Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Army	Date: April 2022
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0604715A *I Non-System Training Devices - Eng Dev*

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
Total Program Element	-	27.013	26.514	18.600	-	18.600	13.146	18.440	15.792	15.078	Continuing	Continuing
241: *Nstd Combined Arms*	-	27.013	26.514	18.600	-	18.600	13.146	18.440	15.792	15.078	Continuing	Continuing

A. Mission Description and Budget Item Justification

Program Element funds development of Non-System Training Devices to support force-on-force and force-on-target training at the Combat Training Centers (CTC), general military training, and training on more than one item/system, as compared with system devices which are developed in support of a specific item/weapon system. Army training devices and training simulations contribute to the modernization of the forces by enabling readiness and strengthening combat effectiveness through realistic training solutions for the Warfighter. Training devices maximize the transfer of knowledge, skills, and experience from the training situation to a combat situation. Force-on-force training and force-on-target at the National Training Center (NTC), Ft. Irwin, CA; Joint Readiness Training Center (JRTC), Ft. Polk, LA, Joint Multinational Readiness Center (JMRC), Hohenfels, Germany; Home Stations and deployed locations around the world; and battle staff training in Battle Command Training Program (BCTP) provide increased combat readiness through realistic collective training in low, mid, and high intensity scenarios. Project 241, Non-System Training Devices-Combined Arms, develops simulation training devices for Army-wide use, including the CTCs.

FY 2023 Project 241 funds significant development efforts in support of U.S. Army Training and Readiness on the Combat Training Center Instrumentation Systems (CTC-IS), Instrumentable-Multiple Integrated Laser Engagement System (I-MILES), Home Station Instrumentation Training System (HITS), Common Training Instrumentation Architecture (CTIA), OPFOR Integrated Air Defense System (IADS), Digital Range Training System (DRTS), the Future Army System of Integrated Targets (FASIT), Medical Simulation Training Center (MSTC), Unmanned Aerial Systems (UAS) Swarm, and the Live, Virtual, Constructive Integrating Architecture (LVC-IA).

B. Program Change Summary ($ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Previous President's Budget	27.013	26.540	0.000	-	0.000
Current President's Budget	27.013	26.514	18.600	-	18.600
Total Adjustments	0.000	-0.026	18.600	-	18.600
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	18.600	-	18.600
• FFRDC Transfer	-	-0.026	-	-	-

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Change Summary Explanation

FY 2023 funding increase reflects the fact that the FY 2022 President's Budget request did not include out-year funding.

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COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
241: *Nstd Combined Arms*	-	27.013	26.514	18.600	-	18.600	13.146	18.440	15.792	15.078	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Common Training Instrumentation Architecture (CTIA) program is the foundation architecture of the Live Training Transformation Family of Training Systems (LT2-FTS). The program contains critical core product-line architecture which provides commonality across training instrumentation systems and interoperability across Live, Virtual, Constructive Integrated Training Environment (LVC-ITE) and joint training systems. CTIA includes Army owned software components, architecture services, standards, protocols and governance used by domain-specific Live Training Transformation (LT2) and Live Training Systems (LTS) to include instrumented Force-On-Force (FOF) and Force-On-Target (FOT) training requirements. The CTIA also provides Post Deployment Software Support (PDSS) and technology refresh for the LT2 family of LTS supporting over 22 live instrumented training products which are fielded at over 200 CONUS and OCONUS sites across the Army.

Combat Training Center Instrumentation System (CTC-IS) funds the continued development of the existing Instrumentation Systems (IS) at the National Training Center (NTC), Joint Readiness Training Center (JRTC) and Joint Multinational Readiness Center (JMRC). CTC-IS funds the continued development of the Range Communication System at the NTC and JRTC, to provide high-fidelity live, virtual, and constructive brigade training rotations which prepare Brigade Combat Teams (BCTs), Joint partners, and supporting units to deploy in support of the Army Sustainable Readiness Model (SRM). The CTCs primary goal is to develop agile and adaptive leaders at the tactical, operational and strategic levels while providing BCTs the core training necessary to conduct decisive action in a dynamic operating environment.

The Instrumentable-Multiple Integrated Laser Engagement System (I-MILES) program provides realistic, real-time casualty effects for force-on-force tactical engagement training scenarios. Its ability to integrate into training instrumentation systems provides for high fidelity combined arms combat exercises supporting the Chief of the Staff of the Army's priority of "Readiness" and closely aligns with the Modernization priority of Soldier Lethality. I-MILES is required for use at Home Stations, the Combat Training Centers (CTCs) and in theater of operations to meet force-on-force training requirements. I-MILES program funding provides for the Development and Integration of new vehicle and dismount weapon systems meeting the Common Operating Environment (COE) requirements, as well as embedded Tactical Engagement Simulation (TES) development. This includes development efforts of the LTEC / LPAN Development of Legacy software patches that incorporate the Government owned LTEC operating system software. This creates a common architecture that provides the ability to develop new services to adapt to evolving Army requirements (i.e. Changes in weapon platforms, technologies, Pk Table Updates).

The Home Station Instrumentation Training System (HITS) currently provides a high-fidelity deployable instrumented training capability to support platoon thru battalion ground based Soldiers and vehicles in Force-on-Force Training. HITS tracks location of soldiers and vehicles and simulates weapons' effects and engagements, allowing units to "Train as they Fight" against live opponents. HITS provides accurate feedback to training units. HITS consists of light deployable components that can be rapidly assembled/disassembled and transported to support deployed training. HITS is a member of the Live Training Transformation (LT2) product line of training systems implementing hardware and software reuse with other Instrumentation Systems (IS). HITS provides the only Live training component for the large scale Live-

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Virtual-Constructive (LVC) military training exercises. HITS begins US Army aviation vehicle integration with Home Station instrumentation to cover comprehensive training engagements between ground and air forces.

The Medical Simulation Training Center (MSTC) provides realistic medical training to both medical and non-medical Soldiers in the Active, Reserve, and National Guard. MSTCs provide hands-on instruction on the latest battlefield trauma and critical care techniques based on Army Medical Center of Excellence (MEDCoE) approved performance oriented Program of Instruction (POI). Medical treatment validation exercises simulate the high stress of performing medical interventions in combat. MSTC supports Unit Medical Readiness by validating Combat Medic (68W) Emergency Medical Technician (EMT) biennial recertification requirements and provides Combat Lifesaver (CLS) training to non-medical Soldiers. The Tactical Combat Casualty Care Exportable (TC3X) Soldier System provides an exportable capability to train Soldiers on medical Warrior skills at the individual, leader, and collective levels. The TC3X system will consist of Training Aides, Devices, Simulators, and/or Simulations (TADSS); utilized by Soldier medics to provide realistic, hands-on training in a "train the trainer" fashion to all Soldiers at home stations, initial training centers, and combat training centers.

The Basic Electronics Maintenance Trainer (BEMT) provides the essential modernized electronic system maintenance training capability for the Army, Army National Guard, and the Army Reserve to achieve Military Occupational Specialty-Qualification (MOS-Q) for 40 Military Occupational Specialties (MOS) at 24 Active, National Guard, and Army Reserve camps, posts, and stations. Soldiers utilizing the BEMT system receive highly realistic training using scenarios which require performing basic electronic tasks in a virtual environment including tests, diagnosis, and repair while saving institutions significant expenses over live training alternatives. The BEMT consists of an Instructor Operator Station (IOS), Student Training Station(s) (STS), associated test equipment, COTS computer, electronics console(s), supporting experiment cards, soldering station, and content server as applicable.

The Live, Virtual, Constructive Integrating Architecture (LVC-IA) provides a net-centric linkage that collects, retrieves and exchanges data among LVC Training Aids, Devices, Simulations, and Simulators (TADSS) to include: Aviation Combined Arms Tactical Trainer (AVCATT), Close Combat Tactical Trainer (CCTT), Games For Training (GFT), Home Station Instrumentation Training System (HITS), Joint Land Component Constructive Training Capability (JLCCTC) and Synthetic Environment Core (SE Core),Universal Mission Simulator (UMS) and Mission Command Information Systems. The LVC-IA defines "how" information is exchanged among the different LVC domains and the Mission Command Information Systems. The LVC-IA provides enterprise level tools for exercise control, after action review, and system information assurance. It develops hardware and software to interface the different Live, Virtual, Constructive and Gaming communication protocols and to provide a correlated common operating picture for the training audience on their organic Mission Command equipment. The integration of the LVC TADSS with the Mission Command equipment will enable larger and more robust training events, to better prepare U.S. Soldiers for their missions at an overall reduced cost. The end-state goal is to enable an LVC Integrated Training Environment that can replicate Operational Environments in a cost effective manner to provide a high level of value-added training and mission rehearsal opportunities to Army Commanders and their Soldiers. In FY 2019, the LVC-IA program commence design and developmental activities for Version 4, which allowed for Web-based optimization; inclusion of new simulations to the architecture; and concurrency with core system TADSS and Army Mission Command Information Systems through FY 2022. FY 2023 request will continue developmental and integration activities to ensure concurrency with the Synthetic Training Environment (STE), TADSS, and Mission Command Information Systems.

The Army identified an operational gap in the training strategy for the OPFOR Integrated Air Defense System (IADS). It is a collection of enemy air defense weapons systems that engages Army aviation assets. Training Aircraft Survivability Equipment (ASE) Simulation Suite (TASS) is a live training system consisting of aircraft

components and ground emitters that replicates current and emerging enemy Air Defense systems. Its fidelity supports individual pilot training as well as the collective training requirements of the Brigade Combat Team to fully plan, prepare, execute and react against an enemy air defense weapons at the Combat Training Centers (CTC).

FASIT provides Live Fire training systems and software capable of supporting all Army automated ranges and it's Installations around the world. The FASIT training systems include: A single, universal target control software for all automated ranges (ground and aviation) identified in TC 25-8, providing users a controller with a common look and feel; downrange stationary and moving infantry and armor Presentation Devices (PDs) that interact with the control software to present targets and provide scoring feedback; battlefield/weapons effects devices that simulate combat situations, visuals, and sounds; and targets that provide visual, I2 and thermal representations of friendly/threat engagements. The FASIT systems enable trainers to develop scenarios to simulate wartime mission tasks in a stressful battlefield environment.

The Digital Range Training System (DRTS) provides advanced instrumentation specifically required for live fire gunnery training and qualification with the Abrams, Bradley, Stryker/MGS and Apache Aircraft on larger mounted maneuver Instrumented "Digital" Ranges. DRTS provides crew, section, platoon and company training and qualification capabilities above and beyond any other range in the Army inventory. These ranges interface with the tactical vehicles through an Integrated Player Unit Recorder (IPUR) or Smart Onboard Data Interface Module (SMODIM) to provide both real-time feedback to leaders and rapid development of complete After Action Reviews (AARs) and Take Home Packages (THPs). These AAR THPs include synchronized Thru-Sight Video (TSV) from the Commander/Gunner sights, crew camera video from inside the vehicles, thermal field camera video from the range cameras and internal crew audio for a complete evaluation tool. Ten of these DRTS ranges also incorporate Aerial Weapons Scoring System (AWSS) to interface with Aviation and Unmanned Aerial System gunnery training and qualification in a similar manner. The five standard training ranges identified utilize all available combat systems capabilities and digitally integrate them to manage all forces undergoing crew through collective live-fire training and qualification: Digital Multi-Purpose Range Complex (DMPRC) supports all gunnery tables and Combined Arms Live fire Exercise (CALFEX) for Armor, Infantry and Aviation; Digital Multi-Purpose Training Range (DMPTR) supports crew and section qualification for Armor and Infantry; Battle Area Complex (BAX) supports crew through company CALFEX for Stryker & Infantry Brigade Combat Team (SBCT/IBCT); Digital Air Ground Integration Range (DAGIR) supports all gunnery tables and CALFEX for Armor, Infantry and Aviation platforms; Aerial Gunnery Range (AGR) at Fort Bragg supports crew through Company CALFEX for manned/unmanned aviation platforms.

OPFOR Surrogate Wheeled Vehicles (OSWV) provides a collection of wheeled vehicles, used as training aids to portray threat vehicles including tactical vehicles, technical vehicles, and Civilian on the Battlefield vehicles (COB-V). The program supports the CTC OPFOR/COE Pillar capability through technical vehicles, unique VISMODs, and COB-Vs. This capability provides for an accurate replication of OPFOR and COB-Vs environment that rotational units must train against.

Unmanned Aerial Systems (UAS) Swarm provides integrated, multi-domain threat representative UAS platforms through custom UAS components and payloads that challenge training communities' execution of UAS Tactics, Techniques and Procedures (TTPs), use of current and evolving UAS technologies (i.e., Drone buster), and gives feedback on their vulnerabilities to UAS-enabled Intelligence, Surveillance, and Reconnaissance, Cyber, Electronic Warfare, Dynamic Targeting and Swarm operations.

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In November 2020, the FASIT program obtained a successful Milestone Development Decision. The program was approved entry into the Defense Acquisition System in multiple phases (EMD and Production) as an ACAT II program. FASIT is not a new start program, but is the continuation of requirements and formal update to the New Generation Army Targetry System (NGATS) Operational Requirements Document (ORD) that was approved 11 June 1996.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: Engineering and Manufacturing Development (EMD) phase contract activity for the Common Training Instrumentation Architecture (CTIA) program. ***Description:*** Continue EMD phase contract activities for the CTIA program to provide common architecture capabilities. ***FY 2022 Plans:*** FY 2022 Base RDTE dollars in the amount of $2.453 million will fund the continued development of CTIA to provide the common architecture capabilities that are essential for development, fielding, technology and capability insertion for 22 live training systems at 200+ training locations worldwide, to include the Combat Training Centers-Instrumentation System utilized at the National Training Center, the Joint Readiness Training Center, and at the Joint Multinational Readiness Center; the Home Station Instrumentation System; the Digital Ranges Training System, and future modernization efforts including emerging Army and joint architectures. ***FY 2023 Plans:*** FY 2023 Base RDTE dollars in the amount of $2.699 million will fund the continued development of CTIA to provide the common architecture capabilities that are essential for development, fielding, technology and capability insertion for 22 live training systems at 200+ training locations worldwide, to include the Combat Training Centers-Instrumentation System utilized at the National Training Center, the Joint Readiness Training Center, and at the Joint Multinational Readiness Center; the Home Station Instrumentation System; the Digital Ranges Training System, and future modernization efforts including emerging Army and joint architectures. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Increase of in funding from FY 2022 to FY 2023 is due to a slight rise in material cost.	2.417	2.453	2.699
Title: Engineering and Manufacturing Development (EMD) phase contract activity for the Combat Training Center Instrumentation System (CTC-IS). ***Description:*** Continue EMD phase contract activities for the CTC-IS. ***FY 2022 Plans:*** FY 2022 Base RDTE dollars in the amount of $1.806 million will fund the initial design of the NTC Western Training Area extension for the NTC Instrumentation System. Tracking, Observer Controller / Trainer (OC/T) Situational Awareness, OC/T Voice. Army Aviation, Voice Tactical Monitoring, Spectrum Monitoring, video and AAR support will be extended into the Western Training area. Network, antenna site, antenna tower, fiber optics and power generation must be designed for this effort.	3.386	3.744	2.680

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
FY 2022 Base RDTE dollars in the amount of $.541 million will fund post deployment software support to implement software to support the next Integrated Player Unit (IPU) being developed. Improvements to increase battery life and reduce data plan usage include decentralized indirect fire, minefields and sleep functions. FY 2022 Base RDTE dollars in the amount of $1.397 million will fund the Life Cycle Management (LCM) of Live Training Family of Systems, continuing the development of the architecture framework for future Life Cycle Efforts for the Hardware Product Line Framework. ***FY 2023 Plans:*** FY 2023 Base RDTE dollars in the amount of $2.680 million will fund the modeling and final design efforts for the NTC Western Training Area extension for the NTC Instrumentation System. Tracking, Observer Controller / Trainer (OC/T) Situational Awareness, OC/T Voice. Army Aviation, Voice Tactical Monitoring, Spectrum Monitoring, video and AAR support will be extended into the Western Training area. Network, antenna site, antenna tower, fiber optics and power generation must be designed for this effort; Instrumented Player Unit(IPU) will fund the studies, capability analysis, and initial design for the next generation Combat Training Center IPU, which will be utilized at the three CTC?s to provide improvements to increase battery life and reduce data plan usage include decentralized indirect fire, minefields and sleep functions; M SHORAD Integration effort will fund post deployment software support to implementation of software to support improved Air Defense Artillery (ADA) and Multi-Domain Operations (MDO) replication at the CTC?s providing more realistic MDO training environment. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Decrease in funding reflects the elimination of activities for the LCM RDTE Effort.			
Title: Engineering and Manufacturing Development (EMD) phase contract activity for the Instrumentable-Multiple Integrated Laser Engagement System (I-MILES). ***Description:*** EMD phase contract activities for the I-MILES program. ***FY 2022 Plans:*** FY 2022 Base RDTE dollars in the amount of $2.876 million RDTE funding will analyze, develop, test and implement the Live Training Engagement Composition (LTEC) through Post Deployment Software Support efforts. Funding will ensure that baseline relevancy is maintained. Funding will also ensure that there is development and integration of new functionality to maintain concurrency. ***FY 2023 Plans:*** FY 2023 Base RDTE dollars in the amount of $3.201 million RDTE funding will analyze, develop, test and implement the Live Training Engagement Composition (LTEC) through Post Deployment Software Support efforts. Funding will ensure that baseline relevancy is maintained. Funding will also ensure that there is development and integration of new functionality to maintain	2.700	2.876	3.201

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
concurrency. By FY 2023 three of the five I-MILES product lines will be at end of useful live. This work will extend the useful life of the product lines. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Increase of in funding from FY 2022 to FY 2023 is due to a slight rise in material cost.			
Title: Engineering and Manufacturing Development (EMD) phase contract activity for the Home Station Instrumentation Training System (HITS) program. ***Description:*** EMD phase contract activities for the HITS program. ***FY 2022 Plans:*** FY 2022 Base RDTE dollars in the amount of $3.995 million will continue efforts for Home-Station Instrumentation Training Systems (HITS) to incorporate a new network that will enable Observer, Controller/Trainer (OC/T) interoperability using a tablet computer. This new network shall be in addition to the HITS network which is a closed loop system. HITS will develop a Voice Tactical Monitoring and Recording capability to interface with new tactical radios being fielded to the Army for After Action Reviews in home station training exercises. In addition, HITS maintains concurrency with the Combat Training Centers by developing software/hardware updates so that HITS has similar training capabilities found at the Combat Training Centers. ***FY 2023 Plans:*** FY 2023 Base RDTE dollars in the amount of $1.679 million will continue efforts for Home-Station Instrumentation Training Systems (HITS) Concurrency for new software (either COTS or developmental) that will yield additional capabilities to HITS; HITS Aviation for small UAS adding this capability to HITS (Drones outfitted with tracking devices (radios) that can be picked up by the HITS tracking software). Tactical Radios- procure new radios that are integrated with a particular locations communication architecture. PDSS for new software support (exercise support) to provide expertise and troubleshooting during force on force exercises. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** FY 2022 to FY 2023 Decrease Statement: Decrease of $2.316 million in RDTE due to fielding only one set of new radios per location per fiscal year as the new communication network is developed. Each HITS location will have a unique radio specification that could be different from other locations in order for the radios to communicate within that network. When each new communication network is fielded a radio procurement shall be instigated with radios unique to that location and network. Using this methodical approach shall allow the Government to improve force on force communications.	1.810	3.995	1.679
Title: Engineering and Manufacturing Development (EMD) phase contract activity for the Medical Simulation Training Center (MSTC).	0.432	0.484	1.209

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Description: EMD phase contract activities for the MSTC program to support the Virtual Patient System technologies. The approved MSTC Capability Production Document (CPD), Inc 1, Rev 1, dtd 6 MAR 2019 Capabilities has significant unfulfilled requirements, without which are enabling negative medical trauma training. The MSTC CPD requires and states that ALL GENDERS shall be represented within the medical training simulations and scenarios. The FEMALE GENDER is neither wholly, adequately, nor accurately represented in the MSTC at this time. The CPD also states that realistic medical scenarios are required. Realistic combat trauma training is not represented in the MSTC due to the inaccurate simulation of the Human Physiology and absence of representative battlefield wounds. These requirements align with near-peer competition over-match.			
FY 2022 Plans: FY 2022 Base RDTE dollars in the amount of $.484 million will allow Instructor Support System (ISS) combat training scenarios to continue to be improved in a Synthetic Training Environment (STE) utilizing the hardware and software solutions developed by Industry in FY 2021, FEMALE trauma mannequin, Human Physiology software, and dynamic wound patterns shall continue to be modified through contract action to represent Army requirements. RDT&E funding is required for the Virtual Prototype Patient System (VPS) line of effort for FY 2022 for the integration and validation of a relevant and realistic GENDER-specific FEMALE mannequin/trauma simulator. RDT&E funding is required for the Virtual Prototype Patient System (VPS) line of effort for FY 2022 for the verification, validation, and accreditation (VV&A) of software that simulates, for each GENDER of mannequin, the dynamics of the Human Physiology to assess medical interventions and the verification, validation, and accreditation of hardware that represents the morphing wound patterns from gunshot, heat, chemical, electrical, biological, and nuclear events.			
FY 2023 Plans: FY 2023 Base RDTE dollars in the amount of $1.209 million will allow the continued development and modification of the Female Trauma Mannequin, developed through a SBIR Phase II contract, utilizing the hardware and software solutions developed by Industry in FY 2021. The Female Trauma Mannequin, Human Physiology software, and dynamic wound patterns shall continue to be modified through contract action to represent Army requirements. RDT&E funding is required for the Virtual Prototype Patient System (VPS) line of effort for FY 2023 for the continued integration and validation of a relevant and realistic GENDER-specific FEMALE mannequin/trauma simulator. RDT&E funding will support the Virtual Prototype Patient System (VPS) line of effort for FY 2023 for the verification, validation, and accreditation (VV&A) of software that simulates, for each GENDER of mannequin, the dynamics of the Human Physiology to assess medical interventions and the verification, validation, and accreditation of hardware that represents the morphing wound patterns from gunshot, heat, chemical, electrical, biological, and nuclear events.			
FY 2022 to FY 2023 Increase/Decrease Statement:			

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Increase in funding from FY 2022 $.502 million to FY2023 $1.209 reflects additional funding toward a realistic GENDER-specific FEMALE mannequin/trauma simulator.			
Title: Live, Virtual, Constructive Integrating Architecture (LVC-IA) Engineering and Manufacturing Development (EMD) phase contract activity. ***Description:*** Continue EMD phase contract activities for the LVC-IA program. ***FY 2022 Plans:*** Live, Virtual, and Constructive-Integrating Architecture (LVC-IA) program will complete system development, integration and demonstration of the LVC-IA Version 4 capability which includes the developmental activities for Web-based optimization, Synthetic Training Environment (STE) compatibility, and concurrency with core system TADSS and Army Mission Command Information Systems. ***FY 2023 Plans:*** Live, Virtual, and Constructive-Integrating Architecture (LVC-IA) program will continue system development, integration and demonstration of the LVC-IA capability to ensure concurrency with STE, core system TADSS, and Army Mission Command Information Systems. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Increase from FY2022 to FY2023 is due to the continued development to ensure concurrency with core system STE, TADSS and Army Mission Command Information Systems.	4.345	2.514	2.723
Title: Live, Virtual, Constructive Integrating Architecture (LVC-IA) Program Government System Test and Evaluation. ***Description:*** Government System Test and Evaluation for the LVC-IA Program. ***FY 2022 Plans:*** LVC-IA will complete Federation Integration and System Measurement of Performance (SMP) events, Functional Verification, Test Readiness Review (TRR) and Government Acceptance Testing for Version 4. Additionally, LVC-IA will continue integration, testing and evaluation activities in support of LVC-IA interoperability with TADSS and other Mission Command Information Systems. ***FY 2023 Plans:*** LVC-IA will continue integration, testing and evaluation activities in support of LVC-IA interoperability with STE, TADSS and other Mission Command Information Systems. ***FY 2022 to FY 2023 Increase/Decrease Statement:***	1.277	0.631	0.638

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Increase from FY 2022 to FY 2023 is due to the additional testing and evaluation activities in support of LVC-IA interoperability with Mission Command Information Systems.			
Title: Government Program Management for the Live, Virtual, Constructive Integrating Architecture (LVC-IA) Program. ***Description:*** Government Program Management for the LVC-IA Program. ***FY 2022 Plans:*** Will provide program management, engineering and technical oversight, contract support, and travel for the LVC-IA Program. ***FY 2023 Plans:*** Will provide program management, engineering and technical oversight, contract support, and travel for the LVC-IA Program. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Increase from FY2022 to FY2023 is due to the additional engineering and technical oversight, and travel to support program activities.	0.153	0.225	0.243
Title: Engineering and Manufacturing Development (EMD) phase contract activity for the Combat Training Center Live Fire Modernization (CTC Live Fire Mod) ***Description:*** Combat Training Center Live Fire Modernization (CTC Live Fire Mod) provides Future Army System of Integrated Targets (FASIT) qualified live-fire capable targets which includes Stationary Armor Targets (SAT) with accompanying Battlefield Effects Simulators (BES), Stationary Infantry Targets (SIT), Human Urban Targets (HUT), Double-Arm SITs, Moving Infantry Targets (MIT), and non-FASIT qualified Aviation 3-D and Unattended Aerial Systems (UAS) targets. These provide a capability for the CTCs to support the transition from Mission Rehearsal Exercise/Situational Training Exercise (MRE/ST) rotations to Unified Land Operations (ULO) against a hybrid threat.	2.409	-	-
Title: Engineering and Manufacturing Development (EMD) phase contract activity for the Target Modernization program. ***Description:*** The Target Modernization program?s primary innovation goals are the development of advanced non-contact ballistic hit detection and recognition system, high fidelity dynamic infrared threat representations, advanced human type targets, non-pyrotechnic battlefield effects replication systems, non-contact area scoring technology, and augmented reality on live fire ranges; all aimed at increasing training realism, enhancing Soldier resiliency, and lowering life cycle costs.	3.650	-	-
Title: Engineering and Manufacturing Development (EMD) phase contract activity for the Future Army System of Integrated Targets (FASIT). ***Description:*** The FASIT program's primary innovation goals are the development of advanced non-contact ballistic hit detection and recognition system, advanced human type targets, non-contact area scoring technology, combat ID targets, electromagnetic/	-	5.636	1.290

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
cyber replication, multi domain operations, and augmented reality on live fire ranges; all aimed at increasing training realism, enhancing Soldier resiliency, and lowering life cycle costs. ***FY 2022 Plans:*** FY 2022 Base RDTE dollars in the amount of $5.636 million provides for the incremental funding of the Dynamic Infrared Projection research and development aimed at the completion and obtainment of a Technology Readiness Level of 8/9 for the system to be able to portray realistic thermal images onto target presentation devices, to include environmental verification and performance testing. Funding will also incrementally fund the Phase III SBIR contract for the non-pyrotechnic battlefield effects replication technologies. The Non-pyrotechnic battle field effects effort will focus on hostile shot replication, machine gun fire replication, black smoke generation, and sound effects simulators via non-pyrotechnic solutions. The Non-pyrotechnic battle field effects effort will provide for an inexpensive and ruggedized system that can be utilized to create accurate training environment realism enhancement. Current pyrotechnic solutions require specialized training, handling, and procurement of effects, and can effect training throughput by requiring the ranges to shut down during reloading. The nonpryo solutions will align with the defined OPTEMPO in the FASIT CPD. It also provides for incremental funding of the new Battlefield Effects Devices. These devices will focus on enhancing and simulating a hostile tank's main gun fire signature from a target device, tracer round shootback signature, and small arms hostile fire via pyrotechnic solutions. The pyrotechnic battlefield effect device effort will provide for an inexpensive and rugged systems that can be used to create a more realistic training environment for Soldiers to train with in a live fire environment. The pyrotechnic solutions will align with the defined OPTEMPO in the FASIT CPD. ***FY 2023 Plans:*** FY 2023 Base RDTE dollars in the amount of $1.290 million provides for development of Non-Contact Area Scoring Technology (NCAST). NCAST is a capability that will be developed to replace the mobile Aerial Weapons Scoring System (AWSS) systems as well as the fixed AWSS on select aviation Home Station ranges to support Aviation Gunnery Training. Additionally, the system will provide real-time detection of incoming munitions, location of penetration, and determine the caliber and velocity of incoming rounds. These efforts and solutions will align with the defined OPTEMPO in the FASIT CPD and Army Training Circular 25-8. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Decrease from FY 2022 to FY 2023 is due to the conclusion of two Phase III Small Business Innovative Research (SBIR) efforts, Dynamic Infrared (DIR) Projection and Non-pyrotechnic Battlefield Effects Replication Technology (BFER). DIR is a system that will be able to portray realistic thermal images onto target presentation devices, to include environmental verification and performance testing. BFER effort will produce hostile shot replication black smoke generation and sound effects simulators			

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
via non-pyrotechnic solutions. Both of these SBIR Phase III efforts will begin fielding new capabilities in FY 2023 as part range upgrade and new range efforts.			
Title: Engineering and Manufacturing Development (EMD) phase contract activity for the Digital Range Training System (DRTS) ***Description:*** Conduct development of a government-owned Technical Data Package (TDP) for the DRTS program to enable competitive acquisitions for targets. ***FY 2022 Plans:*** RDTE of $1.139 million will continue the development of a Government-owned and managed Technical Data Package (TDP) for the presentation devices utilized on the DRTS and Future Army Systems of Integrated Targets (FASIT). The funding will be used to complete the design efforts, build prototype units, and perform the developmental testing to validate that the TDP works as required and the presentation devices can be used to support the technology refresh and modernization efforts on all Army ranges. ***FY 2023 Plans:*** FY 2023 Base RDTE dollars in the amount of $1.036 million will finalize the development, testing and evaluation of a Government-owned and managed Technical Data Package (TDP) for the presentation devices (target lifters) utilized on the DRTS and FASIT ranges. The funding will be used to build prototype and first article units to perform the developmental and environmental testing to validate that the TDP works as required and the presentation devices can be used to support the technology refresh and modernization efforts on all Army ranges. It will also be used to see how the new design works in its operational training environment to establish the Reliability, Availability and Maintainability performance of the devices. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** The decrease in funding from FY 2022 to FY 2023 is due to the fact that FY 2023 is the final year/phase of the effort and the estimated amount of funding necessary to complete the testing and validation of the Technical Data Package has decreased.	1.445	1.139	1.036
Title: Engineering and Manufacturing Development (EMD) phase contract activity for the OPFOR Integrated Air Defense System (IADS) ***Description:*** EMD phase contract activities for the IADS Program ***FY 2022 Plans:*** FY 2022 RDTE funding of $0.554 million will be used to start development of weapon processor software, integration with the training instrumentation systems at the Combat Training Centers (CTCs), and validate the solution through testing. ***FY 2022 to FY 2023 Increase/Decrease Statement:***	2.566	0.554	-

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Decrease of $.554 million from FY 2022 to FY 2023 is the result of completing the RDTE OPFOR IADS development effort resulting in the program no longer requiring RDTE funding in FY23.			
Title: Engineering and Manufacturing Development (EMD) phase contract activity for Basic Electronics Maintenance Trainer (BEMT) ***Description:*** BEMT provides the essential modernized electronic system maintenance training capability for the Army, Army National Guard, and the Army Reserve to achieve Military Occupational Specialty-Qualification (MOS-Q) for 40 MOS at 24 Active, National Guard, and Army Reserve camps, posts, and stations. BEMT will be modernizing the electronics maintenance training. BEMT provides training in basic electronics, while saving institutions significant administrative expenses over live training alternatives. ***FY 2022 Plans:*** FY 2022 Base RDTE dollars in the amount of $.295 million will continue to fund the enhancement of the Learning Management System courseware. Developing solutions to improve Army Enterprise server capability. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Decrease of $.295 million from FY 2022 to FY 2023 is the result of completed BEMT development effort that no longer requires additional resources.	0.229	0.295	-
Title: Engineering and Manufacturing Development (EMD) phase contract activity for OPFOR Attack Aircraft Shoot-back Capability (OA2SBC) program ***Description:*** EMD phase contract activities for the OPFOR Attack Aircraft Shoot-back Capability (OA2SBC) program.	0.194	-	-
Title: Engineering and Manufacturing Development (EMD) phase contract activity for the Unmanned Aerial System (UAS) Swarm ***FY 2022 Plans:*** FY 2022 RDTE of $.999 million provides for the incremental funding for development of Unmanned Aerial System (UAS) Swarm software and integration with 4G/LTE networks, development of payload and integration, initial operational assessments, and will support hardware development for charging stations, tablets, and manual/remote deployment systems. ***FY 2023 Plans:*** FY 2023 RDTE of $1.202 million provides for the incremental funding for development of UAS Swarm software and integration with 4G/LTE networks, development of payload and integration, initial operational assessments, and will support hardware development for charging stations, tablets, and manual/remote deployment systems. ***FY 2022 to FY 2023 Increase/Decrease Statement:***	-	0.999	1.202

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Increase of in funding from FY 2022 to FY 2023 is due to a slight rise in material cost.			
Title: SBIR/STTR	-	0.969	-
FY 2022 Plans: Funding transferred in accordance with Title 15 USC ?638.			
FY 2022 to FY 2023 Increase/Decrease Statement: Funding transferred in accordance with Title 15 USC ?638.			
Accomplishments/Planned Programs Subtotals	27.013	26.514	18.600

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
• MA6600: *Combat Training Centers Support*	87.580	94.965	48.046	-	48.046	40.186	50.374	47.871	44.747	Continuing	Continuing
• NA0100: *Training Devices, Nonsystem*	164.814	174.644	201.966	-	201.966	211.759	198.208	225.581	242.282	Continuing	Continuing

Remarks

D. Acquisition Strategy

Competitive development efforts based on performance specifications.

1. In FY 2019 - 2023, Combat Training Center Instrumentation Systems (CTC-IS) RDTE will be used to fund a Life Cycle Product-line Management (LCPM) contract structured as a 5 year Single Award Indefinite-Delivery/Indefinite-Quantity (IDIQ) for the implementation of a Hardware Product Line (HPL), the contractor was selected. The strategy is to establish a deliberate approach to Life Cycle Management (LCM) of Live Training Family of Systems, providing the framework for future Life Cycle Efforts for the Hardware Product Line Framework.

2. In FY 2020, a new competitive IDIQ contract with a 1-year base and 7 single-year option periods was awarded to General Dynamics Mission Systems - CTIA will be executed under this contract.

3. The LVC-IA Enhanced Capability contract is the competitively awarded follow-on effort awarded in 3rd Quarter FY 2016. This contract has a two-year base and four single-year option periods to provide the additional capabilities for Versions 3, 4 and beyond. The contract was awarded to Cole Engineering and Science, Inc. (CESI) to provide for the development, fielding and training of each version capability for the designated Basis of Issue Plan (BOIP) sites and provide Post-Deployment Software

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Support (PDSS) for all currently fielded versions. In FY 2021, the program will commence competitive action to award the LVC-IA contract in the 2nd Quarter FY 2022; this follow-on award will continue concurrency effort through program completion slated for FY2035.

4. In FY 2023, FASIT will incrementally fund the Small Business Innovative Research Phase III contract for the development of the NCAST capabilities.

5. In FY 2023, the Digital Range Training System (DRTS) will continue the funding under the Delivery Order (established in FY 2022) under the Life Cycle Product-line Management (LCPM) IDIQ contract, which will finalize the development and testing of the target Technical Data Package (TDP).

6. In FY 2023, Instrumentable-Multiple Integrated Laser Engagement System (I-MILES) will leverage the General Dynamics contract vehicle and competitive OTA approaches to address EUL / relevancy challenges as product lines reach those trigger points in their life cycle or changes to weapon system configurations drive those actions. By FY23 three of the five I-MILES product lines will be at end of useful live. These efforts will enable a wide range of industry partners to integrate LTEC/LPAN into existing systems and execute Tech Refresh activities as required until Live STE capabilities are introduced.

8. In FY 2021, Home Station Instrumentation Training System (HITS) awarded a new delivery order on the General Dynamics contract.

9. In FY 2022, OPFOR Integrated Air Defense System (IADS) will start development of weapon processor software, integration with the training instrumentation systems at the Combat Training Centers (CTCs), and validate the solution through testing.

10. UAS Swarm will continue to provide the U.S. Army Combined Training Centers with UAS Swarm support utilizing the existing Aviation and Missile Technology Consortium OTA.

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Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
OneTESS Program Management	Various	PEO STRI : Orlando, FL	8.046	-		-		-		-		-	0.000	8.046	8.046
OneTESS Program Management	Various	PEO STRI, : Orlando, FL	2.040	-		-		-		-		-	0.000	2.040	2.040
HITS Program Management	Various	PEO STRI : Orlando, FL	1.348	-		-		-		-		-	0.000	1.348	1.348
CTC-IS Program Management	Various	PEO STRI : Orlando, FL	9.018	-		-		-		-		-	0.000	9.018	9.018
MSTC Program Management	Various	PEO STRI : Orlando, FL	0.952	-		-		-		-		-	0.000	0.952	0.952
I-MILES Program Management	Various	PEO STRI : Orlando, FL	0.511	-		-		-		-		-	0.000	0.511	0.511
EST Program Management	Various	PEO STRI : Orlando, FL	0.214	-		-		-		-		-	0.000	0.214	0.214
LVC-IA Program Management	Various	PEO STRI : Orlando, FL	11.027	0.153	Nov 2020	0.225	Nov 2021	0.243	Nov 2022	-		0.243	Continuing	Continuing	Continuing
Target Modernization	Various	PEO STRI : Orlando, FL	0.614	-		-		-		-		-	0.000	0.614	0.614
ETC-IS Program Management	Various	PEO STRI : Orlando, FL	0.164	-		-		-		-		-	0.000	0.164	0.164
CTIA	Various	PEO STRI : ORLANDO, FL	0.876	-		-		-		-		-	0.000	0.876	0.876
Soldier Fitness Program	TBD	Mulitple : Various	2.100	-		-		-		-		-	0.000	2.100	2.100
Suicide Prevention	TBD	Multiple : Various	4.313	-		-		-		-		-	0.000	4.313	4.313
SVT Program Management	Various	PEO STRI : Orlando, FL	0.049	-		-		-		-		-	0.000	0.049	0.049
OPFOR Integrated Air Defense System (IADS) Program Management	Various	PEO STRI : Orlando, FL	0.742	-		-		-		-		-	0.000	0.742	0.742
Congressional Add for Combined Arms Center	Various	PEO STRI : Huntsville, AL	0.177	-		-		-		-		-	0.000	0.177	0.177

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Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Threat Integrated Air Defense System															
SBIR/STTR	TBD	Various : Various	-	-		0.969		-		-		-	0.000	0.969	-
		Subtotal	42.191	0.153		1.194		0.243		-		0.243	Continuing	Continuing	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
I-MILES	Option/ IDIQ	General Dynamics Mission Systems : Orlando, FL	2.785	2.700	Mar 2021	2.714	Dec 2021	3.041	Dec 2022	-		3.041	Continuing	Continuing	Continuing
I-MILES RELEVANCY	SS/IDIQ	Lockheed Martin : Orlando, FL	5.137	-		-		-		-		-	0.000	5.137	5.137
HITS	C/FFP	Riptide : Orlando, FL	1.379	-		-		-		-		-	0.000	1.379	1.379
HITS	C/IDIQ	General Dynamics Mission Systems : Orlando, FL 32826	6.436	1.180	Jul 2021	-		-		-		-	0.000	7.616	7.616
HITS	Option/ IDIQ	General Dynamics Mission Systems (GDMS) : Orlando, FL 32826	4.212	0.630	Jan 2021	3.995	Mar 2022	1.679	Mar 2023	-		1.679	Continuing	Continuing	Continuing
MSTC Development	C/FP	Multiple : Various	5.601	0.432	Jul 2021	0.484	Jul 2022	1.209	Mar 2023	-		1.209	Continuing	Continuing	Continuing
LVC-IA Development	C/CPFF	Cole Engineering Services, Inc : Orlando, FL	29.822	-		-		-		-		-	0.000	29.822	29.822
LVC-IA Enhanced Capability	C/CPFF	Cole Engineering Services, Inc (CESI) : Orlando, FL	5.706	-		-		-		-		-	0.000	5.706	5.706
LVC-IA Enhanced Capability	Option/ CPFF	Cole Engineering Services, Inc (CESI) : Orlando, FL	13.563	4.345	Nov 2020	-		-		-		-	0.000	17.908	18.569

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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
LVC-IA Follow-On Contract	C/TBD	TBD : TBD	-	-		2.514	Apr 2022	2.723	Apr 2023	-		2.723	Continuing	Continuing	Continuing
OneTESS	SS/CPFF	General Dynamics C4 Systems : Orlando, FL 32826	10.430	-		-		-		-		-	0.000	10.430	10.430
EST Development	C/FP	Cubic Simulation Systems, Inc. : Orlando, FL 32809-3813	1.528	-		-		-		-		-	0.000	1.528	1.528
OneTESS	SS/CPFF	General Dynamics : Fairfax, VA	124.769	-		-		-		-		-	0.000	124.769	124.769
CTIA	C/CPFF	General Dynamics Mission Systems, Inc (GDMS) : Orlando, FL	2.420	2.417	Jan 2021	2.453	Jan 2022	2.699	Jan 2023	-		2.699	Continuing	Continuing	Continuing
Target Modernization	SS/CPFF	Digital Solid State Propulsion, Inc. : Reno, NV	-	2.163	Feb 2021	-		-		-		-	0.000	2.163	2.163
CTC-IS	C/IDIQ	General Dynamics Mission Systems : Orlando, Fl	45.105	1.573	Mar 2021	0.541	May 2022	2.680	May 2023	-		2.680	Continuing	Continuing	Continuing
Target Modernization	SS/CPFF	SensorMetrix : San Diego, CA	1.989	1.487	Jan 2021	-		-		-		-	0.000	3.476	3.476
EST Enhanced Capabilities	C/FFP	Meggitt Training Systems, Inc. : Suwanee, GA 30024-1247	2.075	-		-		-		-		-	0.000	2.075	2.075
EST	C/FP	Nova Technologies : Panama City, FL 32404-6747	0.609	-		-		-		-		-	0.000	0.609	0.609
CTC IS	Option/ IDIQ	GENERAL DYMAMICS ONE SOURCE : ORLANDO, FL	-	-		1.806	Feb 2022	-		-		-	Continuing	Continuing	Continuing

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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Target Modernization	C/CPFF	JRM Technologies : Orlando	1.149	-		-		-		-		-	0.000	1.149	1.149
Future Army System of Integrated Targets (FASIT) Battlefield Effects Devices	C/CPFF	General Dynamics One Source, LLC : Fairfax, VA	-	-		1.914	Feb 2022	-		-		-	Continuing	Continuing	Continuing
Future Army System of Integrated Targets (FASIT) Dynamic Infrared Projection	SS/CPFF	JRM Technologies : Orlando, FL	-	-		1.600	Jan 2022	-		-		-	Continuing	Continuing	Continuing
Future Army System of Integrated Targets (FASIT) Non-Pyro Effects	SS/CPFF	Digital Solid State Propulsion, Inc. : Reno, NV	-	-		2.122	Feb 2022	-		-		-	Continuing	Continuing	Continuing
Future Army Systems of Integrated Targets (FASIT) Non-Contact Area Scoring Technology	SS/TBD	TBD : TBD	-	-		-		1.290	Jan 2023	-		1.290	0.000	1.290	-
Digital Range Training System (DRTS)	C/CPFF	General Dynamics Mission Systems : Orlando, FL	3.071	-		-		-		-		-	0.000	3.071	3.071
Digital Range Training System (DRTS)	Option/ CPFF	General Dynamics One Source, LLC : Fairfax, VA	-	1.445	Jan 2021	1.139	Jan 2022	1.036	Jan 2023	-		1.036	Continuing	Continuing	Continuing
OPFOR Integrated Air Defense System (IADS)	MIPR	PEO IEWS, PM Aircraft Survivability Equipment (ASE) : Huntsville, AL	21.371	-		-		-		-		-	0.000	21.371	21.371
OPFOR Integrated Air Defense System (IADS)	MIPR	Target Systems Management Office, PEO STRI, PEO STRI : Huntsville, AL	0.915	-		-		-		-		-	0.000	0.915	0.915
OPFOR Integrated Air Defense System (IADS) MANPADS	TBD	TBS : Orlando, FL	-	-		0.554	Dec 2021	-		-		-	Continuing	Continuing	Continuing

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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Radar Signal Emulator Development for IADS	C/TBD	To Be Determined : Orlando, FL	9.520	-		-		-		-		-	0.000	9.520	9.520
OPFOR Surrogate Wheeled Vehicles (OSWV)	IA	Tank Automotive Research Development and Engineering Center : Warren, MI	6.343	-		-		-		-		-	0.000	6.343	6.343
Unmanned Aerial System Swarm	Option/ CPFF	Colsa : Huntsville, AL	-	-		0.999	Apr 2022	1.202	Jan 2023	-		1.202	Continuing	Continuing	Continuing
Congressional Add for Radio Frequency Emitters	C/TBD	ACC, Orlando : Orlando, Florida	3.500	-		-		-		-		-	0.000	3.500	3.500
EST Enhanced Capabilities Adaptive Marksmanship and Intelligent Tutoring	C/FFP	Dignitas Technologies : Orlando, FL 32817	0.776	-		-		-		-		-	0.000	0.776	0.776
Integrated Military Operations in Urban Terrain (MOUT) Training System (IMTS)	C/CPFF	General Dynamcis Mission Systems : Orlando, FL	0.958	-		-		-		-		-	0.000	0.958	0.958
Congressional Add for Combined Arms Center Threat Integrated Air Defense System	C/CPFF	Scientific Research Corporation : Huntsville, AL	9.823	-		-		-		-		-	0.000	9.823	9.823
Combat Training Center Live Fire Modernization (CTC Live Fire Mod)	C/CPFF	General Dynamics One Source, LLC : Fairfax, VA	-	2.409	Feb 2021	-		-		-		-	0.000	2.409	2.409
ETC-IS	SS/CPFF	General Dynamics C4 Systems : Orlando, FL 32826	4.836	-		-		-		-		-	0.000	4.836	4.836
CTIA	Option/ IDIQ	General Dynamics Mission Systems : Orlando, FL	20.808	-		-		-		-		-	0.000	20.808	20.808

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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Target Modernization	C/IDIQ	Pratt and Miller Engineering : Orlando, FL	6.600	-		-		-		-		-	0.000	6.600	6.600
CTC-IS	C/IDIQ	GENERAL DYMAMICS ONE SOURCE : Orlando, FL	6.007	1.813	Aug 2021	1.397	Oct 2021	-		-		-	Continuing	Continuing	Continuing
Target Modernization	Option/ CPFF	Pratt and Miller Engineering (P&M) : Orlando, FL	4.714	-		-		-		-		-	0.000	4.714	4.714
CFFT Enhanced Joint Fires Observer (JFO) Training and Certification Requirements	C/IDIQ	Nova Technologies : Panama City, FL 32404-6747	1.242	-		-		-		-		-	0.000	1.242	1.242
Congressional Add Center of Excellence for Military Operations in Urban Terrain and Cultural Trn	C/FP	Multiple : Various	2.996	-		-		-		-		-	0.000	2.996	2.996
Soldier/Squad Virtual Trainer (S/SVT) Program	C/CR	OTA - CUBIC and MEGGITT : Orlando, FL	5.534	-		-		-		-		-	0.000	5.534	5.534
Basic Electronics Maintenance Trainer (BEMT)	SS/FFP	Nida Corp : Melbourne, FL	0.173	0.229	Nov 2020	0.295	Nov 2021	-		-		-	0.000	0.697	0.708
OPFOR Attack Aircraft Shoot-back Capability	C/TBD	TBS : Orlando, FL	-	0.194	Mar 2021	-		-		-		-	0.000	0.194	0.194
		Subtotal	373.902	23.017		24.527		17.559		-		17.559	Continuing	Continuing	N/A

Remarks

1. The Instrumentable-Multiple Integrated Laser Engagement System (I-MILES) - FY 2022 is the final phase of the LTEC integration into VTESS and TVS. Consequently the effort is ramping down in terms of burn rate per month from FY 2021.
2. The LVC-IA program plans to award its follow-on contract in the 3rd quarter of FY 2022. This follow-on award will continues their concurrency efforts with the Synthetic Training Environment (STE) and Mission Command Information Systems (MCIS) through program completion slated for FY 2035.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604715A / *Non-System Training Devices - Eng Dev*	Project (Number/Name) 241 / *Nstd Combined Arms*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CTIA	Various	Various : Various	12.844	-		-		-		-		-	0.000	12.844	12.844
OneTESS	Various	Various : Orlando, FL	6.596	-		-		-		-		-	0.000	6.596	6.596
OneTESS	Various	Various : Various	0.262	-		-		-		-		-	0.000	0.262	0.262
Target Modernization	Various	Various : Various	0.192	-		-		-		-		-	0.000	0.192	0.192
		Subtotal	19.894	-		-		-		-		-	0.000	19.894	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
OneTESS Development & Test	Various	Multiple : Orlando, FL	4.162	-		-		-		-		-	0.000	4.162	4.162
OneTESS Test Support	Various	Multiple : Orlando, FL	1.280	-		-		-		-		-	0.000	1.280	1.280
HITS	Various	Various : Orlando, FL	0.740	-		-		-		-		-	0.000	0.740	0.740
LVC-IA Test Support	Various	Multiple : Orlando, FL	12.363	1.277	Nov 2020	0.631	Nov 2021	0.638	Nov 2022	-		0.638	Continuing	Continuing	Continuing
IEDES	Various	Multiple : Orlando, FL	0.519	-		-		-		-		-	0.000	0.519	0.519
OPFOR Integrated Air Defense System (IADS)	SS/CPFF	Inter-Coastal Electronics, Inc. : Mesa, AZ	6.120	2.566	Mar 2021	-		-		-		-	0.000	8.686	8.686
I-MILES EPG Testing	MIPR	ATEC : FT Huachuca, AZ	0.162	-		0.162	Mar 2022	0.160	Mar 2023	-		0.160	Continuing	Continuing	Continuing
		Subtotal	25.346	3.843		0.793		0.798		-		0.798	Continuing	Continuing	N/A

	Prior Years	FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	461.333	27.013		26.514		18.600		-		18.600	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604715A / *Non-System Training Devices - Eng Dev*	**Project (Number/Name)** 241 / *Nstd Combined Arms*

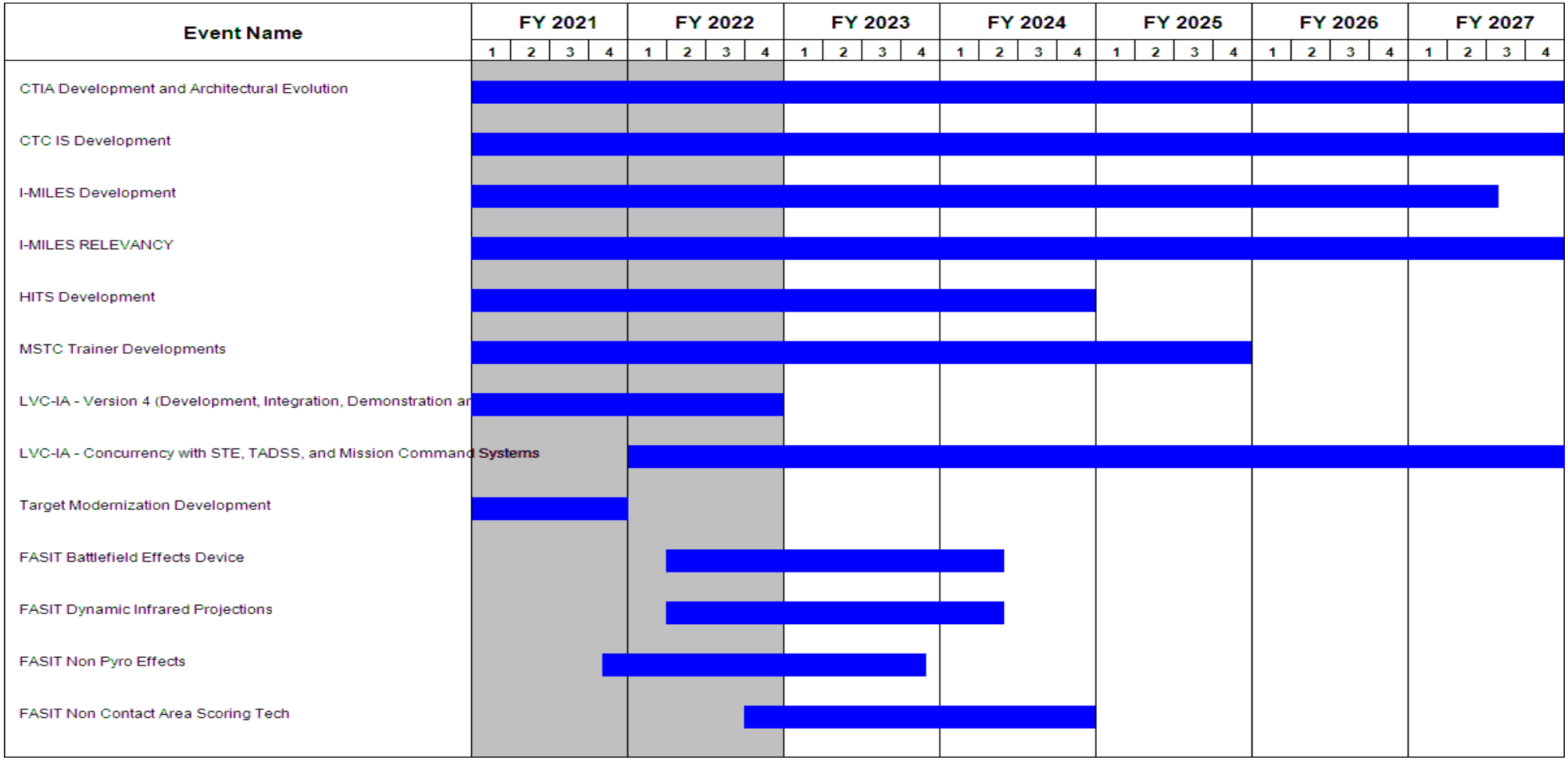

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604715A / *Non-System Training Devices - Eng Dev*	**Project (Number/Name)** 241 / *Nstd Combined Arms*

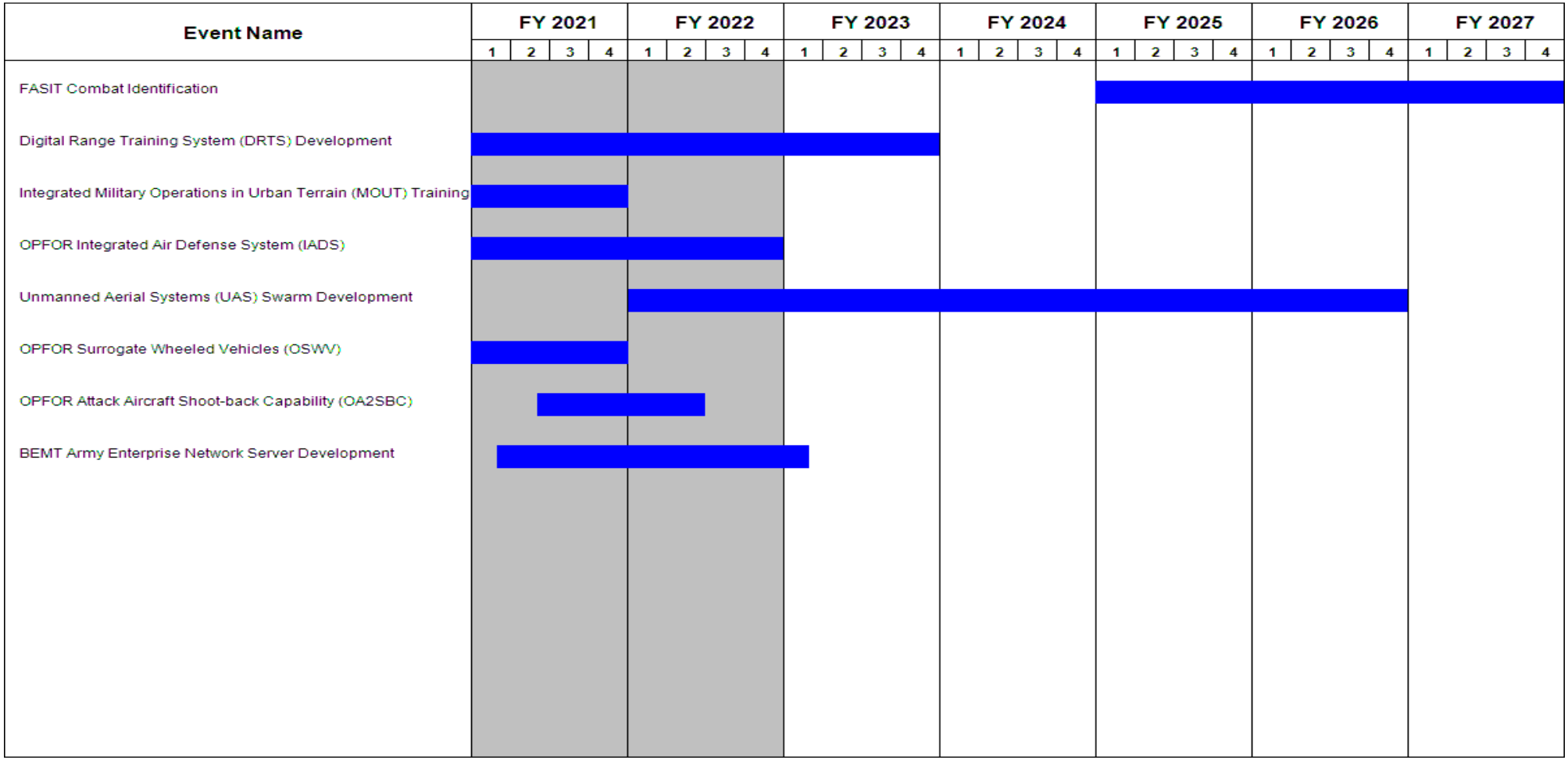

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604715A / *Non-System Training Devices - Eng Dev*	**Project (Number/Name)** 241 / *Nstd Combined Arms*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
CTIA Development and Architectural Evolution	1	2012	4	2027
CTC IS Development	1	2010	4	2027
I-MILES Development	2	2017	3	2027
I-MILES RELEVANCY	2	2018	4	2027
HITS Development	3	2012	4	2024
MSTC Trainer Developments	2	2017	4	2025
LVC-IA - Version 3 (Development, Integration, Demonstration and Testing)	4	2016	3	2018
LVC-IA - Version 4 (Development, Integration, Demonstration and Testing)	4	2018	4	2022
LVC-IA - Concurrency with STE, TADSS, and Mission Command Systems	1	2022	4	2035
Target Modernization Development	1	2016	4	2021
FASIT Battlefield Effects Device	2	2022	2	2024
FASIT Dynamic Infrared Projections	2	2022	2	2024
FASIT Non Pyro Effects	4	2021	4	2023
FASIT Non Contact Area Scoring Tech	4	2022	4	2024
FASIT Combat Identification	1	2025	4	2027
Digital Range Training System (DRTS) Development	2	2018	4	2023
Integrated Military Operations in Urban Terrain (MOUT) Training System (IMTS)	2	2020	4	2021
OPFOR Integrated Air Defense System (IADS)	4	2017	4	2022
Unmanned Aerial Systems (UAS) Swarm Development	1	2022	4	2026
OPFOR Surrogate Wheeled Vehicles (OSWV)	2	2019	4	2021
OPFOR Attack Aircraft Shoot-back Capability (OA2SBC)	2	2021	2	2022
S/SVT - Development	3	2019	3	2020

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604715A / *Non-System Training Devices - Eng Dev*	**Project (Number/Name)** 241 / *Nstd Combined Arms*

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
BEMT Army Enterprise Network Server Development	1	2020	1	2023