SMDCoE will review the USASMDC Troops, Organization and Equipment (TOE) requirements documents conducted as part of a cyclic process as well when needed during other Force Design processes (i.e.-Basis of Issue Plan (BOIP) Modernization Path (MODPATH) reviews, Notification of Change reviews, SSN-LIN Automated Management and Integrating System (SLAMIS) reviews, etc.). Participate in BOIP Development. BOIP Development is collection of processes including the cyclic review of Army-wide BOIPs under development, development of Feeder Data for USASMDC proponent item BOIPs, and validation of BOIP MODPATHs to USASMDC TOEs. Complete the Space Forces Force Structure Review which is a Cost-Benefit Analysis-like structured three-phased process consisting of a Needs Analysis, Gap Analysis, and Solutions Analysis to identify and document organizational based capability needs and gaps, develop a prioritized list of those gaps, and identify potential materiel and/or non-materiel solutions. U.S. Army Space and Missile Defense Command (USASMDC) Space and Missile Defense Center of Excellence (SMDCoE) will execute these funds in FY 2022. ***FY 2021 to FY 2022 Increase/Decrease Statement:***			

Exhibit R-2A, RDT&E Project Justification: PB 2022 Army		Date: May 2021
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 2020	FY 2021	FY 2022
Overall funding reductions to the Army Space Systems Integration (990) program result in a 12% decrease to the SRC40 Proponency Mission will limit USSMDC?s ability to gain approval of organizational structure changes and designs for Army space forces in FY2022.			
Title: Position, Navigation, and Timing Navigation Warfare (PNT/NAVWAR)	-	3.033	2.157
Description: USASMDC Space and Missile Defense Center of Excellence (SMDCoE) will continue JCIDS capability development efforts to enhance the resiliency and effectiveness of critical space-based and space enabled assets and JCIDS capability development activities for space superiority, theater missile warning, high altitude, and emerging concepts/ technology for the full range of Navigation Warfare, tactical space layer, hypersonics, counter hypersonics, and directed energy. SMDCoE will provide support to PEO IEWS and PEO M&S to acquire and field space superiority and enhanced missile warning capabilities. A JTAGS Block III CDD will be written to document the requirements to meet advanced missile threats and to counter hypersonics. A high altitude CDD will be written to capture the requirements for a high altitude, multi-mission, persistent platform to provide resiliency for space based capabilities. CAPDEV support will be provided to the APNT CFT to document the enduring requirements for the tactical space layer and NAVWAR capabilities for situational awareness, assured PNT and PNT denial to our adversaries. U.S. Army Space and Missile Defense Command (USASMDC) Space and Missile Defense Center of Excellence (SMDCoE) will execute these funds. ***FY 2021 Plans:*** Based on the results of our efforts in 2020 the USASMDC Space and Missile Defense Center of Excellence will continue 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. Support the Army Assured Positioning Navigation and Timing (APNT) Cross Functional Team by conducting required capability analysis and developing JCIDS documents for APNT Enabling systems and APNT Situational Awareness. Specific actions planned are ? Write Alternate Navigation Concept of Operations ? Support planning and execution of Lonestar Development Operations ? Support planning and execution of Alternate Navigation Development Operations ? Write and coordinate Gunsmoke requirements document ? Write and coordinate Lonestar requirements document ? Document Alternate Navigation requirements ? Obtain input from the NAVWAR Community of Interest and write NAVWAR Attack CONOPS ? Support execution of NAVWAR Attack Study			

Exhibit R-2A, RDT&E Project Justification: PB 2022 Army		Date: May 2021
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 2020	FY 2021	FY 2022
? Facilitate inclusion of NAVWAR Attack systems in Army experiment, exercises, war games and other events to build knowledge about the Army need for this capability ? Write and coordinate NAVWAR Attack requirements document ? Identify how NAVWAR Attack concepts and capabilities will Multi-Domain operations ? Provide NAVWAR and space subject matter expertise to help develop Fires Organizational and Operational Concept Document ? Furnish NAVWAR subject matter expertise to support revision of Space Brigade Organizational and Operational Concept Division ? Conduct analysis to determine if the fielding of a candidate NAVWAR technology would drive organizational changes			
FY 2022 Plans: Based on the results of our efforts in 2021 the USASMDC Space and Missile Defense Center of Excellence will continue 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. Support the Army Assured Positioning Navigation and Timing (APNT) Cross Functional Team by conducting required capability analysis and developing JCIDS documents for APNT Enabling systems and APNT Situational Awareness. Specific actions planned are * Write Alternate Navigation Concept of Operations * Support planning and execution of Lonestar Development Operations * Support planning and execution of Alternate Navigation Development Operations * Write and coordinate Gunsmoke requirements document * Write and coordinate Lonestar requirements document * Document Alternate Navigation requirements * Obtain input from the NAVWAR Community of Interest and write NAVWAR Attack CONOPS * Support execution of NAVWAR Attack Study * Facilitate inclusion of NAVWAR Attack systems in Army experiment, exercises, war games and other events to build knowledge about the Army need for this capability * Write and coordinate NAVWAR Attack requirements document * Identify how NAVWAR Attack concepts and capabilities will Multi-Domain operations * Provide NAVWAR and space subject matter expertise to help develop Fires Organizational and Operational Concept Document * Furnish NAVWAR subject matter expertise to support revision of Space Brigade Organizational and Operational Concept Division * Conduct analysis to determine if the fielding of a candidate NAVWAR technology would drive organizational changes			

Exhibit R-2A, RDT&E Project Justification: PB 2022 Army		Date: May 2021
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2020	FY 2021	FY 2022
U.S. Army Space and Missile Defense Command (USASMDC) Space and Missile Defense Center of Excellence (SMDCoE) will execute these funds in FY 2022. ***FY 2021 to FY 2022 Increase/Decrease Statement:*** USSMDC received a one year increase in FY2021 to support increased manpower for this requirement but has not yet been able to get the required positions authorized and funded for FY22 and beyond.			
Title: APNT Integrated Space Communications ***Description:*** Development of a unique advanced space communications capability to explore advanced ground based space communications technologies and concepts utilizing bi-static Radio Frequency (RF) scattering and propagation with precision frequency, phase, and power management. This space communications capability will develop and demonstrate multiple advanced Army LEO space communications concepts and will also assess interfacing with multiple Joint Service space communication missions. The APNT CFT will execute $4.8770M of these funds in FY 2021. ***FY 2021 Plans:*** Assess performance of space communications capabilities of multiple advanced Army LEO space communications concepts and interfacing with multiple Joint Services. ***FY 2021 to FY 2022 Increase/Decrease Statement:*** Decrease in FY22 is due to transition of Integrated Space Communications to APNT CFT.	-	4.877	-
Accomplishments/Planned Programs Subtotals	-	25.584	18.755

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

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 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 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Personnel and Operations support	TBD	SMDC/ARSTRAT Huntsville, AL and Colorado Springs; SMDC/ARSTRAT Huntsville, AL and Colorado Spring : Huntsville, AL and Colorado Spring, CO	-	-		20.707		18.755		-		18.755	Continuing	Continuing	-
		Subtotal	-	-		20.707		18.755		-		18.755	Continuing	Continuing	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
APNT Integrated Space Communications0	TBD	Various : Huntsville AL, Wilmington, MA, Boulder CO, VA	-	-		4.877		-		-		-	0.000	4.877	-
		Subtotal	-	-		4.877		-		-		-	0.000	4.877	N/A

	Prior Years	FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	-		25.584		18.755		-		18.755	Continuing	Continuing	N/A

Remarks

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 0603308A / *Army Space Systems Integration*	**Project (Number/Name)** 990 / *Space And Missile Defense Integration*

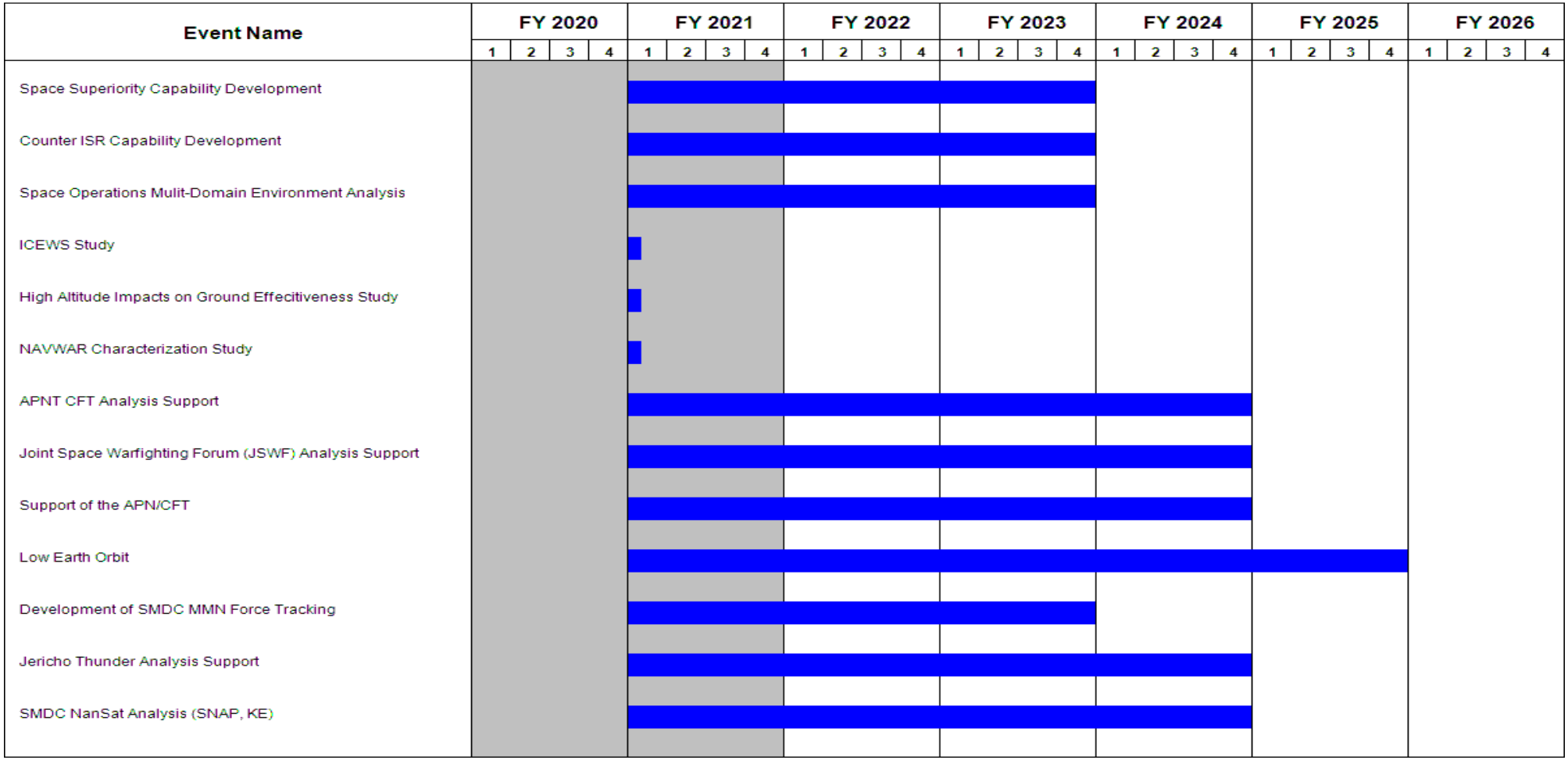

Exhibit R-4, RDT&E Schedule Profile: PB 2022 Army		Date: May 2021
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0603308A / *Army Space Systems Integration*	**Project (Number/Name)** 990 / *Space And Missile Defense Integration*

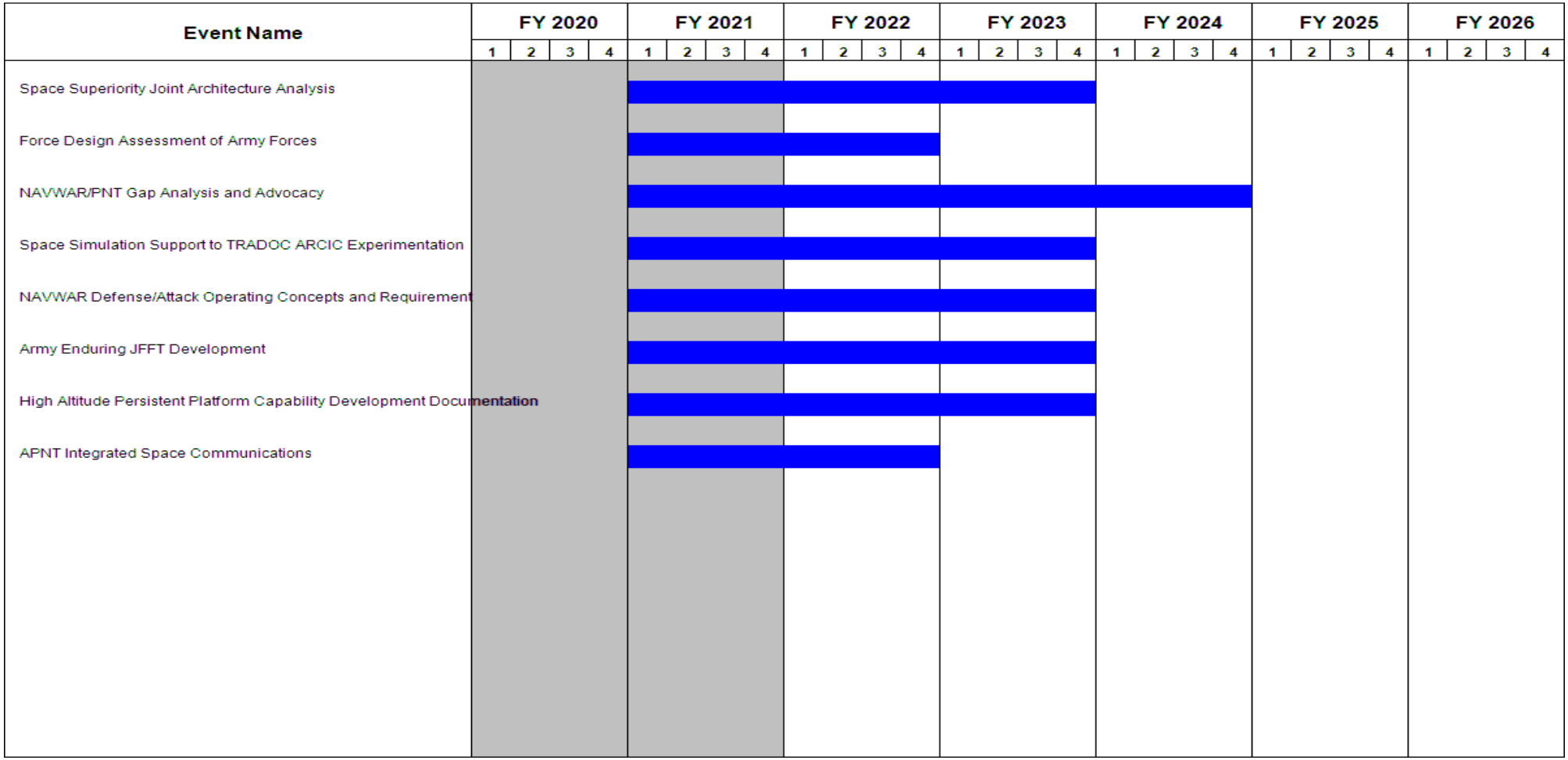

Exhibit R-4A, RDT&E Schedule Details: PB 2022 Army		Date: May 2021
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0603308A / *Army Space Systems Integration*	**Project (Number/Name)** 990 / *Space And Missile Defense Integration*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Space Superiority Capability Development	1	2021	4	2023
Counter ISR Capability Development	1	2021	4	2023
Space Operations Mulit-Domain Environment Analysis	1	2021	4	2023
ICEWS Study	1	2021	1	2021
High Altitude Impacts on Ground Effecitiveness Study	1	2021	1	2021
NAVWAR Characterization Study	1	2021	1	2021
APNT CFT Analysis Support	1	2021	4	2024
Joint Space Warfighting Forum (JSWF) Analysis Support	1	2021	4	2024
Support of the APN/CFT	1	2021	4	2024
Low Earth Orbit	1	2021	4	2025
Development of SMDC MMN Force Tracking	1	2021	4	2023
Jericho Thunder Analysis Support	1	2021	4	2024
SMDC NanSat Analysis (SNAP, KE)	1	2021	4	2024
Space Superiority Joint Architecture Analysis	1	2021	4	2023
Force Design Assessment of Army Forces	1	2021	4	2022
NAVWAR/PNT Gap Analysis and Advocacy	1	2021	4	2024
Space Simulation Support to TRADOC ARCIC Experimentation	1	2021	4	2023
NAVWAR Defense/Attack Operating Concepts and Requirement	1	2021	4	2023
Army Enduring JFFT Development	1	2021	4	2023
High Altitude Persistent Platform Capability Development Documentation	1	2021	4	2023
APNT Integrated Space Communications	1	2021	4	2022