Exhibit R-2, RDT&E Budget Item Justification: PB 2020 Army											Date: March 2019	
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 2018**	**FY 2019**	**FY 2020 Base**	**FY 2020 OCO**	**FY 2020 Total**	**FY 2021**	**FY 2022**	**FY 2023**	**FY 2024**	**Cost To Complete**	**Total Cost**
Total Program Element	-	51.900	44.381	27.412	-	27.412	26.349	24.995	18.697	16.806	Continuing	Continuing
241: *Nstd Combined Arms*	-	51.900	44.381	27.412	-	27.412	26.349	24.995	18.697	16.806	Continuing	Continuing

A. Mission Description and Budget Item Justification

Program Element funds development of Non-System Training Devices to support force-on-force 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 at the National Training Center (NTC), Ft. Irwin, CA; Joint Readiness Training Center (JRTC), Ft. Polk, LA, and Joint Multinational Readiness Center (JMRC), formerly the Combat Maneuver Training Center (CMTC), Hohenfels, Germany; 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 2020 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), Digital Range Training System (DRTS), Target Modernization, Medical Simulation Training Center (MSTC), Live, Virtual, Constructive Integrating Architecture (LVC-IA), OPFOR Surrogate Wheeled Vehicles (OSWV), Integrated Military Operations in Urban Terrain (MOUT) Training System (IMTS) new start, and Basic Electronics Maintenance Trainer (BEMT) new start.

FY 2020 funding for Suicide Prevention is realigned to PE 0605013A project FL9.

FY 2020 funding for Soldier/Squad Virtual Trainer Program (S/SVT) is realigned to PE 0604121A, Project SV1.

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B. Program Change Summary ($ in Millions)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Previous President's Budget	43.575	49.436	26.382	-	26.382
Current President's Budget	51.900	44.381	27.412	-	27.412
Total Adjustments	8.325	-5.055	1.030	-	1.030
• Congressional General Reductions	-0.034	-0.055			
• Congressional Directed Reductions	-	-5.000			
• Congressional Rescissions	-	-			
• Congressional Adds	10.000	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.010	-			
• SBIR/STTR Transfer	-1.631	-			
• Adjustments to Budget Years	-	-	1.030	-	1.030

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2018	FY 2019
Project: 241: *Nstd Combined Arms*		
Congressional Add: *Congressional Add for Combined Arms Center Threat Integrated Air Defense System*	10.000	-
Congressional Add Subtotals for Project: 241	10.000	-
Congressional Add Totals for all Projects	10.000	-

Change Summary Explanation

FY 2020 Project 241 funds increased due to the following:

- $1.000 million for Integrated Military Operations in Urban Terrain (MOUT) Training System (IMTS) new start.
- $.181 million for Basic Electronics Maintenance Trainer (BEMT) new start.

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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*	

COST ($ in Millions)	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
241: *Nstd Combined Arms*	-	51.900	44.381	27.412	-	27.412	26.349	24.995	18.697	16.806	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 39th Chief of the Staff of the Army's #1 priority of "Readiness" and the 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 Live Training Engagement Composition (LTEC), increasing simulation by updating the Probability of Kill (Pk) tables for increased training realism and improved integration on new weapon platforms (i.e. Joint Light Tactical Vehicle (JLTV), Armored Multi-Purpose Vehicle (AMPV), Next Generation Combat vehicle, M4A2 plus Rifle and Stryker Engineering Change Proposal (ECP) with 30mm Gun).

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 Department (AMEDD) 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 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 MOS at 24 Active, National Guard, and Army Reserve camps, posts, and stations. Soldiers utilizing the BEMT system receive highly realistic training using scenarios requiring performance of basic electronic tasks in a virtual environment including tests, diagnosis, and repair while saving institutions significant expenses over live training alternatives. The Army identified the need for modernization of electronics maintenance training. Electronics maintenance is a critical skill, directly contributing to the overall Army mission accomplishment.

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: AVCATT, CCTT, GFT, HITS, JLCCTC and SE Core) and Mission Command Systems. The LVC-IA defines "how" information is exchanged among the different LVC domains and the Mission Command 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 FY18, the LVC-IA program began 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 Systems and will continue in FY19 through FY21. FY20 request will continue Version 4 developmental and integration activities (Web-based optimization and Synthetic Training Environment (STE) compatibility), and will continue concurrency with mission command systems.

The Target Modernization program provides a common open architectural framework, standards, specifications, and interfaces for live fire target devices, a common target control system for all range types, and innovative technologies to enhance training realism and reduce life cycle costs on the ranges. The Target Modernization program's primary innovation goals are the development of trackless moving target systems, high fidelity dynamic infrared representations, non-contact ballistic hit detections, advanced human type targets, and augmented reality on live fire ranges; aimed at increasing training realism and lowering life cycle costs.

The Integrated Military Operations in Urban Terrain (MOUT) Training System (IMTS) program fields the Combined Arms Collective Training Facility (CACTF), the Collective Training Facility (CTF), Live Fire Shoot House (LFSH), and the Urban Assault Course (UAC). The IMTS training systems provide instrumentation to enable training and After Action Review (AAR) of Soldier training exercises up to the battalion level combined training for the Active and Reserve Component Army. The

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CACTF, CTF, and LFSH enable training and AAR under daylight and night vision environments for units training in urban areas, underground environments, and the approaches to these areas.

The Army identified an operational gap in the training strategy for the OPFOR Integrated Air Defense System (IADS). It is a collection of enemy 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).

The Digital Range Training System (DRTS) provides new and modern ranges capable of training, evaluating and stressing Soldiers and their modern equipment in a realistic train-as-you-fight environment. The system consists of four standard training ranges: Digital Multi-Purpose Range Complex (DMPRC), Digital Multi-Purpose Training Range (DMPTR), Battle Area Complex (BAX) and Digital Air Ground Integration Range (DAGIR) which utilize all available combat systems capabilities, and digitally integrate them to manage all forces undergoing individual and collective live-fire training and qualification. These training systems replicate realistic threat systems, challenge Soldiers, and provide enhanced training data collection and After Action Review (AAR) capabilities. The system provides accurate gunnery qualification information to the training units as well as integrates multiple ranges and training environments.

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.

FY 2020 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), Digital Range Training System (DRTS), Target Modernization, Medical Simulation Training Center (MSTC), Live, Virtual, Constructive Integrating Architecture (LVC-IA), OPFOR Surrogate Wheeled Vehicles (OSWV), Integrated Military Operations in Urban Terrain (MOUT) Training System (IMTS) new start, and Basic Electronics Maintenance Trainer (BEMT) new start.

FY 2020 funding for Suicide Prevention is realigned to PE 0605013A project FL9.

FY 2020 funding for Soldier/Squad Virtual Trainer Program (S/SVT) is realigned to PE 0604121A, Project SV1.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Title: Engineering and Manufacturing Development (EMD) phase contract activity for the Common Training Instrumentation Architecture (CTIA) program.	2.835	1.876	2.527	-	2.527

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Description: Continue EMD phase contract activities for the CTIA program to provide common architecture capabilities. ***FY 2019 Plans:*** 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 the Live, Virtual, Constructive-Integrated Training Environment interoperability initiatives. ***FY 2020 Base Plans:*** 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 the Live, Virtual, Constructive-Integrated Training Environment interoperability initiatives. ***FY 2019 to FY 2020 Increase/Decrease Statement:*** It appears that there is an increase in FY2020, but this is due to the FY2019 Congressional reduction of $5 million to 0604715A, Project 241 for historical under execution which impacted multiple programs in this project.					
Title: Government Program Management for the Common Training Instrumentation Architecture (CTIA) program. ***Description:*** Government Program Management for the CTIA program.	0.236	-	-	-	-
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 2019 Plans:***	3.362	3.516	4.270	-	4.270

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
FY 2019 Base RDTE dollars in the amount of $1.670 million will fund the Life Cycle Management (LCM) of Live Training Family of Systems, developing the architecture framework for future Life Cycle Efforts for the Hardware Product Line Framework. FY 2019 Base RDTE dollars in the amount of $1.073 million will fund post deployment software support to pursue changes to current software to stimulate sensors, replicate counter measures that US forces will use against small Unmanned Aerial Systems (UAS), support selective jamming of GPS without impacting the instrumentation use of GPS, and selectively jam radars such as support for suppression of enemy Air Defense Artillery. FY 2019 Base RDTE dollars in the amount of $.773 will fund the 2D Mapping Effort development, testing and integration, and deployment of CTIA4, 2D map product using NASA WWW map to replace Falconview that uses CTIA 3 services, providing minimal capabilities and a software baseline for a CTC to produce an AAR. ***FY 2020 Base Plans:*** FY 2020 Base RDTE dollars in the amount of $.427 million will fund post deployment software support to reintegrate CBRNE (Chemical, Biological, Radiological, Nuclear and Explosives) training at the CTCs. The effort will integrate the Joint Effects Model into the CTC-IS. The effort will use the Army's Integrated Sensor Architecture that will stimulate CBRNE sensors. The results will be available in the CTC-IS for After Action Review (AAR). FY 2020 Base RDTE dollars in the amount of $1.677 million will fund the Life Cycle Management (LCM) of Live Training Family of Systems, developing the architecture framework for future Life Cycle Efforts for the Hardware Product Line Framework. FY 2020 Base RDTE dollars in the amount of $.666 will fund an analysis of NTC Western Training Area (WTA) to provide information to determine path forward to expanded coverage area. FY 2020 Base RDTE dollars in the amount of $1.500 will fund the SINCGARS replacement study; identify alternate means to collect tactical voice communications at the Combat Training Centers, utilized for ARR purposes, study is intended to identify alternate solutions which are cheaper to purchase and easier to maintain providing life-cycle cost saving across the CTC. ***FY 2019 to FY 2020 Increase/Decrease Statement:***					

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
FY 2020 increase is due to the new RDTE requirements to complete an analysis of NTC Western Training Area (WTA) and the SINCGARS replacement study.					
Title: Government Program Management for the Combat Training Center Instrumentation System (CTC-IS) program. ***Description:*** Government Program Management for the CTC IS program.	1.257	-	-	-	-
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 2019 Plans:*** RDTE funding will continue our efforts in analyzing, developing, testing, and implementing the Live Training Engagement Composition (LTEC). LTEC supports integration of the Tactical Engagement Simulation (TES) Componentized Architecture into existing and new I-MILES capabilities to improve training realism during Force on Force (FoF) training increasing performance and reducing overall lifecycle costs. RDTE supports the ability to provide Technical Refreshment for Tactical Vehicle System (TVS) and Combat Vehicle Tactical Engagement Simulation System (CVTESS) vehicle Software Updates, to include LTEC Pk updates. Requirements exist to continue Implementation integration into vehicle weapon platforms and vehicular Integration for Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance/Electronic Warfare (C4ISR/EW) Interoperability to include the (VICTORY) Architecture while maintaining relevancy into emerging Weapon Systems: (Joint Light Tactical Vehicle (JLTV), Armored Multi-Purpose Vehicle (AMPV), Abrams, Bradley and small arms platform. ***FY 2020 Base Plans:*** 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 2019 to FY 2020 Increase/Decrease Statement:*** It appears that there is an increase in FY2020, but this is due to the FY2019 Congressional reduction of $5 million to 0604715A, Project 241 for historical under execution which impacted multiple programs in this project.	2.611	1.751	2.631	-	2.631
Title: Government Program Management for the Instrumentable-Multiple Integrated Laser Engagement System (I-MILES) Program.	0.207	-	-	-	-

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Description: Government Program Management for the I-MILES program.					
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 2019 Plans:*** Continued integration and testing of the interface between HITS and the latest versions of the Live, Virtual and Constructive Integrating Architecture (LVC-IA), which ensures continued interoperability with other simulation system for combined arms, collective training. Additionally, will improve HITS Exercise Planning and Scenario Development to assist the unit leader in being able to rapidly, readily and easily conduct exercise planning and scenario development through cloud based technologies for on demand and at point-of-need access. The cloud based access allows the unit leader to prepare for the training of over 1,000 Soldiers and vehicles before arriving at the site of training with HITS. ***FY 2020 Base Plans:*** HITS will begin US Army aviation vehicle integration with Home Station instrumentation to provide comprehensive training engagements between ground and air forces. Efforts will add aviation specific interfaces, visual indicators, and required messaging for HITS and Live, Virtual and Constructive Integrating Architecture (LVC-IA) interoperability. LVC-IA and HITS encompass simulated combined arms, collective training. This will create a cloud based HITS After Action Review capability so that distributed unit leaders can readily have on demand and point-of-need access. The cloud based access will allow the unit leader to reinforce training of over 1,000 Soldiers after training with HITS. ***FY 2019 to FY 2020 Increase/Decrease Statement:*** FY 2020 increase is due to the new HITS aviation requirement.	1.646	0.725	3.640	-	3.640
Title: Government Program Management for the Home Station Instrumentation System (HITS) program. ***Description:*** Government Program Management for the Home Station Instrumentation System (HITS) program.	0.241	-	-	-	-
Title: Engineering and Manufacturing Development (EMD) phase contract activity for the Medical Simulation Training Center (MSTC). ***Description:*** EMD phase contract activities for the MSTC program.	0.200	-	0.682	-	0.682

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
FY 2020 Base Plans: Complete enhancement of the Instructor Support System (ISS) by improving the combat training environments to enhance the Soldier's training experience through more realistic training scenarios. ***FY 2019 to FY 2020 Increase/Decrease Statement:*** It appears that there is an increase in FY2020, but this is due to the FY2019 Congressional reduction of $5 million to 0604715A, Project 241 for historical under execution which impacted multiple programs in this project.					
Title: Government Program Management for the Medical Simulation Training Center (MSTC) program. ***Description:*** Government Program Management for the MSTC program.	0.153	-	-	-	-
Title: Soldier/Squad Virtual Trainer Program (S/SVT) Engineering, Support, Test & Evaluation ***Description:*** Engineering, support, and any related test and evaluation for the development of the S/SVT Program. ***FY 2019 Plans:*** Develops and demonstrates prototype designs to reduce technical risk, validates designs, validates cost estimates, evaluates processes, and refines requirements. Based on refined requirements and demonstrated prototype designs in User Assessments, integrated system design of the end-item system can be initiated. ***FY 2019 to FY 2020 Increase/Decrease Statement:*** FY 2020 funding for Soldier/Squad Virtual Trainer Program (S/SVT) is realigned to PE 0604121A, Project SV1.	-	5.534	-	-	-
Title: Government Program Management for the Soldier Virtual Trainer Program (SVT) ***Description:*** Government program management for SVT (New start in FY 2018).	0.049	-	-	-	-
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 2019 Plans:*** Live, Virtual, and Constructive-Integrating Architecture (LVC-IA) program continues system development, integration and demonstration of the LVC-IA Version 4 capability which includes the developmental activities	2.762	2.774	3.616	-	3.616

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
for Web-based optimization; inclusion of new simulations to the architecture; and concurrency with core system TADSS and Army Mission Command Systems. ***FY 2020 Base Plans:*** Live, Virtual, and Constructive-Integrating Architecture (LVC-IA) program will continue 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 Systems. ***FY 2019 to FY 2020 Increase/Decrease Statement:*** Increase in FY 2020 is for developmental activities associated with Synthetic Training Environment (STE) compatibility.					
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 2019 Plans:*** LVC-IA will perform Federation Integration and System Measurement of Performance (SMP) events. Additionally, LVC-IA will continue integration testing and evaluation activities in support of LVC-IA interoperability with TADSS and other Mission Command Systems. ***FY 2020 Base Plans:*** LVC-IA will continue Federation Integration and System Measurement of Performance (SMP) events, and commence 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 Systems. ***FY 2019 to FY 2020 Increase/Decrease Statement:*** Decrease in FY 2020 due to the number of Federation Integration events supporting Version 4 testing being conducted in FY20.	2.113	1.619	1.219	-	1.219
Title: Government Program Management for the Live, Virtual, Constructive Integrating Architecture (LVC-IA) Program. ***Description:*** Government Program Management for the LVC-IA Program.	1.679	0.399	0.251	-	0.251

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
FY 2019 Plans: Provides program management, engineering and technical oversight, contract support, and travel for the LVC-IA Program. ***FY 2020 Base Plans:*** Will provide program management, engineering and technical oversight, contract support, and travel for the LVC-IA Program. ***FY 2019 to FY 2020 Increase/Decrease Statement:*** Decrease in FY 2020 is due to a shift in the level of effort required for on-going Version 4 development activities.					
Title: Engineering and Manufacturing Development (EMD) phase contract activity for the Target Modernization program. ***Description:*** EMD phase contract activities for the Target Modernization program. The Target Modernization program will initiate an EMD contract for the finalization of the Trackless Moving Target Infantry variant, as a lead into the Low-Rate Initial Production for both the Vehicle and Infantry variants for the TMT program. ***FY 2019 Plans:*** RDTE of $.507 million provides for the design, development, and testing of the Trackless Moving Target - Vehicle (TMT-V) platform system. The TMT-V effort will design and prototype an inexpensive trackless vehicle/ armor moving type target that can be utilized on unimproved terrain. The TMT-V is capable of replicating behaviors based on training doctrine, skills, readiness and style of learning to enhance realism and feedback for the trainee. RDTE of $1.149 million provides for the design and development of the Dynamic Infrared Projection (DIRP) system. The DIRP system will provide for an inexpensive and ruggedized infrared projection system that can be utilized to create accurate real-time dynamic thermal representations on target silhouettes or other mediums based on training doctrine within the various live and virtual training applications to enhance realism and feedback for the trainee. The DIRP system technology would support the creation of a high fidelity, time and posture based, thermal replication system for live fire target systems. Current solutions are heating pads adhered to the target silhouette. The shapes are not accurate, get damaged with live fire engagements, and create thermal bleeding; the shapes are static with respect to time, and do not support changes in thermal intensity over time, movement or posture changes. The DIRP solution will remove the threat signature thermal generation from the line of fire (damage), and support the recognition of combat vehicles with high resolution	2.152	1.656	2.077	-	2.077

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
imaging. The thermal images will support time or movement based increases in temperature, and enhanced thermal representation (muzzle flash, burning vehicle), resulting in enhanced training realism. The FY19 efforts include conducting a domain analysis, completing the detail design, and image modeling and development. ***FY 2020 Base Plans:*** RDTE of $2.077 million provides for the incremental funding of the Non-Contact Hit Sensor (NCHS) research and development. FY2020 should see the development and field testing of the NCHS prototype system. Funding will also initiate the Phase III SBIR contract for the Dynamic Infrared Projection Systems. The DIRP system will provide for an inexpensive and ruggedized infrared projection system that can be utilized to create accurate real-time dynamic thermal representations on target silhouettes or other mediums based on training doctrine within the various live and virtual training applications to enhance realism and feedback for the trainee. The DIRP system technology would support the creation of a high fidelity, time and posture based, thermal replication system for live fire target systems. Current solutions are heating pads adhered to the target silhouette. The shapes are not accurate, get damaged with live fire engagements, and create thermal bleeding; the shapes are static with respect to time, and do not support changes in thermal intensity over time, movement or posture changes. The DIRP solution will remove the threat signature thermal generation from the line of fire (damage), and support the recognition of combat vehicles with high resolution imaging. The thermal images will support time or movement based increases in temperature, and enhanced thermal representation (muzzle flash, burning vehicle), resulting in enhanced training realism. ***FY 2019 to FY 2020 Increase/Decrease Statement:*** It appears that there is an increase in FY2020, but this is due to the FY2019 Congressional reduction of $5 million to 0604715A, Project 241 for historical under execution which impacted multiple programs in this project.					
Title: Engineering and Manufacturing Development (EMD) phase contract activity for the Digital Range Training System (DRTS) ***Description:*** Conduct research into the development of an Army Data Center "cloud" migration strategy to assist in understanding the risks and technical challenges associated with taking software that is run at numerous (24) DRTS standalone sites, connecting them to communications infrastructure, and managing the software and cybersecurity aspects through shared Information Technology (IT). ***FY 2020 Base Plans:*** RDTE of $1.600 million begins investigating the cybersecurity aspects of utilizing an Army Data Center to centrally manage the DRTS software by examining current DoD policy, exploring commercial applications	1.539	-	1.600	-	1.600

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
of cybersecurity, and developing the Risk Management Framework implementation plan. DRTS will also investigate the implementation approach for migrating software capabilities from each of the ranges into the cloud while still providing uninterrupted training capability locally on the range should the cloud linkage be interrupted. This will allow for prototyping the DRTS software utilizing a "local" cloud environment at the Fort Benning Digital Multipurpose Range Complex (DMPRC) as the initial step in the overall DRTS migration strategy. This includes an investigation of OT requirements to operate DRTS and other training systems software on a consolidated set of IT hardware. ***FY 2019 to FY 2020 Increase/Decrease Statement:*** FY2020 increase is due to the new Cloud RDTE requirement.					
Title: Engineering and Manufacturing Development (EMD) phase contract activity for Integrated Military Operations in Urban Terrain (MOUT) Training System (IMTS) ***Description:*** Conduct research into the development of an Army Data Center "cloud" migration strategy to assist in understanding the risks and technical challenges associated with taking software that is run at numerous (70+) IMTS standalone sites, connecting them to communications infrastructure, and managing the software and cybersecurity aspects through shared Information Technology (IT). ***FY 2020 Base Plans:*** RDTE of $1.000 million will prototype the Integrated Military Operations in Urban Terrain (MOUT) Training System (IMTS) software utilizing a "local" cloud environment at the Fort Benning CACTF as the initial step in the overall IMTS migration strategy. This includes an investigation of OT requirements to operate IMTS and other training systems software on a consolidated set of IT hardware. ***FY 2019 to FY 2020 Increase/Decrease Statement:*** This is a new start in FY 2020.	-	-	1.000	-	1.000
Title: Engineering and Manufacturing Development (EMD) phase contract activity for OPFOR Surrogate Wheeled Vehicles (OSWV) ***Description:*** EMD phase contract activities for the OSWV program. ***FY 2019 Plans:***	-	2.783	3.718	-	3.718

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
RDTE Funding will assist in technical vehicle studies, engineering, prototype design, technical integration, first article tests and integration tests of the Visual Modifications to the Tactical Vehicles. This is the first year of RDTE for the OSWV program. ***FY 2020 Base Plans:*** RDTE Funding will continue to assist in the first article of testing for tactical vehicles, tactical vehicle engineering design and visual modification. Funding will also allow for the modification and testing of technical vehicles. ***FY 2019 to FY 2020 Increase/Decrease Statement:*** It appears that there is an increase in FY2020, but this is due to the FY2019 Congressional reduction of $5 million to 0604715A, Project 241 for historical under execution which impacted multiple programs in this project.					
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 2019 Plans:*** RDTE funding will support the continuing development, integration, test and evaluation of the IADS embedded software to model the Aircraft Survivability Equipment (ASE) and stimulate the helicopter display to inform pilots of opposing threats, and for the Ground Threat Emitter (GTE) to simulate Threat air defense weapons. Modification efforts will also integrate the software into the Combat Training Centers (CTC) Instrumentation System (IS) to support force on force collective training exercises. ***FY 2019 to FY 2020 Increase/Decrease Statement:*** FY 2019 is the last year of RDTE funding.	15.319	8.275	-	-	-
Title: Radar Signal Emulator Development for Integrated Air Defense Systems (IADS) ***Description:*** Radar Signal Emulator Development for Integrated Air Defense Systems (IADS) ***FY 2019 Plans:*** Engineering and development of a dedicated SAM/HIMAD threat solution for the Combat Training Center (CTCs), supporting multiple threat configurations. This funding will develop four Radar Signal Emulators (RSEs) fully integrated with CTC Instrumentation System (IS) providing a fielded capability for replicating an enemy	-	9.520	-	-	-

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
multi-layered, short-range, medium and high altitude air-defense system to execute unified land operations against a current and projected peer/near peer threat in accordance with current and emerging doctrine. ***FY 2019 to FY 2020 Increase/Decrease Statement:*** FY 2019 is the last year of RDTE funding.					
Title: Government Program Management for the OPFOR Integrated Air Defense System (IADS) Program ***Description:*** Government Program Management for the OPFOR Integrated Air Defense System (IADS) Program	0.554	-	-	-	-
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 2020 Base Plans:*** Enhancement of the Learning Management System courseware and Army Enterprise server capability. ***FY 2019 to FY 2020 Increase/Decrease Statement:*** This is a new start in FY 2020. - Increase of $.181 million dollars in FY 2020 for Development of Army Enterprise Network Server Courseware.	-	-	0.181	-	0.181
Title: Suicide Prevention Program ***Description:*** Suicide Prevention Program FY 2020 funding for Suicide Prevention is realigned to PE 0605013A project FL9. ***FY 2019 Plans:*** Dollars belong to the Suicide Prevention Program. ***FY 2019 to FY 2020 Increase/Decrease Statement:***	2.139	2.174	-	-	-

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
FY 2020 funding for Suicide Prevention is realigned to PE 0605013A project FL9.					
Title: Soldier Fitness Program ***Description:*** Dollars belong to the Soldier Fitness Program.	0.846	-	-	-	-
Title: FY19 SBIR/STTR Transfer ***Description:*** Small Business Innovation Research (SBIR) / Small Business Technology Transfer (STTR) ***FY 2019 Plans:*** FY19 SBIR/STTR Transfer ***FY 2019 to FY 2020 Increase/Decrease Statement:*** FY19 SBIR/STTR Transfer	-	1.779	-	-	-
Accomplishments/Planned Programs Subtotals	41.900	44.381	27.412	-	27.412

	FY 2018	FY 2019
Congressional Add: Congressional Add for Combined Arms Center Threat Integrated Air Defense System	10.000	-
FY 2018 Accomplishments: Congressional Add for Combined Arms Center Threat Integrated Air Defense System		
Congressional Adds Subtotals	10.000	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
• MA6600: *Combat Training Centers Support*	126.600	117.584	123.411	-	123.411	96.692	96.186	91.276	73.483	0.000	725.232
• NA0100: *Training Devices, Nonsystem*	275.629	217.598	220.707	2.106	222.813	171.314	174.812	183.435	190.967	0.000	1,436.568

Remarks

D. Acquisition Strategy

Competitive development efforts based on performance specifications.

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1. In FY 2019 - 2020, 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 2019, Instrumentable-Multiple Integrated Laser Engagement System (I-MILES) will award a new Competitive 7 year Single Award Indefinite-Delivery/Indefinite-Quantity (IDIQ) Contract for relevancy.

3. In FY 2016, the Home Station Instrumentation Training System (HITS) program awarded a delivery order (DO) to General Dynamics Missions Systems under the LT2 CPM Next contract. The DO has a one-year base and four single-year option periods beginning in January 2016. In FY 2020, HITS will begin US Army aviation vehicle integration.

4. In FY15, an Indefinite-Delivery/Indefinite-Quantity (IDIQ) contract with a 1-year base and 4 single-year option periods was awarded to General Dynamics Mission Systems - CTIA is executed under this contract. In FY20, a new competitive IDIQ contract with a 1-year base and 7 single-year option periods will be awarded - CTIA will be executed under this contract.

5. In FY 2018 - FY 2019, the Target Modernization (Target Mod) program incrementally funds the Phase III SBIR contract to Pratt & Miller Engineering for the Trackless Moving Target (TMT) which has a three-year period of performance. Contract provides for the continued product development (TRL7 to TRL9), originally initiated under a Small Business Innovation Research (SBIR) contract. In FY 2019 - FY 2020, Target Mod will initiate the first year of a projected three-year Phase III SBIR to SensorMetrix for the maturation and product development of the Non-Contact Hit Sensor.

6. 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 Support (PDSS) for all currently fielded versions.

7. Soldier/Squad Virtual Trainer (S/SVT) program will employ an incremental acquisition strategy where the full capability will occur in multiple increments as new capability is developed and delivered. Competitive prototyping development efforts will be conducted through Other Transactional Authority.

8. In FY 2018 and FY 2020, Digital Range Training System (DRTS) will exercise options under the Consolidated Product-line Management (CPM) Next Delivery Order to General Dynamics Mission Systems which will be a 12-month prototyping effort in FY 2020 to prototype the migration of the DRTS software into the Army Data Center's cloud environments.

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9. In FY 2020, Integrated Military Operations in Urban Terrain (MOUT) Training System (IMTS) will exercise options under the Consolidated Product-line Management (CPM) Next Delivery Order to General Dynamics Mission Systems which will be a 12-month prototyping effort. This is the first year of a multiple year effort of RDTE funding for this program to prototype the migration of the IMTS software into the Army Data Center's cloud environments.

10. In FY 2017, OPFOR Integrated Air Defense System (IADS) awarded a new standalone contract with a base, plus 4 option year periods.

11. In FY 2019, OPFOR Surrogate Wheeled Vehicles (OSWV) will pursue an organic solution to develop, integrate and test Visual Modifications for Tactical and Technical Vehicles.

12. In FY 2020, BEMT will exercise the first option year of Indefinite Delivery/Indefinite Quantity (IDIQ) contract which is to be awarded in Jan 2019.

E. Performance Metrics

N/A

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Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 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	1.107	0.241	Nov 2017	-		-		-		-	0.000	1.348	1.348
CTC-IS Program Management	Various	PEO STRI : Orlando, FL	7.761	1.257	Nov 2017	-		-		-		-	0.000	9.018	9.018
MSTC Program Management	Various	PEO STRI : Orlando, FL	0.799	0.153	Nov 2017	-		-		-		-	0.000	0.952	0.952
I-MILES Program Management	Various	PEO STRI : Orlando, FL	0.304	0.207	Oct 2017	-		-		-		-	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	8.787	1.679	Nov 2017	0.399	Nov 2018	0.251	Nov 2019	-		0.251	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	0.640	0.236	Oct 2017	-		-		-		-	0.000	0.876	0.876
Soldier Fitness Program	TBD	Mulitple : Various	1.254	0.846	Jun 2018	-		-		-		-	0.000	2.100	2.100
Suicide Prevention	TBD	Multiple : Various	-	2.139	Jun 2018	2.174	Jun 2019	-		-		-	0.000	4.313	4.313
SVT Program Management	Various	PEO STRI : Orlando, FL	-	0.049	Oct 2017	-		-		-		-	0.000	0.049	0.049
OPFOR Integrated Air Defense System (IADS) Program Management	Various	PEO STRI : Orlando, FL	0.188	0.554	Oct 2017	-		-		-		-	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 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Threat Integrated Air Defense System															
SBIR/STTR Transfer	TBD	PEO STRI : Orlando, FL	-	-		1.779	Oct 2018	-		-		-	0.000	1.779	-
		Subtotal	31.918	7.538		4.352		0.251		-		0.251	Continuing	Continuing	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
OneTESS	SS/CPFF	General Dynamics : Fairfax, VA	124.769	-		-		-		-		-	0.000	124.769	124.769
OneTESS	SS/CPFF	General Dynamics C4 Systems : Orlando, FL 32826	10.430	-		-		-		-		-	0.000	10.430	10.430
CTIA	Option/ IDIQ	General Dynamics Mission Systems : Orlando, FL	16.097	2.835	Jan 2018	1.876	Jan 2019	-		-		-	0.000	20.808	20.808
CTIA	C/CPFF	TBD : Orlando, FL	-	-		-		2.527	Jan 2020	-		2.527	Continuing	Continuing	Continuing
I-MILES	Option/ IDIQ	General Dynamics Mission Systems : Orlando, FL	1.041	0.440	Oct 2017	-		1.343	Oct 2019	-		1.343	Continuing	Continuing	Continuing
I-MILES RELEVANCY	SS/IDIQ	Lockheed Martin : Orlando, FL	-	2.171	May 2018	1.751	May 2019	1.288	May 2020	-		1.288	Continuing	Continuing	Continuing
CTC-IS	C/IDIQ	General Dynamics Mission Systems : Orlando, Fl	37.378	3.362	Jul 2018	1.846	Mar 2019	2.593	Feb 2020	-		2.593	Continuing	Continuing	Continuing
CTC-IS	C/IDIQ	GENERAL DYMAMICS ONE SOURCE : Orlando, FL	2.766	-		1.670	Aug 2019	1.677	Aug 2020	-		1.677	Continuing	Continuing	Continuing
HITS	C/FFP	Riptide : Orlando, FL	1.379	-		-		-		-		-	0.000	1.379	1.379

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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
HITS	C/IDIQ	General Dynamics Mission Systems : Orlando, FL 32826	3.109	0.900	Aug 2018	-		2.500	Jul 2020	-		2.500	Continuing	Continuing	Continuing
HITS	Option/ IDIQ	General Dynamics Mission Systems (GDMS) : Orlando, FL 32826	1.683	0.746	Oct 2017	0.725	Jan 2019	1.140	Jan 2020	-		1.140	Continuing	Continuing	Continuing
MSTC Development	C/FP	Multiple : Various	4.928	0.200	Mar 2018	-		0.682	Jul 2020	-		0.682	Continuing	Continuing	Continuing
EST Development	C/FP	Cubic Simulation Systems, Inc. : Orlando, FL 32809-3813	1.528	-		-		-		-		-	0.000	1.528	1.528
EST	C/FP	Nova Technologies : Panama City, FL 32404-6747	0.609	-		-		-		-		-	0.000	0.609	0.609
EST Enhanced Capabilities	C/FFP	Meggitt Training Systems, Inc. : Suwanee, GA 30024-1247	2.075	-		-		-		-		-	0.000	2.075	2.075
EST Enhanced Capabilities Adaptive Marksmanship and Intelligent Tutoring	C/FFP	Dignitas Technologies : Orlando, FL 32817	0.776	-		-		-		-		-	0.000	0.776	0.776
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
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

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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
LVC-IA Enhanced Capability	Option/ CPFF	Cole Engineering Services, Inc (CESI) : Orlando, FL	4.232	2.762	Nov 2017	2.774	Dec 2018	3.616	Nov 2019	-		3.616	Continuing	Continuing	Continuing
Target Modernization	C/IDIQ	Pratt and Miller Engineering : Orlando, FL	6.600	-		-		-		-		-	0.000	6.600	6.600
Target Modernization	Option/ CPFF	Pratt and Miller Engineering (P&M) : Orlando, FL	2.054	2.152	Jan 2018	0.507	Oct 2018	-		-		-	0.000	4.713	4.713
Target Modernization	C/CPFF	JRM Technologies : Orlando	-	-		1.149	Dec 2018	-		-		-	0.000	1.149	1.149
Target Modernization	C/CPFF	SensorMetrix : San Diego, CA	-	-		-		2.077	Jan 2020	-		2.077	Continuing	Continuing	Continuing
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
ETC-IS	SS/CPFF	General Dynamics C4 Systems : Orlando, FL 32826	4.836	-		-		-		-		-	0.000	4.836	4.836
Digital Range Training System (DRTS)	C/CPFF	General Dynamics Mission Systems : Orlando, FL	-	1.539	Mar 2018	-		1.600	Jan 2020	-		1.600	Continuing	Continuing	Continuing
OPFOR Integrated Air Defense System (IADS)	MIPR	PEO IEWS, PM Aircraft Survivability Equipment (ASE) : Huntsville, AL	2.046	14.019	Jan 2018	5.306	Feb 2019	-		-		-	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
Radar Signal Emulator Development for IADS	C/TBD	To Be Determined : Orlando, FL	-	-		9.520	Feb 2019	-		-		-	0.000	9.520	9.520

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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Soldier/Squad Virtual Trainer (S/SVT) Program	C/TBD	PEO STRI : Orlando, FL	-	-		5.534	Mar 2019	-		-		-	0.000	5.534	5.534
OPFOR Surrogate Wheeled Vehicles (OSWV)	IA	Tank Automotive Research Development and Engineering Center : Warren, MI	-	-		2.783	Mar 2019	3.718	Mar 2020	-		3.718	Continuing	Continuing	Continuing
Basic Electronics Maintenance Trainer (BEMT)	SS/TBD	ACC Orlando : Orlando, FL	-	-		-		0.181	Jan 2020	-		0.181	Continuing	Continuing	Continuing
Integrated Military Operations in Urban Terrain (MOUT) Training System (IMTS)	C/CPFF	General Dynamcis Mission Systems : Orlando, FL	-	-		-		1.000	Jan 2020	-		1.000	0.000	1.000	1.000
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
		Subtotal	269.017	40.949		35.441		25.942		-		25.942	Continuing	Continuing	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
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
CTIA	Various	Various : Various	12.844	-		-		-		-		-	0.000	12.844	12.844
Target Modernization	Various	Various : Various	0.192	-		-		-		-		-	0.000	0.192	0.192
		Subtotal	19.894	-		-		-		-		-	0.000	19.894	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Army			Date: March 2019
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*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 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	7.501	2.113	Nov 2017	1.619	Dec 2018	1.219	Nov 2019	-		1.219	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	1.851	1.300	Jul 2018	2.969	Aug 2019	-		-		-	0.000	6.120	6.120
		Subtotal	16.053	3.413		4.588		1.219		-		1.219	Continuing	Continuing	N/A

	Prior Years	FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	336.882	51.900		44.381		27.412		-		27.412	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2020 Army		Date: March 2019
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 2020 Army		Date: March 2019
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*

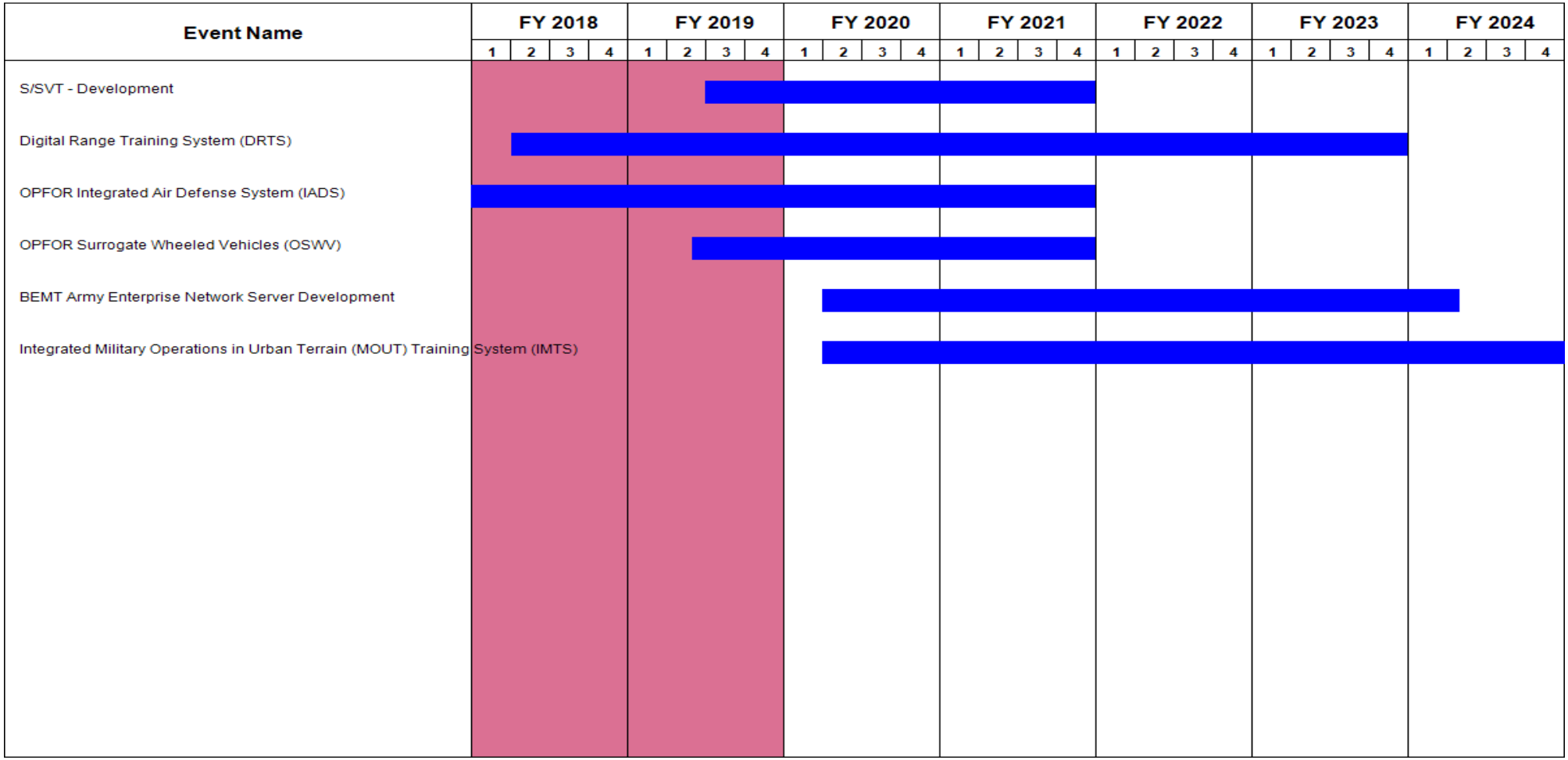

Exhibit R-4A, RDT&E Schedule Details: PB 2020 Army		Date: March 2019
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604715A / *Non-System Training Devices - Eng Dev*	**Project (Number/Name)** 241 / *Nstd Combined Arms*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
OneTESS Development	1	2013	4	2014
CTIA Development and Architectural Evolution	1	2012	4	2025
CTC IS Development	1	2010	4	2025
I-MILES Development	2	2017	4	2021
I-MILES RELEVANCY	2	2018	4	2024
HITS Development	3	2012	4	2024
MSTC MT-C2 Development	2	2016	3	2018
MSTC Trainer Developments	2	2017	4	2023
EST Enhanced Capabilities Adaptive Marksmanship and Intelligent Tutoring	3	2015	2	2016
EST Enhanced Capabilities	3	2016	2	2018
CFFT Enhanced Joint Fires Observer (JFO) Training and Certification Requirements	2	2017	3	2018
LVC-IA - Version 1	1	2010	4	2012
LVC-IA - Version 2 (Development, Integration, Demonstration and Testing)	1	2014	3	2016
LVC-IA - Version 3 (Development, Integration, Demonstration and Testing)	4	2016	3	2018
LVC-IA - Version 4 (Development, Integration, Demonstration and Testing)	4	2018	3	2021
LVC-IA - Concurrency with Mission Command Systems	4	2021	4	2032
Target Modernization Development	1	2016	4	2025
CSF2	1	2015	4	2016
S/SVT - Development	3	2019	4	2021
Digital Range Training System (DRTS)	2	2018	4	2023
OPFOR Integrated Air Defense System (IADS)	4	2017	4	2021
OPFOR Surrogate Wheeled Vehicles (OSWV)	2	2019	4	2021

Exhibit R-4A, RDT&E Schedule Details: PB 2020 Army		Date: March 2019
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	2	2020	2	2024
Integrated Military Operations in Urban Terrain (MOUT) Training System (IMTS)	2	2020	4	2025