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 4: *Advanced Component Development & Prototypes (ACD&P)*					R-1 Program Element (Number/Name) PE 0604121A *I Synthetic Training Environment Refinement & Prototyping*							
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	-	112.093	206.335	166.452	-	166.452	101.495	84.727	51.885	118.956	0.000	841.943
CR2: *STE Information Systems (TSS, TMT)*	-	-	102.443	111.385	-	111.385	50.665	36.198	35.800	35.099	0.000	371.590
CR3: *STE Live*	-	-	30.000	27.396	-	27.396	24.343	34.084	14.613	82.371	0.000	212.807
CR4: *STE One World Terrain (OWT)*	-	-	32.388	1.387	-	1.387	2.932	1.444	1.472	1.486	0.000	41.109
CR5: *STE Reconfigurable Virtual Trainer (RVCT)*	-	-	25.216	20.726	-	20.726	15.605	-	-	-	0.000	61.547
CR6: *STE Squad Immersive Virtual Trainer (SiVT)*	-	-	5.000	-	-	-	-	-	-	-	0.000	5.000
CR7: *STE Soldier Virtual Trainer (SVT)*	-	-	11.288	5.558	-	5.558	7.950	13.001	-	-	0.000	37.797
FD6: *Synthetic Training Environment Refine & Prototype*	-	105.354	-	-	-	-	-	-	-	-	0.000	105.354
SV1: *Soldier/Squad Virtual Trainer*	-	6.739	-	-	-	-	-	-	-	-	0.000	6.739

Note

In FY 2022, all requirements from Project FD6 - Synthetic Training Environment Refine & Prototype were realigned to Projects CR2 (STE Information Systems [TSS, TMT]), CR3 (STE Live), CR4 (STE One World Terrain [OWT]), CR5 (STE Reconfigurable Virtual Trainer [RVCT]), and CR7 (STE Soldier Virtual Trainer [SVT]).

In FY 2022, all requirements from Project SV1 - Soldier/Squad Virtual Trainer were realigned to Projects CR4 (STE One World Terrain [OWT]) and CR6 (STE Squad Immersive Virtual Trainer [SiVT]).

A. Mission Description and Budget Item Justification

These funding lines are directly aligned to the Army Synthetic Training Environment (STE) Modernization Priority.

The Synthetic Training Environment (STE) is the next generation holistic combined arms collective training capability that will enable leaders, Soldiers, and units from Squad through Army Service Component Command to train where they will fight, with the partners they will fight with, and in complex operational environments in support of Multi-Domain Operations (MDO). STE will revolutionize Army training by providing the repetition necessary at the Point of Need (PoN) for improved proficiency prior to live training or operations- improving Soldier lethality and survivability. The STE program has five Other Transaction Authority (OTA) contracts

awarded in support of prototyping capabilities to an Initial Operating Capability (IOC) of FY 2023, and will implement an incremental fielding approach leveraging the Software Acquisition pathway. The STE will be available where training occurs (home station, combat training centers, armories, institutions, and deployed locations).

The STE is comprised of five main signature efforts: 1) STE-Information System (STE-IS); 2) Reconfigurable Virtual Collective Trainers (RVCT); 3) Squad Immersive Virtual Trainer (SiVT, in partnership with Solider Lethality's IVAS program); 4) STE Live; and 5) Solider Virtual Trainer. STE-IS is comprised of Synthetic Training Environment training capability consisting of One World Terrain (OWT), Training Simulation Software (TSS), and Training Management Tools (TMT). The RVCT will allow units to collectively train, using proponent developed Combined Arms Training Strategies (CATS), on a simulated, fully interactive, real-time battlefield. Squad Immersive Virtual Trainer (SiVT) is the immersive training capability delivered as part of the Integrated Visual Augmentation System (IVAS) for the close combat Squads that enables IVAS to be a fight, rehearse, and training platform. STE Live focuses on the development of twelve engagement types and five instrumentation enablers. The twelve engagement types are direct fire, counter-defilade fire, indirect fire, dropped objects, placed objects, thrown objects, guided weapons, autonomous weapons, cyber, directed energy, radiant energy, and plume; the five instrumentation enablers are calculations, networks, sensors, terrains, and transmitters. SVT, will provide training to Soldiers Army wide by providing a Weapons Skills Development (WSD), Joint Fires Trainer (JFT) and Use of Force (UoF). A future STE line of effort includes Next Generation Constructive (NGC) that will be scaled up from what the vendor is able to deliver through the STE-IS platform.

FY 2023 Projects CR2 through CR7 Base RDTE dollars in the amount of $166.452 million funds significant development efforts in the STE-Information System (STE-IS), One World Terrain (OWT), Reconfigurable Virtual Collective Trainer (RVCT), Squad Immersive Virtual Trainer (SiVT), Soldier Virtual Trainer (SVT), and STE Live. NOTE - Projects CR2, CR3, CR4, CR6 and CR7 are not new starts; efforts were previously captured under projects FD6 and SV1.

The total cost of the STE Live (CR3) Middle Tier of Acquisition (MTA) effort is $100.50 million RDT&E from FY2020 to FY2024.

The total cost of the RVCT (CR5) MTA effort is $92.00 million RDT&E from FY 2022 to FY 2024. The remainder of STE RVCT is fully funded across the FYDP.

B. Program Change Summary ($ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Previous President's Budget	112.093	194.195	0.000	-	0.000
Current President's Budget	112.093	206.335	166.452	-	166.452
Total Adjustments	0.000	12.140	166.452	-	166.452
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-2.460			
• Congressional Rescissions	-	-			
• Congressional Adds	-	14.600			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	166.452	-	166.452

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 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0604121A *I Synthetic Training Environment Refinement & Prototyping*

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2021	FY 2022
Project: CR3: *STE Live*		
Congressional Add: *Congressional Add: Next generation MILES*	-	10.000
Congressional Add Subtotals for Project: CR3	-	10.000
Project: CR4: *STE One World Terrain (OWT)*		
Congressional Add: *Congressional Add: Muti-Sensor Terrain Capture & Processing*	-	4.600
Congressional Add Subtotals for Project: CR4	-	4.600
Project: FD6: *Synthetic Training Environment Refine & Prototype*		
Congressional Add: *Congressional Add for STE-LIVE - (Army requested transfer from WTCV line 5)*	10.400	-
Congressional Add Subtotals for Project: FD6	10.400	-
Congressional Add Totals for all Projects	10.400	14.600

Change Summary Explanation

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

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0604121A / *Synthetic Training Environment Refinement & Prototyping*	Project (Number/Name) CR2 / *STE Information Systems (TSS, TMT)*	

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
CR2: *STE Information Systems (TSS, TMT)*	-	-	102.443	111.385	-	111.385	50.665	36.198	35.800	35.099	0.000	371.590
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Training Simulation Software/Training Management Tools (TSS/TMT) will provide 2 of the 3 core functions for the Synthetic Training Environment - Information Systems (STE-IS).TSS/TMT will converge our current live, virtual, gaming and constructive environments to provide a single, unified training & management environment where units from Soldier/Squad to Army Service Component Command (ASCC) train in one or multiple live, virtual, gaming and constructive environments simultaneously.

The Training Simulation Software (TSS), the core STE simulation engine, provides the physical and behavior models necessary to replicate the operational environment to enable collective training from Soldier/Squad through ASCC. The TSS provides entity, aggregate, and common services, as well as adjudicates STE-IS interactions at the entity level (e.g., Computer-Generated Forces (CGF), and synthetic equipment). The Training Management Tool (TMT) is the capability that enables units to quickly plan collective training events, prepare training events; execute and monitor events, and assess event results and readiness. TMT provides an easy to use interface, combined with an Intelligent Tutor to reduce help-desk support, time, and manpower required for a training event. TMT will provide training management (data) services and authoritative data sources to enable training on demand to users regardless of geographic location.

In FY 2021, TSS/TMT adopted the execution of the Software Acquisition Pathway, tailored for software intensive systems. TSS/TMT plans to facilitate rapid and iterative delivery of its capabilities through Minimal Viable Products (MVP) and Minimum Viable Capability releases (MVCR) to support Squad (Sq) to Brigade (Bde) level training through 4QFY2023.

FY 2023 Base RDTE dollars in the amount of $111.385 million for TSS/TMT will continue with the development of Minimal Viable Product (MVP) and delivery of Minimal Viable Capability Releases (MVCR) for the STE-IS to achieve a Battalion to Brigade level training capability. Base funding will also continue the implementation of DEVSECOPS process and software production pipeline to support STE-IS capability releases by echelons. Also, base funding will continue the development and integration of Avionics Software Emulation (AvSE) with TSS/TMT software baseline to support the RVCT Air capability.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: Engineering, Support, Test & Evaluation for STE-IS	-	98.704	111.385
FY 2022 Plans: Funding supports the STE-IS TSS/TMT continued prototype development of the Minimal Viable Products (MVPs), testing and release of capability releases to achieve Squad through Company training capability. Continued prototype development and testing will focus in the following areas:			

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0604121A / *Synthetic Training Environment Refinement & Prototyping*	**Project (Number/Name)** CR2 / *STE Information Systems (TSS, TMT)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
-- Architecture: continue with the development of a scalable/flexible Modular Open System Approach (MOSA) architecture to deliver collective training capability at the Point of Need (PoN). Continue development of open/common interface to support technology insertion and interoperability with STE lines of effort (i.e. - OWT, RVCT-Air, RVCT-Ground, RVCT-Soldier and SVT). -- TMT: continue with the development of the user interfaces that would enable Commanders and Leaders at the Squad through Company echelons to design exercises/scenarios -- TSS: continue with the development of the STE core simulation engine to provide a synthetic environment which enable collective training from Squad through Company across the Fires, Movement and Maneuver, and Mission Command warfighting functions. -- Integration: Continue the integration of TSS, TMT, OWT, RVCT-Air, RVCT-Ground, RVCT-Soldier, Avionics Software Emulation (AvSE) and Mission Command Information Systems (MCIS) to deliver and integrated, training capable STE-IS system to support Squad through Company collective training tasks. -- Test/Evaluation: Conduct evaluation of the TSS/TMT MVPs through technical assessments, Soldier Touch Points, Early User Test and test planning events to provide STE-IS capability by echelons. -- Continue the implementation of the DEVSECOPS process and software production pipeline to support STE-IS capability releases by echelons. -- Continue the development and integration of AvSE with TSS/TMT software baseline to ensure that the RVCT-Air capability is concurrent with Aviation platform systems.			
FY 2023 Plans: Funding supports the STE-IS TSS/TMT continued prototype development of the Minimal Viable Products (MVPs), testing and release of capability releases to achieve Battalion to Brigade training capability. Continued prototype development and testing will focus in the following areas: -- Architecture: continue with the development of a scalable/flexible Modular Open System Approach (MOSA) architecture and Platform Development Kit (PDK) to deliver collective training capability at the Point of Need (PoN). Continue development of open/common interface to support technology insertion and interoperability with STE lines of effort (i.e. - OWT, RVCT-Air, RVCT-Ground, RVCT-Soldier, SVT and Live). -- TMT: continue with the development of the user interfaces that would enable Commanders and Leaders at the Company through Brigade echelons to Plan, Prepare, Execute and Assess (PPEA) training exercises/scenarios -- TSS: continue with the development of the STE core simulation/game engine to provide a synthetic environment which enable collective training from Company through Brigade across the Fires, Movement and Maneuver, and Mission Command warfighting functions.			

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0604121A / *Synthetic Training Environment Refinement & Prototyping*	**Project (Number/Name)** CR2 / *STE Information Systems (TSS, TMT)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
-- Integration: Continue the integration of TSS, TMT, OWT, RVCT-Air, RVCT-Ground, RVCT-Soldier, Avionics Software Emulation (AvSE), Mission Command Information Systems (MCIS), and Live, Virtual, Constructive ? Integration Architecture (LVC-IA) to deliver and integrate a training capable STE-IS system to support Squad through Brigade collective training tasks. -- Test/Evaluation: Conduct evaluation of the TSS/TMT MVPs through technical assessments, Soldier Touch Points, Early User Test, test planning events, and Operational Assessments to provide STE-IS capability by echelons. -- Continue the implementation of the DEVSECOPS process and the Continuous Integration/Continuous Delivery (CI/CD) software production pipeline to support STE-IS capability releases by echelons. -- Continue with the development and integration of AvSE with TSS/TMT software baseline to ensure that the RVCT-Air capability is concurrent with Aviation platform systems. -- Continue with the development and integration of Common Software Library (CSL) with TSS/TMT software baseline to ensure that the RVCT-G capability is concurrent with Ground platform systems. -- Continue enhancing the TSS/TMT software baseline based on Soldier/User feedback collected at Soldier Touch Points, Early User Test and Operational Assessments ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Increase from FY2022 to FY2023 is due continued development of TSS/TMT to achieve Battalion to Brigade training capability.			
Title: SBIR/STTR Transfer ***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	-	3.739	-
Accomplishments/Planned Programs Subtotals	-	102.443	111.385

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
• NA2016: *STE INFO SYSTEMS (TSS/TMT)*	-	-	9.722	-	9.722	9.837	10.036	10.265	10.261	0.000	50.121

Remarks

Procurement dollars for Training Simulation Software/Training Management Tools (TSS/TMT) will provide Interim Contracting Support to conduct software updates, modifications, Risk Management Framework (RMF) concurrency, Problem Troubleshoot Reports (PTRs), and help desk support for fielded TSS/TMT capability.

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0604121A / *Synthetic Training Environment Refinement & Prototyping*	**Project (Number/Name)** CR2 / *STE Information Systems (TSS, TMT)*

D. Acquisition Strategy

The TSS/TMT will be deployed as a software intensive program leveraging the Software Acquisition Pathway. To ensure speed and agility to deliver and modernize STE, a modular open systems architecture (MOSA) will also be used to enable the Army to exploit rapid advancements in cutting-edge commercial technologies. Other acquisition elements such as testing, contracting, and technology transition will consider any and all means available to innovate and incorporate complementary support to add momentum in this approach.

The TSS/TMT requirements are codified in the STE-IS Abbreviated Capabilities Development Document (A-CDD) version 2, approved 2 June 2020. TSS/TMT was one of five (5) OTAs awarded in FY 2019 in support of the STE prototype initiatives which include: TSS/TMT, OWT, RVCT, Live (market research only), and SVT Weapons Optimization (market research only). Prime(s) and Sub-vendors will execute the STE agreement(s) through an Agile development process with established success criteria and their DevSecOps processes. Vendors will continually include the Government and all stakeholders (Internal and external) in the Agile development process. This process will ensure all parties have transparency and early input into the modular design effort in order to support success of the product(s) being developed for the STE.

The initial TSS/TMT OTA, awarded in FY2019, commenced the prototype development and evaluation of Minimal Viable Products (MVP) through technical assessments, Soldier Touch Points, and test planning events. Additionally, the initial agreement allowed the Government to fully understand and decompose the requirements, establish/describe interfaces between TSS/TMT and RVCT, Avionics Software Emulation (AvSE) and OWT capabilities, and exposed the Government to the readiness of additional technologies that will enable the delivery of an integrated STE. These lesson learned, along with incorporating the revised A-CDD updates, forms the basis of the new TSS/TMT follow-on OTA awarded in June 2021. The TSS/TMT follow-on OTA will continue prototype development and evaluation of MVPs through technical assessments, Soldier Touch Points, Early User Test, test planning events, and Operational Assessments to provide a Squad (Sq) to Brigade (Bde) training capability, in addition to, providing Minimum Viable Capability Releases (MVCR) in support of RVCT capability.

STE Increment 1 IOC is programmed for 4Q FY 2023 and is defined as the first fielding and acceptance of the STE-IS capability at installations identified IAW the distribution plan. Increment 1 fielded STE systems will include the following attributes: STE-IS capabilities in support of RVCT and the Soldier Virtual Trainer (SVT) IOC in FY 2023; meeting Information Assurance and Risk Management Framework requirements. New Equipment Training (NET) will include the capability to support the RVCT, and the ability to provide initial sustainment via interim contractor support (ICS). Soldiers will interface with the STE-IS through the Training Management Tools, and the Reconfigurable Virtual Collective Trainer (RVCT).

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0604121A / *Synthetic Training Environment Refinement & Prototyping*	Project (Number/Name) CR2 / *STE Information Systems (TSS, TMT)*	

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
SBIR/STTR Transfer	TBD	Various : Various	-	-		3.739		-		-		-	Continuing	Continuing	Continuing
		Subtotal	-	-		3.739		-		-		-	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
TSS/TMT Prototype Development	Option/ FFP	Cole Engineering Services : Orlando, FL	-	-		87.429	Oct 2021	99.693	Oct 2022	-		99.693	Continuing	Continuing	Continuing
AvSE Development/ Integration	Various	CCDC AvMC/ PEO Aviation : Redstone Arsenal, AL	-	-		8.000	Jan 2022	8.790	Jan 2023	-		8.790	Continuing	Continuing	Continuing
		Subtotal	-	-		95.429		108.483		-		108.483	Continuing	Continuing	N/A

Remarks

Increase in TSS/TMT Prototype Development from FY2022 to FY2023 is due to focusing development effort to provide Battalion and Brigade capability.
Increase in AvSE Development/Integration from FY2022 to FY2023 is due to finalizing developmental effort to ensure that the RVCT-Air capability is concurrent with Aviation platform systems.

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
MVCR	Various	Multiple : Orlando, FL	-	-		2.575	Feb 2022	2.108	Jul 2023	-		2.108	Continuing	Continuing	Continuing
TSS/TMT Test Support	Various	ATEC : Orlando, FL	-	-		0.700	Mar 2022	0.794	Oct 2022	-		0.794	Continuing	Continuing	Continuing
		Subtotal	-	-		3.275		2.902		-		2.902	Continuing	Continuing	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0604121A / *Synthetic Training Environment Refinement & Prototyping*	Project (Number/Name) CR2 / *STE Information Systems (TSS, TMT)*	

	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	-	-		102.443		111.385		-		111.385	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0604121A / *Synthetic Training Environment Refinement & Prototyping*	**Project (Number/Name)** CR2 / *STE Information Systems (TSS, TMT)*

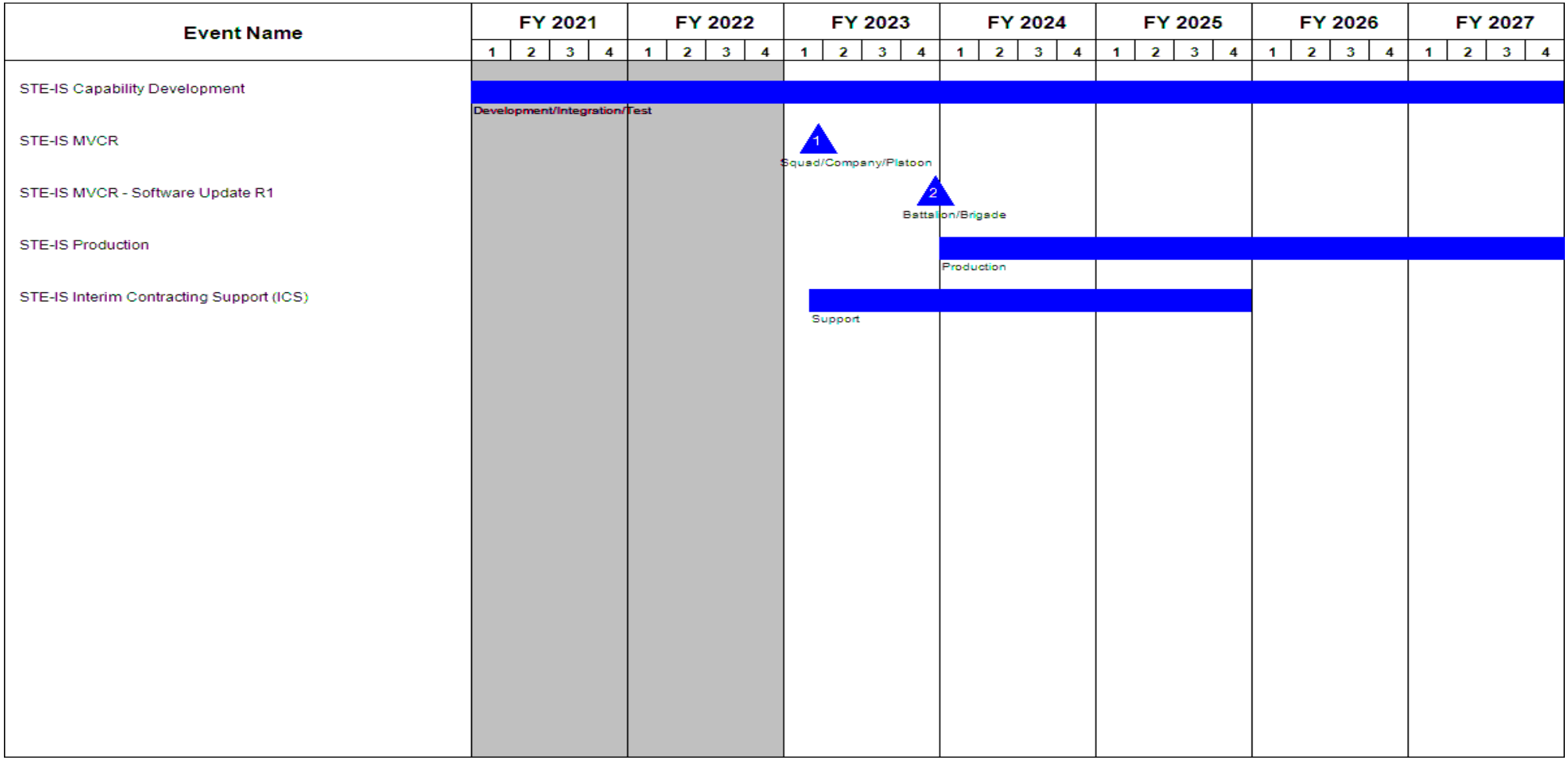

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0604121A / *Synthetic Training Environment Refinement & Prototyping*	**Project (Number/Name)** CR2 / *STE Information Systems (TSS, TMT)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
STE-IS Revised A-CDD (19 Jun 20)	3	2020	3	2020
STE-IS Capability Development	3	2019	4	2027
STE-IS MVCR	1	2023	1	2023
STE-IS MVCR - Software Update R1	4	2023	4	2023
STE-IS Production	1	2024	4	2032
STE-IS Interim Contracting Support (ICS)	1	2023	4	2025

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0604121A / *Synthetic Training Environment Refinement & Prototyping*	Project (Number/Name) CR3 / *STE Live*	

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
CR3: *STE Live*	-	-	30.000	27.396	-	27.396	24.343	34.084	14.613	82.371	0.000	212.807
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Element was previously funded from PE 604121A, Project FD6.

A. Mission Description and Budget Item Justification

The Synthetic Training Environment (STE) Live program develops live training systems in concert with the Cross Functional Team STE initiatives. The STE Live program converges live training with the STE, providing units the necessary training components to accelerate and sustain combined arms maneuver proficiency in support of Multi-Domain Operations (MDO). The STE Live program focuses on the development of next generation live training architecture that leverages innovative technologies and standards to enable the realistic exercise of unit combat weapons up to brigade level in Multi Domain Operation Environments. The challenge today is the Army cannot train as it fights since 40% of BCT platforms weapons effects are currently not simulated by today's live training system (Multiple Integrated Laser Engagement System (MILES). STE Live next generation systems will replicate the following new engagement types, improve sensory feedback, increase realism of direct fire engagement, increase realism of battle damage assessments, improve after action reviews and improve instrumentation at the Combat Training Centers and Home Stations: Indirect Fire, Counter-Defilade (M320, MK-19), Place Object (Mines), Thrown Objects (Grenades), Dropped Objects (Bombs), Guided Weapon (Missiles), Autonomous Weapon (Missiles, Smart Munitions), Direct Energy (laser), Radiant Energy (Sonic, Microwave), CBRNE Plumes and Cyber.

FY 2023 Base RDTE dollars in the amount of $27.396 million furthers development of STE Live prototype(s) to replicate the Tactical Engagement Simulation Systems (TESS) for multiple engagement scenarios (direct, indirect, counter-defilade, dropped, information warfare, CBRNE Plumes). These systems will replace up to six systems reaching end of useful life and enhance Soldier capability and training value. FY 2023 funds will also continue to revolutionize Soldier Simulation and Training systems to include a Synthetic Training Environment for 12 engagement types: Direct Fire, Counter-Defilade Fire, Indirect Fire, Dropped Objects, Placed Objects, Thrown Objects, Guided Weapons, Autonomous Weapons, Cyber, Directed Energy, Radiant Energy, and Plume. The 5 instrumentation enablers are Calculations, Networks, Sensors, Terrains, and Transmitters.

The total cost of the STE Live (CR3) Middle Tier of Acquisition (MTA) effort is $100.50 million RDT&E from FY2020 to FY2024.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: Engineering, Support, Test & Evaluation for STE Live	-	19.270	27.396
Description: Direct engineering development, support and test of the STE Live program through awarded OTA vehicles. ***FY 2022 Plans:*** FY 2022 Base RDTE dollars in the amount of $19.270 million furthers development of STE Live prototype(s) into simulation training systems to replicate the training aid weapon systems for multiple engagement scenarios (direct, indirect, & counter-			

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0604121A / *Synthetic Training Environment Refinement & Prototyping*	**Project (Number/Name)** CR3 / *STE Live*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
defilade). These systems will replace up to six systems reaching End of Useful life and enhance Soldier capability and training value. FY 2022 funds will continue to revolutionize Soldier Simulation and Training systems to include a Synthetic Training Environment for 12 engagement types are Direct Fire, Counter-Defilade Fire, Indirect Fire, Dropped Objects, Placed Objects, Thrown Objects, Guided Weapons, Autonomous Weapons, Cyber, Directed Energy, Radiant Energy, and Plume. The 5 instrumentation enablers are Calculations, Networks, Sensors, Terrains, and Transmitters. ***FY 2023 Plans:*** FY 2023 Base RDTE dollars in the amount of $27.396 million furthers development of STE Live prototype(s) to replicate the TESS for multiple engagement scenarios (direct, indirect, counter-defilade, dropped, information warfare, CBRNE Plumes). These systems will eventually replace up to six systems reaching End of Useful life and enhance Soldier capability and training value. FY 2023 funds will continue to revolutionize TESS and the 5 instrumentation enablers (Calculations, Networks, Sensors, Terrains, and Transmitters). ***FY 2022 to FY 2023 Increase/Decrease Statement:*** The decrease of $1.874 million from FY 2022 to FY 2023 is due to the earlier STE Live vendor prototyping award(s) relating to non-laser technology development and testing efforts. STE Live planned to address a hybrid approach to replace the existing laser-based TESS direct fire engagement capability in FY 2023. The initial award(s) that were planned for FY 2023 are now being awarded in FY 2022.			
Title: SBIR/STTR Transfer ***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	-	0.730	-
Accomplishments/Planned Programs Subtotals	-	20.000	27.396

	FY 2021	FY 2022
Congressional Add: Congressional Add: Next generation MILES	-	10.000
FY 2022 Plans: FY 2022 Congressional Add RDTE dollars in the amount of $10.000 million furthers development of STE Live prototype(s) into simulation training systems to replicate the training aid weapon systems for multiple engagement scenarios (direct, indirect, & counter-defilade). These systems will replace up to six systems reaching End of Useful life and enhance Soldier capability and training value. FY 2022 funds will continue to revolutionize Soldier Simulation and Training systems to include a Synthetic Training Environment for 12 engagement types are Direct Fire, Counter-Defilade Fire, Indirect Fire, Dropped Objects, Placed Objects,		

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0604121A / *Synthetic Training Environment Refinement & Prototyping*	**Project (Number/Name)** CR3 / *STE Live*

	FY 2021	FY 2022
Thrown Objects, Guided Weapons, Autonomous Weapons, Cyber, Directed Energy, Radiant Energy, and Plume. The 5 instrumentation enablers are Calculations, Networks, Sensors, Terrains, and Transmitters.		
Congressional Adds Subtotals	-	10.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

To accelerate the live training modernization program, a STE Live Force on Force Modular Open System Approach compliant architecture will be developed starting with direct fire, indirect fire and counter-defilade force on force engagement systems plus the five instrumentation enablers. STE Live will leverage innovative technologies in areas of integrated internet of things, intelligent sensors, augmented reality and haptics to realize these capabilities. STE Live will be acquired using rapid prototyping with objective to achieve production ready solutions within 2 to 3 years after award. STE Live OTA on track for IOC in FY 2026 and production of FOC quantities in FY 2030.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0604121A / *Synthetic Training Environment Refinement & Prototyping*	Project (Number/Name) CR3 / *STE Live*	

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
SBIR/STTR Tansfer	TBD	Various : Various	-	-		0.730		-		-		-	Continuing	Continuing	Continuing
		Subtotal	-	-		0.730		-		-		-	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
STE Live	C/TBD	TBD : Orlando, FL	-	-		29.270	Mar 2022	27.396	Mar 2023	-		27.396	Continuing	Continuing	Continuing
		Subtotal	-	-		29.270		27.396		-		27.396	Continuing	Continuing	N/A

	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
Project Cost Totals	-	-		30.000		27.396		-		27.396	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0604121A / *Synthetic Training Environment Refinement & Prototyping*	**Project (Number/Name)** CR3 / *STE Live*

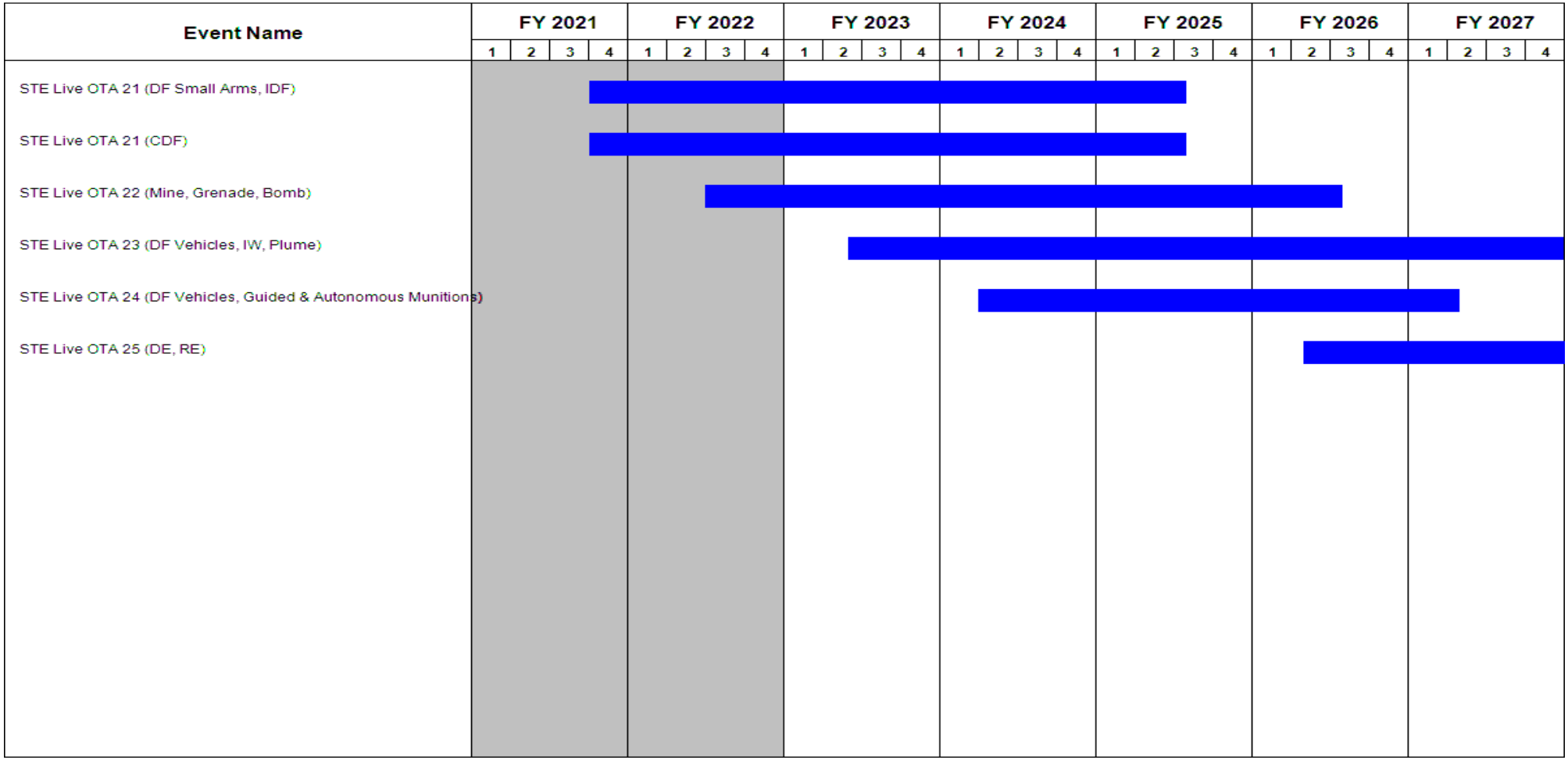

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0604121A / *Synthetic Training Environment Refinement & Prototyping*	**Project (Number/Name)** CR3 / *STE Live*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
STE Live OTA 21 (DF Small Arms, IDF)	4	2021	3	2025
STE Live OTA 21 (CDF)	4	2021	3	2025
STE Live OTA 22 (Mine, Grenade, Bomb)	3	2022	3	2026
STE Live OTA 23 (DF Vehicles, IW, Plume)	2	2023	4	2027
STE Live OTA 24 (DF Vehicles, Guided & Autonomous Munitions)	2	2024	2	2027
STE Live OTA 25 (DE, RE)	2	2026	1	2029

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0604121A / *Synthetic Training Environment Refinement & Prototyping*	Project (Number/Name) CR4 / *STE One World Terrain (OWT)*	

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
CR4: *STE One World Terrain (OWT)*	-	-	32.388	1.387	-	1.387	2.932	1.444	1.472	1.486	0.000	41.109
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

One World Terrain (OWT) is one of three core functions of the Synthetic Training Environment-Information Systems (STE-IS). OWT provides a 3D global terrain capability and associated information services that support virtual replication of the physical Earth and complexities of the operational environment in support Multi-Domain Operations (MDO) and training at the Point of Need (PoN). OWT will enable leaders, Soldiers, and units to train in complex operational environments, such as dense urban, woodland, jungle, desert, and subterranean areas before the first fight begins.

Capabilities developed by OWT automatically process raw terrain data into a well-formed format that is editable and consumable by standard commercial tools and technologies. It provides the tools to incorporate approved geospatial information updates and local terrain surveys into the OWT foundational repository and will be used by STE and tactical applications.

In FY 2021, OWT adopted the Software Acquisition Pathway employed by the STE-IS program that is tailored for software intensive systems. OWT plans to facilitate rapid and iterative delivery of its capabilities through integration with STE-IS Minimal Viable Products (MVP) and Minimum Viable Capability releases (MVCR) that support Squad (Sq) through Brigade (Bde) level training until 4QFY2023.

FY 2023 Base RDTE dollars in the amount of $1.387 million for OWT will support completion of prototype development and integration with the TSS/TMT portion of the STE-IS, and remaining cybersecurity compliance testing.

The OWT requirements are codified in the STE-IS abbreviated Capabilities Development Document (A-CDD) version 2, approved 2 June 2020.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: Engineering, Support, Test & Evaluation for OWT	-	26.774	1.387
FY 2022 Plans: Funding supports continued development and evaluation of OWT prototype processes to create the prototype terrain. OWT base funding will continue development of additional feature extraction algorithms, automated test tools, and efforts to fully integrate OWT 3D terrain data into the TSS/TMT portion of the STE-IS. Base funding will complete development of capabilities started in FY21, and begin development of prototype tactical terrain and additional revised A-CDD requirements such as automated building interiors and integration of Soldier-collected 3D hi-res terrain captures. Lastly, funding will support delivery of products for the			

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0604121A / *Synthetic Training Environment Refinement & Prototyping*	**Project (Number/Name)** CR4 / *STE One World Terrain (OWT)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
STE-IS minimal viable capability release (MVCR), technical assessments, additional cybersecurity tests, and test planning for events leading up to the MVCR. ***FY 2023 Plans:*** Funding will support completion of prototype development and integration efforts with the TSS/TMT portion of the STE-IS, and remaining cybersecurity compliance testing. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Decrease from FY 2022 to FY 2023 is due to completing prototype terrain efforts, and revised A-CDD requirements such as automated building interiors and integration of Soldier-collected 3D hi-res terrain captures.			
Title: SBIR/STTR Transfer ***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	-	1.014	-
Accomplishments/Planned Programs Subtotals	-	27.788	1.387

	FY 2021	FY 2022
Congressional Add: Congressional Add: Muti-Sensor Terrain Capture & Processing ***FY 2022 Plans:*** Funding support the development, integration and test efforts to achieve a software capability to ingest data collected at the Squad level by a Terrain Capture Kit.	-	4.600
Congressional Adds Subtotals	-	4.600

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
• NA2015: *STE ONE WORLD TERRAIN*	-	20.000	0.000	-	0.000	-	-	-	-	0.000	20.000

Remarks

Base Procurement dollars for One World Terrain (OWT) will procure commercial terrain data (approx. 2 million square kilometers) required to increase the global 3D terrain coverage that replicates complex operational environments.

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0604121A / *Synthetic Training Environment Refinement & Prototyping*	**Project (Number/Name)** CR4 / *STE One World Terrain (OWT)*

D. Acquisition Strategy

The OWT requirements are codified in the STE-IS abbreviated Capabilities Development Document (A-CDD) version 2, approved 2 June 2020. OWT was one of five (5) OTAs awarded in FY 2019 in support of the STE prototype initiatives which included: STE-IS (TSS/TMT, OWT), RVCT, Live (market research only), and SVT Weapons Optimization (market research only). The Prime(s) and Sub-vendors will execute the STE agreement(s) through an Agile development process with established success criteria and their DevSecOps processes. Vendors will continually include the Government and all stakeholders (Internal and external) in the Agile development process. This process will ensure all parties have transparency and early input into the modular design effort in order to support success of the product(s) being developed for the STE.

As a component of the STE-IS, OWT was designated a software intensive program leveraging the Software Acquisition Pathway in June 2021 when the new TSS/TMT follow-on OTA was awarded. OWT began conducting prototype development and evaluation of Minimal Viable Products (MVP) with the TSS/TMT follow-on OTA that continued prototype development and evaluation of minimal viable products (MVP) through technical assessments, Soldier Touch Points, Early User Test, test planning events, and Operation Assessments to provide a Squad (Sq) to Brigade (Bde) training capability. Additionally, as an integrated STE-IS capability, OWT will provide Minimum Viable Capability Releases (MVCR) in support of the RVCT (A/G/S) capability. Soldiers will interface with OWT through the STE-IS Training Management Tools.

OWT supports STE Increment 1 IOC, which is programmed for 4QFY2023, and is defined as the first fielding and acceptance of the STE-IS capability at installations identified in accordance with the distribution plan. OWT will be delivered as part of the integrated STE-IS capability, and will meet Information Assurance and Risk Management Framework requirements. OWT will conduct minor updates and sustainment of the prototype capability via the follow-on OTA.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0604121A / *Synthetic Training Environment Refinement & Prototyping*	Project (Number/Name) CR4 / *STE One World Terrain (OWT)*	

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
SBIR/STTR Transfer	TBD	Various : Various	-	-		1.014		-		-		-	Continuing	Continuing	Continuing
		Subtotal	-	-		1.014		-		-		-	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
OWT Capability Development	Option/ FFP	Maxar Technologies (formerly VRICON) : Westminster, CO	-	-		26.774	Dec 2021	1.387	Dec 2022	-		1.387	Continuing	Continuing	Continuing
Congressional Add: Muti-Sensor Terrain Capture & Processing	SS/TBD	Maxar Technologies (formerly VRICON) : Westminster, CO	-	-		4.600	Jun 2022	-		-		-	0.000	4.600	-
		Subtotal	-	-		31.374		1.387		-		1.387	Continuing	Continuing	N/A

Remarks

OWT Capability Development: OWT awarded its prototype OTA on June 2019. FY 2023 Base RDTE funding will support the completion of prototyping activities for the OWT OTA.
Note: VRICON was acquired by Maxar Technologies on 1 July 2020.

	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	-	-		32.388		1.387		-		1.387	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0604121A / *Synthetic Training Environment Refinement & Prototyping*	**Project (Number/Name)** CR4 / *STE One World Terrain (OWT)*

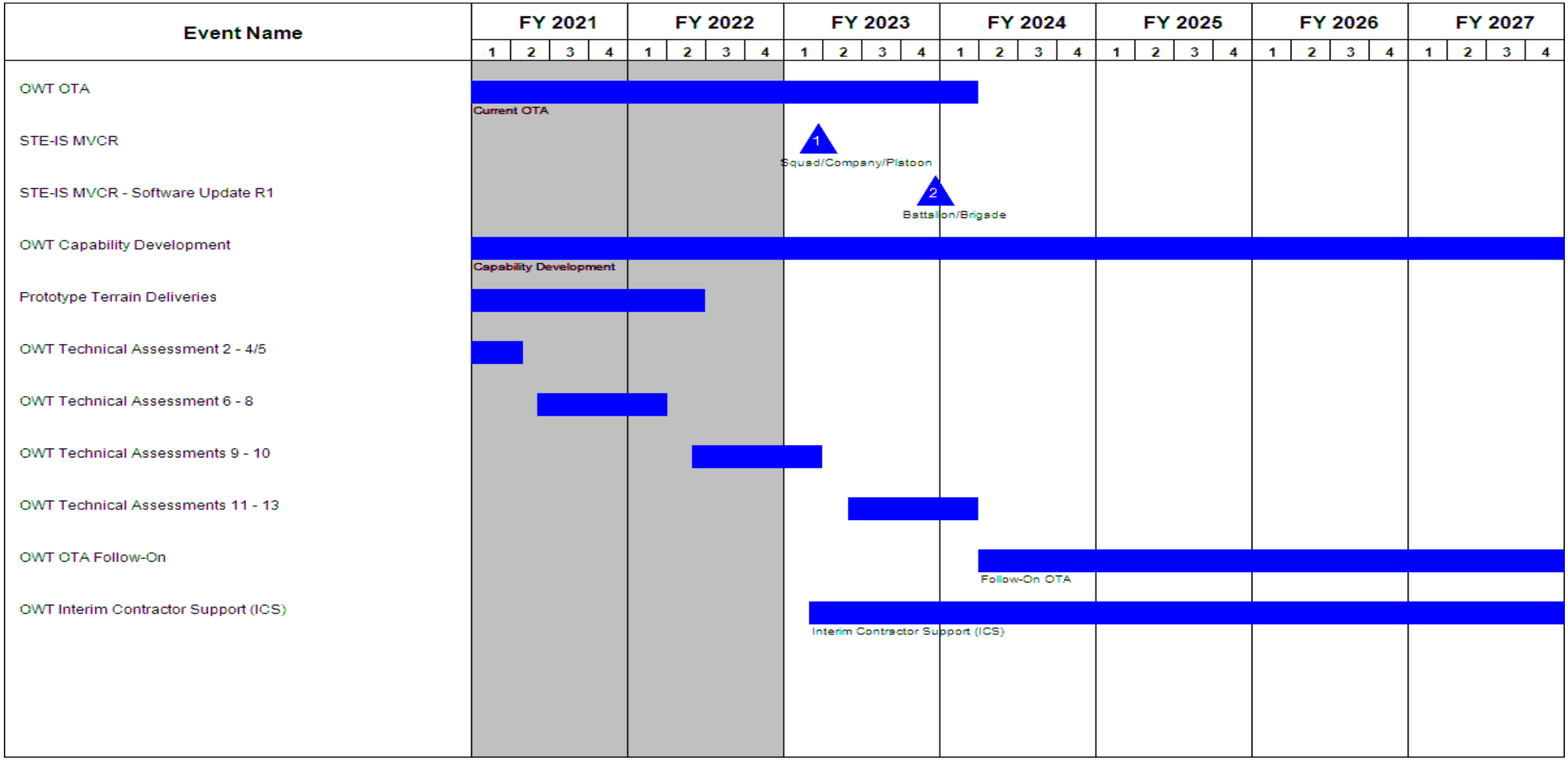

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0604121A / *Synthetic Training Environment Refinement & Prototyping*	**Project (Number/Name)** CR4 / *STE One World Terrain (OWT)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
OWT OTA	3	2019	1	2024
STE-IS MVCR	1	2023	1	2023
STE-IS MVCR - Software Update R1	4	2023	4	2023
OWT Capability Development	3	2019	1	2029
Prototype Terrain Deliveries	2	2020	2	2022
OWT Technical Assessment 2 - 4/5	2	2020	1	2021
OWT Technical Assessment 6 - 8	2	2021	1	2022
OWT Technical Assessments 9 - 10	2	2022	1	2023
OWT Technical Assessments 11 - 13	2	2023	1	2024
OWT OTA Follow-On	2	2024	1	2029
OWT Interim Contractor Support (ICS)	1	2023	1	2029

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0604121A / *Synthetic Training Environment Refinement & Prototyping*	Project (Number/Name) CR5 / *STE Reconfigurable Virtual Trainer (RVCT)*	

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
CR5: *STE Reconfigurable Virtual Trainer (RVCT)*	-	-	25.216	20.726	-	20.726	15.605	-	-	-	0.000	61.547
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The STE-IS and RVCT requirements, which are codified in abbreviated Capabilities Development Documents (A-CDD) version 2 approved 2 June 2020, directly support the Army Collective Training Environment - Initial Capabilities Document (ACTE-ICD) as the Army's cornerstone for replicating the Operational Environment (OE) during training events enabling the Army to train as it fights. Separate, but interoperable, RVCT systems are required for both air and ground collective training. The Air RVCT will represent the U.S. Army, Army National Guard, and Army Reserves fleet of rotary wing aircraft. The Ground RVCT will represent ground track and wheeled vehicles from the U.S. Army and Army National Guard.

The Reconfigurable Virtual Collective Trainer (RVCT) is the Army's next generation Virtual Training System for conducting collective maneuver training, collective gunnery training, mission rehearsal, and pre-deployment training; that will prepare units for Multi-Domain Operations (MDO). The RVCT includes aviation platforms (RVCT-A), ground platforms (RVCT-G), and dismounted infantry (RVCT-S) devices. The RVCT is transportable to the Point of Need (PoN) allowing units to train anywhere in the world. The RVCT will be enabled using the Synthetic Training Environment-Information Systems (STE-IS) software, which provides a fully interactive, real time simulated battlefield.

FY 2023 Base RDTE dollars in the amount of $20.726 million for RVCT is to complete integration lab assets, and develop Generation 3 (GEN 3) configuration kits based on Soldier feedback emerging from FY 2022 Soldier Touchpoints (STP) and Operational Assessment #1 (OA #1).

The total cost of the RVCT (CR5) Middle Tier of Acquisition (MTA) effort is $92.00 million RDT&E from FY 2022 to FY 2024. The remainder of STE RVCT is fully funded across the FYDP.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: Engineering, Support, Test & Evaluation for RVCT	-	24.296	20.726
Description: Direct engineering development, support and test of the Reconfigurable Virtual Collective Trainer (RVCT) program through awarded OTA vehicles.			
FY 2022 Plans: FY 2022 Base RDTE dollars in the amount of $24.296 million for RVCT is to finalize the technical development and demonstration of prototype designs to establish First Unit Equipped (FUE) at Ft. Hood, followed by a LUT and Milestone C.			
FY 2023 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0604121A / *Synthetic Training Environment Refinement & Prototyping*	**Project (Number/Name)** CR5 / *STE Reconfigurable Virtual Trainer (RVCT)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
FY 2023 Base RDTE dollars in the amount of $20.726M for RVCT is to complete integration lab assets and develop GEN 3 configuration kits based on Soldier feedback emerging from FY 2022 STPs and OA. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Decrease of $3.57 million from FY 2022 to FY 2023 Base RDTE dollars is due to decreased scope development.			
Title: SBIR/STTR Transfer ***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	-	0.920	-
Accomplishments/Planned Programs Subtotals	-	25.216	20.726

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

The United States Army has identified requirements for a training capability that provides a Synthetic Training Environment (STE), which includes immersive air and ground Reconfigurable Virtual Collective Trainers (RVCT), and a semi-immersive training capability for dismounted soldiers (RVCT-Soldier). The RVCT contributes significantly to the mitigation of four critical capability gaps identified in the Army's Capabilities Needs Analysis (CNA). As part of the STE Systems of Systems (SoS), the RVCT effort will deliver adaptable, low-overhead, hardware agnostic, training simulators that enable collective combined arms training in a realistic training environment that is a high-fidelity representation of current and future complex operational environments.

This STE simplified acquisition management plan targets a Rapid Fielding (RF) decision for RVCT NLT 4QFY 2022; followed by a 4QFY 2023 Initial Operational Capability (IOC) and a Middle Tier of Acquisition (MTA) RF Production decision. The 4QFY 2022 RF decision date is driven by several contributing factors; the aging legacy Training Aids Devices Simulators, and Simulations (TADSS), the widening of their respective concurrency gaps, and advanced technology developments in the field of Modeling & Simulation (M&S), that now allow the US Army to realize a level of training realism that is not possible with the current generation of legacy TADSS.

STE will enter MTA RF NLT 4th quarter Fiscal Year 2022 (4QFY 2022); followed by a 4th quarter Fiscal Year 2023 Initial Operational Capability (IOC). The 4QFY 2022 MTA RF timeline is driven by several contributing factors: the aging legacy Training Aids Devices Simulators, and Simulations (TADSS), the widening of their respective concurrency gaps; and advanced technology developments in the field of Modeling & Simulation (M&S) that now allow the US Army to realize a level of training realism that is not possible with the current generation of legacy TADSS.

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0604121A / *Synthetic Training Environment Refinement & Prototyping*	**Project (Number/Name)** CR5 / *STE Reconfigurable Virtual Trainer (RVCT)*

RVCT is executing an MTA RP as of 29 November 2021 in accordance with DoDi 5000.80, "Operation of Middle Tier of Acquisition (MTA), dtd 30 December 2019. Program Executive Officer for Simulation, Training, and Simulation (PEO) is the Milestone Decision Authority for the approved MTA RP. The MDA for the MTA RF will be determined in 4Q FY2022.

The Phase 1 RVCT First Article (FA) prototyping phase conducted an iterative discovery and development process that included close collaboration between Soldier stakeholders, customers, industry, and the development engineering community. The RVCT FA prototyping phase provided users with multiple feedback points, using pre-planned Synthetic Training Environment-Information System (STE-IS) Minimum Viable Product (MVP) software capability drops to facilitate Soldier Centric Design principles. Throughout the FA prototyping phase the RVCT PMO prioritized requirements as a trade-off for delivery, affordability, and risk reduction.

The RVCT Phase 2 is producing prototype GEN2 RVCT A/G systems, for delivery to Ft Hood, TX; including New Equipment Training (NET), establishment of an initial RVCT Product Support capability and infrastructure, and initiation of Interim Contractor logistics (ICS).

An Operational Assessment of the RVCT GEN2 prototypes will be conducted 4QFY 2022 at Ft Hood, TX. The Operational Assessment will determine whether the RVCT systems are operationally effective, suitable, survivable, and safe for intended use to support a 4QFY 2022 RVCT entry into MTA RF. The RVCT LUT will be conducted on production representative RVCT hardware running the STE-IS Minimum Viable Capability Release (MVCR) Company level software capability.

The Phase 2 RVCT prototyping phase will complete the iterative discovery and development process that entails close collaboration between Soldier stakeholders, customers, industry, and the development engineering community. The follow-on production effort will include a 4QFY 2022 production decision to establish the initial RVCT production base. A combined STE-IS & RVCT Operational Demonstration will be conducted 3QFY 2023. This event will inform a 4QFY 2023 RVCT IOC.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0604121A / *Synthetic Training Environment Refinement & Prototyping*	Project (Number/Name) CR5 / *STE Reconfigurable Virtual Trainer (RVCT)*	

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
SBIR/STTR Transfer	TBD	Various : Various	-	-		0.920		-		-		-	Continuing	Continuing	Continuing
		Subtotal	-	-		0.920		-		-		-	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
Reconfigurable Virtual Collective Trainers	C/FP	Cole Engineering Services, Inc : Orlando, FL	-	-		24.296	Dec 2021	20.726	Oct 2022	-		20.726	Continuing	Continuing	Continuing
		Subtotal	-	-		24.296		20.726		-		20.726	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	-	-		25.216		20.726		-		20.726	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0604121A / *Synthetic Training Environment Refinement & Prototyping*	**Project (Number/Name)** CR5 / *STE Reconfigurable Virtual Trainer (RVCT)*

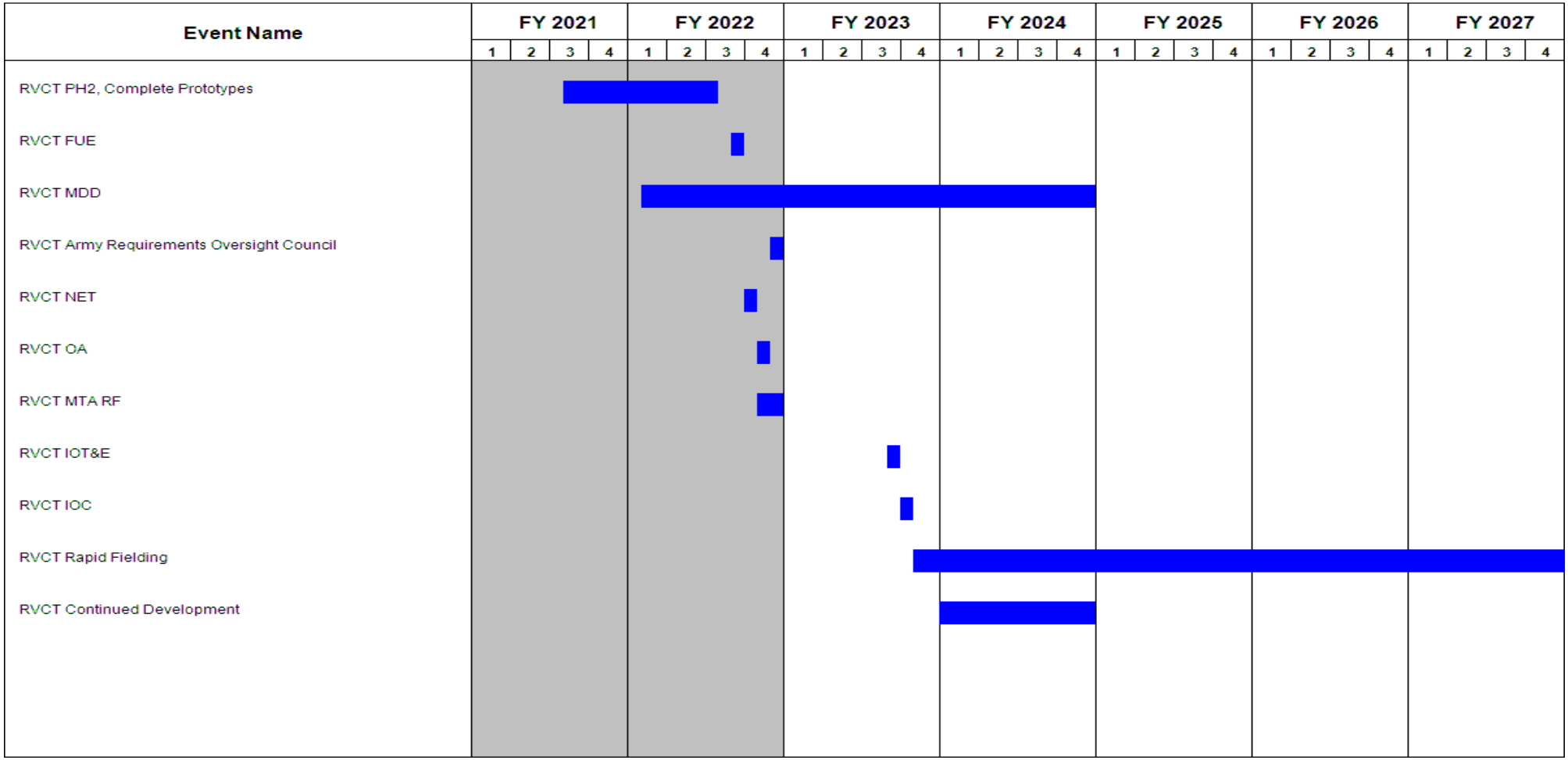

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0604121A / *Synthetic Training Environment Refinement & Prototyping*	**Project (Number/Name)** CR5 / *STE Reconfigurable Virtual Trainer (RVCT)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
RVCT PH2, Complete Prototypes	3	2021	3	2022
RVCT FUE	3	2022	3	2022
RVCT MDD	1	2022	4	2024
RVCT Army Requirements Oversight Council	4	2022	4	2022
RVCT NET	4	2022	4	2022
RVCT OA	4	2022	4	2022
RVCT MTA RF	4	2022	4	2022
RVCT IOT&E	3	2023	3	2023
RVCT IOC	4	2023	4	2023
RVCT Rapid Fielding	4	2023	4	2028
RVCT Continued Development	1	2024	4	2024

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0604121A / *Synthetic Training Environment Refinement & Prototyping*	Project (Number/Name) CR6 / *STE Squad Immersive Virtual Trainer (SiVT)*	

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
CR6: *STE Squad Immersive Virtual Trainer (SiVT)*	-	-	5.000	-	-	-	-	-	-	-	0.000	5.000
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Squad Immersive Virtual Trainer (SiVT) is the immersive training capability delivered as part of the Integrated Visual Augmentation System (IVAS) for the close combat Squads that enables IVAS to be a fight, rehearse, and training platform. SiVT provides a single platform for Soldiers/Marines to Fight, Rehearse, and Train with day and night capability, providing increased lethality, mobility, and situational awareness necessary to achieve overmatch against our current and future adversaries. SiVT provides the Close Combat Force a mechanism to modernize in a comprehensive, deliberate pathway; A readiness tool for Squad Lethality and Human Performance assessment; Transformative ability to access and exploit data across domains and levels of command and a Synthetic Training Environment (STE) tool enabling on-demand squad training.

The SiVT program will not be requesting BASE RDTE funding in FY 2023.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: Engineering, Support, Test & Evaluation for SiVT ***FY 2022 Plans:*** Funding will finalize the prototype development and demonstration of production representative articles to support First Unit Issue (FUI). ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Decrease from FY2022 to FY2023 is due to finalizing the prototype development and demonstration of production representative articles to support First Unit Issue (FUI).	-	4.817	-
Title: SBIR/STTR Transfer ***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	-	0.183	-
Accomplishments/Planned Programs Subtotals	-	5.000	-

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0604121A / *Synthetic Training Environment Refinement & Prototyping*	**Project (Number/Name)** CR6 / *STE Squad Immersive Virtual Trainer (SiVT)*

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
• NA2020: *Synthetic Training Environment (STE)*	13.063	-	0.000	-	0.000	-	-	-	-	Continuing	Continuing
• NA2211: *STE SIVT (IVAS TRAINER)*	-	69.266	36.131	-	36.131	-	-	-	-	0.000	105.397

Remarks

Base Procurement dollars for Squad immersive Virtual Trainer (SiVT) will conduct the procurement of hardware associated with the SiVT Kits, in addition to, conducting Technology Insertion Engineering Change Proposals (TIECPs) for Outdoor Capability. Lastly funds will provide New Equipment Training and associated fielding support.

D. Acquisition Strategy

Integrated Visual Augmentation System (IVAS) prototype OTA was awarded November 2018 to provide Soldiers the Fight, Rehearse, and Train capability to the close combat Soldiers. Squad Immersive Virtual Trainer (SiVT) provides the training capability for home station training. The SiVT capabilities developed during the prototype effort was assessed through Soldier Touch Points and feedback in support of the follow on production efforts. Currently, the Synthetic Training Environment Cross Functional Team (STE CFT) and the Program Executive Office for Simulation, Training and Instrumentation (PEO STRI) are working closely with Soldier Lethality CFT and PEO Soldier to leverage their production OTA contract for an anticipated 2nd QTR FY 2022 award in order to meet First Unit Issued in 1st Quarter FY 2023 and an incremental approach to First Unit Equipped (FUE) in FY 2024. The Production and Fielding OTA will be a five-year effort fielding to all active and reserve components close combat units.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0604121A / *Synthetic Training Environment Refinement & Prototyping*	Project (Number/Name) CR6 / *STE Squad Immersive Virtual Trainer (SiVT)*	

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
SBIR/STTR Transfer	TBD	Various : Various	-	-		0.183		-		-		-	0.000	0.183	-
		Subtotal	-	-		0.183		-		-		-	0.000	0.183	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
SiVT Development	Option/ FP	Microsoft Corporation : Redmond, WA	-	-		4.817	Feb 2022	-		-		-	0.000	4.817	-
		Subtotal	-	-		4.817		-		-		-	0.000	4.817	N/A

	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
Project Cost Totals	-	-		5.000		-		-		-	0.000	5.000	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0604121A / *Synthetic Training Environment Refinement & Prototyping*	**Project (Number/Name)** CR6 / *STE Squad Immersive Virtual Trainer (SiVT)*

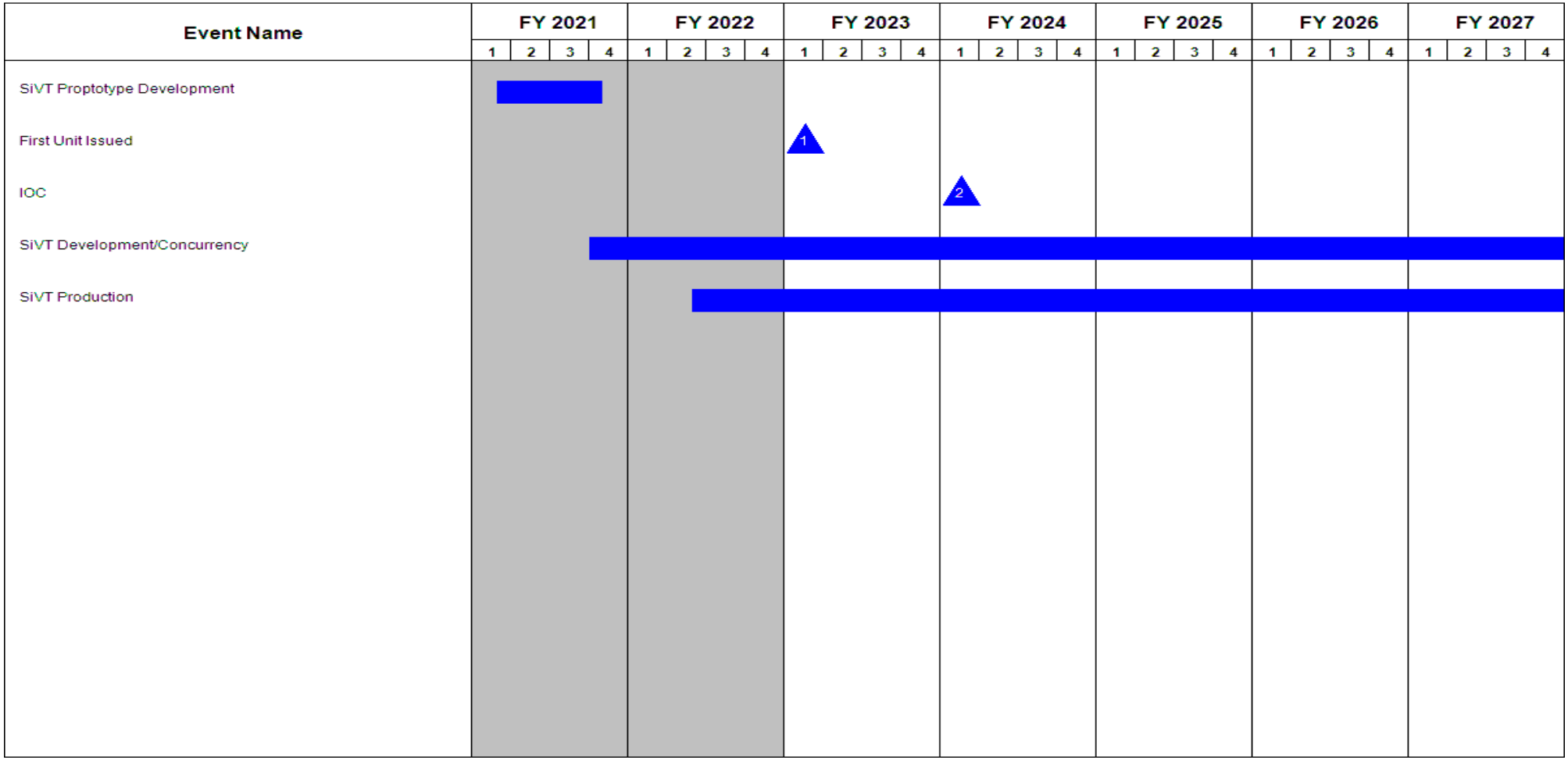

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0604121A / *Synthetic Training Environment Refinement & Prototyping*	**Project (Number/Name)** CR6 / *STE Squad Immersive Virtual Trainer (SiVT)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
SiVT Proptotype Development	1	2019	4	2021
First Unit Issued	1	2023	1	2023
IOC	1	2024	1	2024
SiVT Development/Concurrency	4	2021	4	2027
SiVT Production	2	2022	4	2027

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0604121A / *Synthetic Training Environment Refinement & Prototyping*	Project (Number/Name) CR7 / *STE Soldier Virtual Trainer (SVT)*	

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
CR7: *STE Soldier Virtual Trainer (SVT)*	-	-	11.288	5.558	-	5.558	7.950	13.001	-	-	0.000	37.797
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Soldier Virtual Trainer (SVT) is enabled by the Synthetic Training Environment (STE) and is a virtual immersive trainer that combines and integrates several individual Soldier training capabilities: Weapon Skills Development (WSD), Joint Fires Training (JFT), and Use of Force (UoF). (1) WSD provides immersive capability to meet individual/crew weapons training in support of Army integrated weapon training strategies. (2) JFT provides certification and qualification of Joint Fires Observers (JFO). This includes the training of types II and III close air support according to the JFO Memorandums of Agreement. (3) UoF training enables Soldiers to replicate current Non-Lethal (NL) devices, munitions that demand the user to determine the appropriate level of force, select the correct device, and comply with doctrine, legal policy, and guidance for NL device employment. SVT will take a phased acquisition approach in developing the three capabilities beginning with WSD, UoF, and JFT respectively. SVT's acquisition strategy implementation and award will reduce impact of replacing currently fielded sustained Program of Records (Engagement Skills Trainer II (EST II) and Call for Fire Trainer III (CFFT III)). EST and CFFT PoRs are currently in sustainment awaiting to be replaced by SVT.

FY 2023 Base RDTE dollars in the amount of $5.558 million for SVT will be used for the technical development prototype design for the SVT core and Weapons Skills Development (WSD). The prototype designs will inform; requirements, technology readiness level maturity, design of the SVT core and WSD, and level of effort to integrate with the common synthetic environment.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: Engineering, Support, Test & Evaluation for SVT	-	10.876	5.558
Description: Direct engineering development, support and test of the Soldier Virtual Trainer (SVT) program through awarded OTA vehicles. ***FY 2022 Plans:*** FY 2022 Base RDTE dollars in the amount of $10.876 million will be used for the technical development and demonstration of prototype designs for the Weapons Skills Development (WSD), Joint Fires Training (JFT) and Use of Force (UoF) capabilities. The prototype solution will assess industry and academia's technical readiness. ***FY 2023 Plans:*** FY 2023 Base RDTE dollars in the amount of $5.558 million will be used for the continued technical development prototype design for the SVT core and Weapons Skills Development (WSD) capability. The prototype solution will assess industry and academia's technical readiness. ***FY 2022 to FY 2023 Increase/Decrease Statement:***			

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0604121A / *Synthetic Training Environment Refinement & Prototyping*	**Project (Number/Name)** CR7 / *STE Soldier Virtual Trainer (SVT)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
$5.318 million decrease in funding will ensure the SVT development prioritization remains in sequence with the other aspects of the STE portfolio. Initial focus is SVT Core and Weapons Skills Development.			
Title: SBIR/STTR Tansfer ***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	-	0.412	-
Accomplishments/Planned Programs Subtotals	-	11.288	5.558

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

The SVT uses the Synthetic Training Environment (STE) modular open systems architecture via virtual interface and hardware standards. SVT optimizes training delivery through the employment of a combination of Operational Environment (OE) mixed reality visualization and Natural User Interface (NUI) technologies to maximize efficiencies for the integration of system capabilities. The SVT system design combines and integrates several individual Soldier and squad training capabilities, Weapon Skill Development (WSD), Joint Fires Training (JFT), and Use of Force (UoF), into a single capability that can be conducted simultaneously or individually and enable physical movement/exertion related to the execution of a Soldier individual and squad collective training tasks. The system is required to be person transportable and deployable worldwide. It delivers training at the Point of Need (PoN) supporting Army-wide formations such as artillery, Military Police, and units for weapons skills development.

Status: SVT is currently planning to enter the Middle Tier of Acquisition Rapid Prototyping Pathway in 3QFY2022. Acquisition planning is in progress for an OTA award in 2QFY2022. Solider Touch points (STPs) and an Operational Assessment (OA) will be conducted during the development phase to ensure Warfighter feedback is incorporated and facilitate acceptance. SVT will take a phased acquisition approach in developing the three capabilities beginning with WSD, UoF, and JFT respectively.

A Soldier/Squad Virtual Trainer OTA was awarded in FY 2019 in support of STE prototype initiatives and SVT: S/SVT Weapons Optimization (market research only). Confidence events and evaluations were built into the OTA in determining the readiness and availability of technology in support of FY 2024 IOC.

The SVT OTA's Prime(s) and Sub-vendors will execute the STE agreement(s) through an Agile development process with established success criteria and their DevSecOps processes and develop prototypes to prove out the three SVT capabilities: WSD, UoF, and JFT. SVT Vendors will continually include the Government and all stakeholders (Internal and external) in the SVT Hardware prototype development and the STE-IS Agile development integration process. This process will ensure all

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0604121A / *Synthetic Training Environment Refinement & Prototyping*	**Project (Number/Name)** CR7 / *STE Soldier Virtual Trainer (SVT)*

parties have transparency and early input into the modular design effort in order to support success of the product(s) being developed for the SVT and interacting with the STE-IS. Other acquisition elements such as testing, contracting, and technology transition will consider any and all means available to innovate and incorporate complementary support to add momentum in this approach.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0604121A / *Synthetic Training Environment Refinement & Prototyping*	Project (Number/Name) CR7 / *STE Soldier Virtual Trainer (SVT)*	

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
SBIR/STTR Transfer	TBD	Various : Various	-	-		0.412		-		-		-	Continuing	Continuing	Continuing
		Subtotal	-	-		0.412		-		-		-	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
Soldier Virtual Trainer (SVT) Development	C/FFP	TBD : Orlando, FL	-	-		10.876	Jun 2022	5.558	Mar 2023	-		5.558	Continuing	Continuing	Continuing
		Subtotal	-	-		10.876		5.558		-		5.558	Continuing	Continuing	N/A

	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
Project Cost Totals	-	-		11.288		5.558		-		5.558	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0604121A / *Synthetic Training Environment Refinement & Prototyping*	**Project (Number/Name)** CR7 / *STE Soldier Virtual Trainer (SVT)*

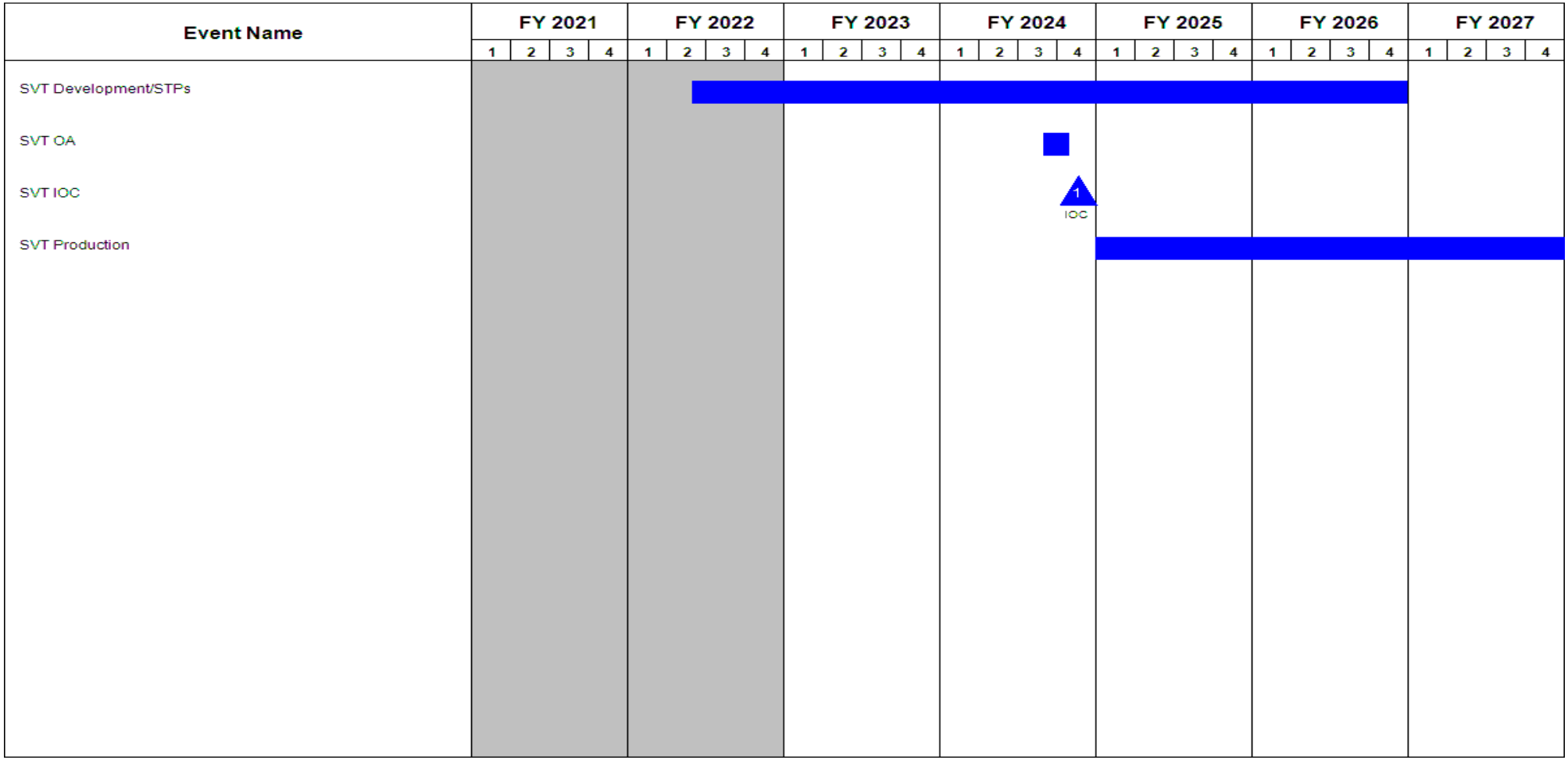

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0604121A / *Synthetic Training Environment Refinement & Prototyping*	**Project (Number/Name)** CR7 / *STE Soldier Virtual Trainer (SVT)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
SVT Development/STPs	2	2022	4	2026
SVT OA	3	2024	4	2024
SVT IOC	4	2024	4	2024
SVT Production	1	2025	4	2028

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0604121A / *Synthetic Training Environment Refinement & Prototyping*	Project (Number/Name) FD6 / *Synthetic Training Environment Refine & Prototype*	

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
FD6: *Synthetic Training Environment Refine & Prototype*	-	105.354	-	-	-	-	-	-	-	-	0.000	105.354
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

In FY 2022, all requirements from PE 0604121A, Project FD6 - Synthetic Training Environment Refine & Prototype were realigned to Projects CR2 (STE Information Systems [TSS, TMT]), CR3 (STE Live), CR4 (STE One World Terrain [OWT]), CR5 (STE Reconfigurable Virtual Trainer [RVCT]), and CR7 (STE Soldier Virtual Trainer [SVT]).

A. Mission Description and Budget Item Justification

The STE will be a single, yet comprehensive interconnected training system that provides a Synthetic Training Environment, in which air and ground units from Solider/ crew/section through Army Service Component Command (ASCC) conduct realistic multi-echelon / multi-domain combined arms maneuver, air ground integration, and mission command training. All of these components are interconnected and based off of a standard, modular and open system architecture model.

The STE-Information System (STE-IS) consists of three core functions: Training Management Tool (TMT), Training Simulation Software (TSS), and One World Terrain (OWT). The Training Management Tool (TMT) is the capability that enables units to quickly plan collective training events, prepare training events; execute and monitor events, and assess event results and readiness. The Training Simulation Software (TSS), the core STE simulation engine, provides the physical and behavior models necessary to replicate the operational environment to enable collective training from Soldier/Squad through ASCC. The STE-IS is a dynamic, digital representation of the Operational Environment (OE) and the military capabilities in the scenario. The TSS provides entity, aggregate, and common services, as well as adjudicates STE-IS interactions at the entity level (e.g., Computer-Generated Forces (CGF), and synthetic equipment). One World Terrain (OWT) is a 3-Dimensional global terrain capability and associated information services that supports the virtual replication of the physical Earth and complexities of the Operational Environment in support of training in the STE. In FY2021, the STE-IS adopted the execution of the Software Acquisition Pathway, tailored for software intensive systems. The STE-IS plans to facilitate rapid and iterative delivery of the TSS/TMT and OWT capabilities through Minimal Viable Products (MVP) and Minimum Viable Capability releases (MVCR) to support Squad (Sq) to Brigade (Bde) level training through 4QFY2023.

The STE-IS and RVCT requirements, which are codified in Abbreviated Capabilities Development Documents (A-CDD) version 2 approved 2 June 2020, directly support the Army Collective Training Environment - Initial Capabilities Document (ACTE-ICD) as the Army's cornerstone for replicating the Operational Environment (OE) during training events enabling the Army to train as it fights. Separate, but interoperable, RVCT systems are required for both air and ground collective training. The Air RVCT will represent the U.S. Army, Army National Guard, and Army Reserves fleet of rotary wing aircraft, and specified U.S. Marine Corps (USMC) aircraft. The Ground RVCT will represent ground/amphibious track and wheeled vehicles from the U.S. Army, Army National Guard, Special Operations Units and the USMC.

The Reconfigurable Virtual Collective Trainer (RVCT) is the Army's next generation Virtual Training System for conducting collective maneuver training, collective gunnery training, mission rehearsal, and pre-deployment training; that will prepare units for multi-domain operations (MDO). The RVCT includes aviation platforms

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0604121A / *Synthetic Training Environment Refinement & Prototyping*	**Project (Number/Name)** FD6 / *Synthetic Training Environment Refine & Prototype*

(RVCT-A), ground platforms (RVCT-G), and dismounted infantry (RVCT-S) devices. The RVCT is transportable to the point of need allowing units to train anywhere in the world. The RVCT will be enabled using the Synthetic Training Environment-Information Systems (STE-IS) software, which provides a fully interactive, real time simulated battlefield. The RVCT hardware is modular in design and will accommodate the integration of new technologies and future weapon systems, and will interoperate with the current Constructive and Live Training Environments.

The Soldier Virtual Trainer (SVT) is enabled by the Synthetic Training Environment (STE) and is a virtual immersive trainer that combines and integrates several individual Soldier training capabilities: Weapon Skills Development (WSD), Joint Fires Training (JFT), and Use of Force (UoF). (1) WSD provides immersive capability to meet individual/crew weapons training in support of Army integrated weapon training strategies. (2) JFT provides certification and qualification of Joint Fires Observers (JFO). This includes the training of types II and III close air support according to the JFO Memorandums of Agreement. (3) UoF training enables Soldiers to replicate current Non-Lethal (NL) devices, munitions that demand the user to determine the appropriate level of force, select the correct device, and comply with doctrine, legal policy, and guidance for NL device employment. Weapon Skills Development (WSD), Joint Fires Training (JFT), and Use of Force (UoF), into a single capability that can be used simultaneously or individually.

The Synthetic Training Environment (STE) Live program develops live training systems in concert with the Cross Functional Team STE initiatives. The STE Live program converges live training with the STE, providing units the necessary training components to accelerate and sustain combined arms maneuver proficiency in support of multi-domain operations. The STE Live program focuses on the development of the 12 engagement types and 5 instrumentation enablers ("12+5"). The 12 engagement types are Direct Fire, Counter-Defilade Fire, Indirect Fire, Dropped Objects, Placed Objects, Thrown Objects, Guided Weapons, Autonomous Weapons, Cyber, Directed Energy, Radiant Energy, and Plume. The 5 instrumentation enablers are Calculations, Networks, Sensors, Terrains, and Transmitters.

In FY 2022, all requirements from Project FD6 - Synthetic Training Environment Refine & Prototype were realigned to Projects CR2 (STE Information Systems [TSS, TMT]), CR3 (STE Live), CR4 (STE One World Terrain [OWT]), CR5 (STE Reconfigurable Virtual Trainer [RVCT]), and CR7 (STE Soldier Virtual Trainer [SVT]).

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: Engineering, Support, Test & Evaluation for STE-IS ***Description:*** Direct engineering development, support and test of the TSS/TMT and OWT capability through awarded OTA vehicles.	62.120	-	-
Title: Engineering, Support, Test & Evaluation for RVCT ***Description:*** Direct engineering development, support and test of the Reconfigurable Virtual Collective Trainer (RVCT) program through awarded OTA vehicles.	32.834	-	-
Accomplishments/Planned Programs Subtotals	94.954	-	-

	FY 2021	FY 2022
Congressional Add: Congressional Add for STE-LIVE - (Army requested transfer from WTCV line 5)	10.400	-

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0604121A / *Synthetic Training Environment Refinement & Prototyping*	**Project (Number/Name)** FD6 / *Synthetic Training Environment Refine & Prototype*

	FY 2021	FY 2022
FY 2021 Accomplishments: FY 2021 Base RDTE dollars in the amount of $10.400 million heavily focuses on the development and prototype solutions of the STE Live Force of Force Direct/Indirect/Counter-defilade capabilities. Funds support the continued development and assessment of technical capabilities through technical assessments and user assessments, and test planning events. FY 2021 will complete the development prototype activities on the training solutions through Other Transactions agreement. The funds will be used to develop mature and more capable direct fire prototype solution to replace some of the systems reaching end of life and accelerate the maturation of key technologies needed to introduce indirect fire and counter defilade force on force engagement enablers into the live training environment.		
Congressional Adds Subtotals	10.400	-

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
• NA2000: *Synthetic Training Environment (STE)*	13.063	92.266	255.670	-	255.670	222.527	173.692	335.411	253.509	Continuing	Continuing

Remarks

D. Acquisition Strategy

STE will be developed and acquired as an incrementally deployed software intensive program leveraging accelerated acquisition authorities when appropriate. To ensure speed and agility to deliver and modernize STE, a modular open systems architecture (MOSA) will be developed enabling the Army to exploit rapid advancements in cutting-edge commercial visualization and immersion technologies. STE will employ a combined approach to enable agile development of the STE-IS with parallel incremental development of the RVCT A/G, SiVT and SVT. This model facilitates leveraging commercial and Government technology development that are necessary for future Live and Constructive centered increments. Other acquisition elements such as testing, contracting, and technology transition will consider any and all means available to innovate and incorporate complementary support to add momentum in this approach.

STE Increment 1 IOC is programmed for 4Q FY 2023. IOC is defined as the first fielding and acceptance of the STE-IS capability at installations identified IAW the distribution plan. IOC fielded STE systems will include the following attributes: verification, validation and accreditation process complete; STE-IS capabilities in support of RVCT A/G and Squad Immersive Virtual Trainer (SiVT) IOC in FY 2023 and ultimately the Soldier Virtual Trainer (SVT) IOC in FY 2024; meeting Information Assurance and Risk Management Framework requirements. New Equipment Training (NET) will include the capability to support the RVCT, and the ability to provide initial sustainment via interim contractor support (ICS). Soldiers will interface with the STE-IS through the Training Management Tools, the Reconfigurable Virtual Collective Trainer (RVCT) and SiVT via the Integrated Visual Augmentation System (IVAS).

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0604121A / *Synthetic Training Environment Refinement & Prototyping*	**Project (Number/Name)** FD6 / *Synthetic Training Environment Refine & Prototype*

Future phases currently under market research will provide Soldier Virtual Trainer (SVT) capabilities and integrate Live training components as well as Next Generation Constructive (NGC).

Five (5) OTAs were awarded in FY 2019 in support of STE prototype initiatives: STE-IS (TSS/TMT, OWT), RVCT, Live (market research only), and SVT Weapons Optimization (market research only). Confidence events and evaluations were built into the OTAs to determine the readiness and availability of technology in support of FY 2023 IOC. Prime(s) and Sub-vendors will execute the STE agreement(s) through an Agile development process with established success criteria and their DevSecOps processes. Vendors will continually include the Government and all stakeholders (Internal and external) in the Agile development process. This process will ensure all parties have transparency and early input into the modular design effort in order to support success of the product(s) being developed for the STE.

The initial TSS/TMT OTA allowed the Government to fully understand and decompose the requirements, establish/describe interfaces between TSS/TMT and RVCT, Avionics Software Emulation (AvSE) and OWT capabilities, and exposed the Government to the readiness of additional technologies that will enable the delivery of an integrated STE. These lesson learned, along with the incorporating the revised A-CDD updates forms the basis of the new TSS/TMT follow-on competition planned for award in 3QFY21.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0604121A / *Synthetic Training Environment Refinement & Prototyping*	**Project (Number/Name)** FD6 / *Synthetic Training Environment Refine & Prototype*	

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
Management Services	Various	Various : Orlando, FL	7.062	-		-		-		-		-	0.000	7.062	12.454
		Subtotal	7.062	-		-		-		-		-	0.000	7.062	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
Product Development STE-IS/ TSS/TMT	C/FP	MAK Technologies : Cambridge, MA	35.750	5.618	Oct 2020	-		-		-		-	0.000	41.368	41.368
Product Development STE-IS/ TSS/TMT Follow-on	C/TBD	ACC-Orlando : Orlando, FL	-	13.300	May 2021	-		-		-		-	Continuing	Continuing	Continuing
STE-IS AvSE Development/Integration	Various	PEO STRI : Orlando, FL	-	7.361	Mar 2021	-		-		-		-	Continuing	Continuing	Continuing
Product Development STE-IS/One World Terrain	C/FP	Maxar Technologies (formerly VRICON) : Westminster, CO	25.582	35.841	Dec 2020	-		-		-		-	Continuing	Continuing	Continuing
Product Development Reconfigurable Virtual Collective Trainers	C/FP	Cole Engineering Services Inc : Orlando, FL	53.538	32.834	Feb 2021	-		-		-		-	Continuing	Continuing	Continuing
Product Development STE-LIVE	C/FP	Multiple (Raytheon, Cubic, Amentum) : Orlando, FL	0.100	-		-		-		-		-	Continuing	Continuing	Continuing
Congressional Add - STE-LIVE	C/FP	Multiple : Orlando, FL	-	10.400	Jun 2021	-		-		-		-	0.000	10.400	10.400
Product Development Soldier/Squad Virtual Trainer (IVAS)	C/FP	Microsoft : Redmond, WA	39.228	-		-		-		-		-	0.000	39.228	34.792
Small Business Innovation/ Tech Insertion	Various	Various : Orlando, FL	3.270	-		-		-		-		-	0.000	3.270	3.270
		Subtotal	157.468	105.354		-		-		-		-	Continuing	Continuing	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0604121A / *Synthetic Training Environment Refinement & Prototyping*	**Project (Number/Name)** FD6 / *Synthetic Training Environment Refine & Prototype*

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

Remarks

1. Product Development STE-IS/ TSS/TMT: The initial TSS/TMT OTA allowed the Government to fully understand and decompose the requirements, establish/describe interfaces between TSS/TMT and RVCT, Avionics Software Emulation (AvSE) and OWT capabilities, and exposed the Government to the readiness of additional technologies that will enable the delivery of an integrated STE. These lesson learned, along with the incorporating the revised A-CDD updates forms the basis of the new TSS/TMT follow-on competition planned for award in 3QFY21.
2.Product Development STE-IS/One World Terrain: VRICON was acquired by Maxar Technologies on 1 July 2020.

	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	164.530	105.354		-		-		-		-	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0604121A / *Synthetic Training Environment Refinement & Prototyping*	**Project (Number/Name)** FD6 / *Synthetic Training Environment Refine & Prototype*

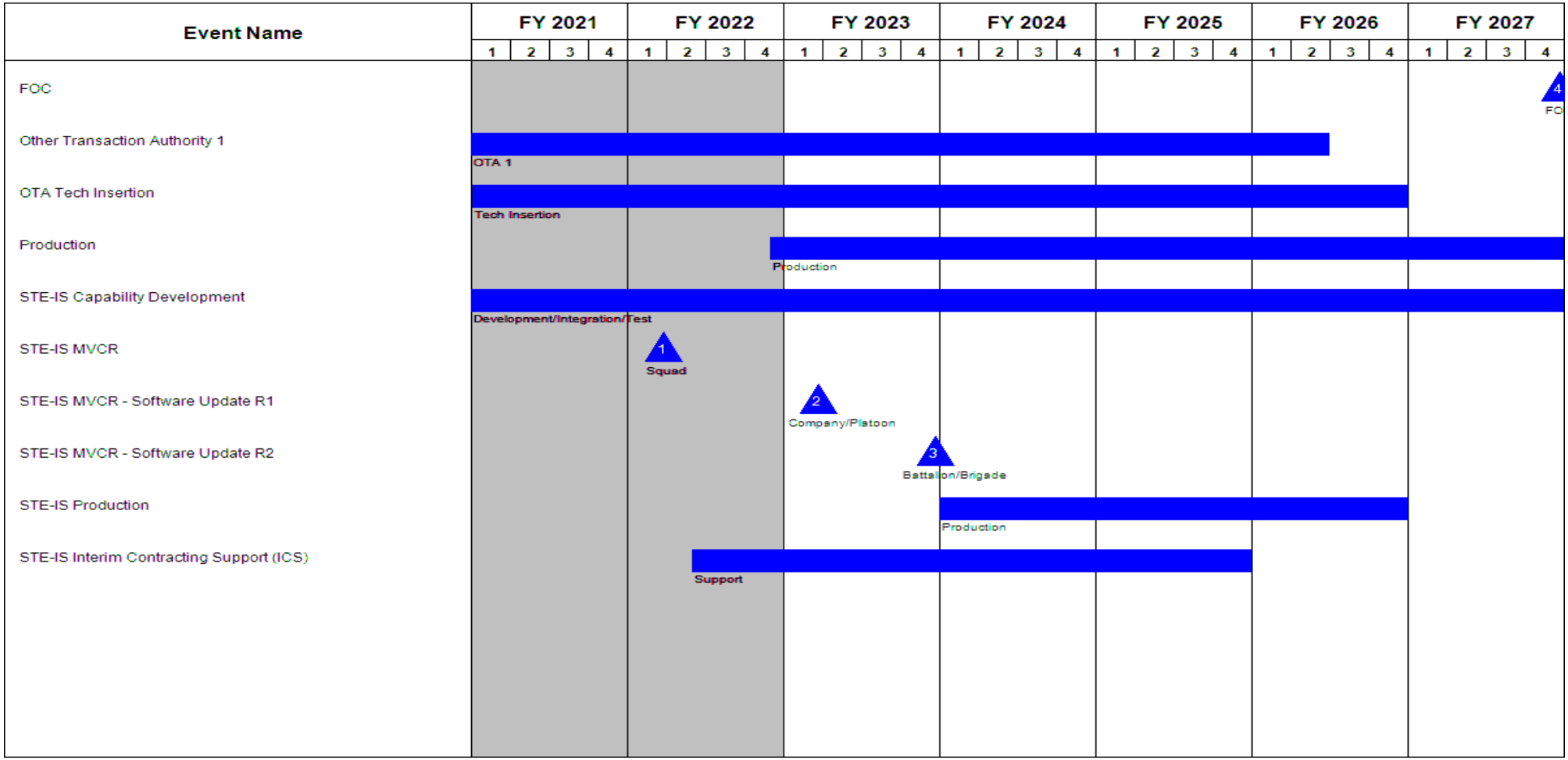

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0604121A / *Synthetic Training Environment Refinement & Prototyping*	**Project (Number/Name)** FD6 / *Synthetic Training Environment Refine & Prototype*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
A-CDD	3	2020	3	2020
FOC	4	2027	4	2027
Other Transaction Authority 1	3	2019	2	2026
OTA Tech Insertion	1	2020	4	2026
Production	4	2022	4	2027
STE-IS Capability Development	3	2019	4	2027
STE-IS MVCR	1	2022	1	2022
STE-IS MVCR - Software Update R1	1	2023	1	2023
STE-IS MVCR - Software Update R2	4	2023	4	2023
STE-IS Production	1	2024	4	2026
STE-IS Interim Contracting Support (ICS)	2	2022	4	2025

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0604121A / *Synthetic Training Environment Refinement & Prototyping*	Project (Number/Name) SV1 / *Soldier/Squad Virtual Trainer*	

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
SV1: *Soldier/Squad Virtual Trainer*	-	6.739	-	-	-	-	-	-	-	-	0.000	6.739
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

In FY 2022, all requirements from Project SV1 - Soldier/Squad Virtual Trainer were realigned to Projects CR4 (STE One World Terrain [OWT]) and CR6 (STE Squad Immersive Virtual Trainer [SiVT]).

A. Mission Description and Budget Item Justification

The United States Army identified a near term requirement for a Soldier and Squad Virtual Trainer (S/SVT) to address the small unit collective training gaps, and to merge the Engagement Skills Trainer (EST) II, Call for Fire Trainer (CFFT) III, and the current non program of record Use-of-Force trainer into a single program starting in FY 2021. The S/SVT is the next generation trainer that enables Soldiers/Marines to conduct squad, weapons, and joint fires training, as well as rehearse lethal and non-lethal use-of-force interactions prior to live events to measure the unit's Mission Essential Task List proficiency, which will then provide a unit's Standards for Training Proficiency.

S/SVT is comprised of Squad Immersive Trainer (SiVT); also commonly referred to as both the IVAS and the Soldier Virtual Trainer (SVT) capabilities. The first increment of the S/SVT, which is the Squad immersive Virtual Trainer (SiVT) capability, integrates into the Heads Up Display (HUD) 3.0 as part of the Integrated Visual Augmentation System (IVAS). Increments 2 and 3 of S/SVT combines individual Soldier and squad training into a single capability and includes STE Squad Capability (SSC), Weapon Skill Development (WSD), Joint Fires Training (JFT), and Use of Force (UoF), which integrate the NEXTGEN Marksmanship and the NEXTGEN Call For Fire Artillery Virtual Training capability into the STE baseline.
The second phase; the SVT system design combines and integrates several individual Soldier and squad training capabilities, Weapon Skills Development (WSD), Joint Fires Training (JFT), and Use of Force (UoF).

SVT is dependent and interconnected through the STE-IS software baseline . The STE-IS core cross-cutting capabilities will deliver software, application(s) and services that optimize cloud-enabled capability simulation processing to Reconfigurable Virtual Collective Trainer (RVCT), Solider Virtual Trainer (SVT), and the future Next Generation Constructive (NGC) capability to include Force-on-Force (FoF) and Force-on-Target (FoT) Live training instrumentation .

FY 2021 funding of $6.739 million reinitiates the market research and prototype solutions for the SVT solution assessing industry and academia's technical readiness and availability around Weapons Skills Development, Joint Fires and Use of Force.

In FY 2022, all requirements from Project SV1 - Soldier/Squad Virtual Trainer were realigned to Projects CR4 (STE One World Terrain [OWT]) and CR6 (STE Squad Immersive Virtual Trainer [SiVT]).

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0604121A / *Synthetic Training Environment Refinement & Prototyping*	**Project (Number/Name)** SV1 / *Soldier/Squad Virtual Trainer*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: Engineering, Support, Test & Evaluation	6.739	-	-
Description: Market Research and Prototype Assessment of Soldier Virtual Trainer capabilities.			
Accomplishments/Planned Programs Subtotals	6.739	-	-

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
• NA2000: *Synthetic Training Environment (STE)*	13.063	92.266	255.670	-	255.670	222.527	173.692	335.411	253.509	Continuing	Continuing

Remarks

D. Acquisition Strategy

The S/SVT uses the Synthetic Training Environment (STE) modular open systems architecture via virtual interface and hardware standards. S/SVT optimizes training delivery through the employment of a combination of Operational Environment (OE) mixed reality visualization and Natural User Interface (NUI) technologies to maximize efficiencies for the integration of system capabilities. The S/SVT system design combines and integrates several individual Soldier and squad training capabilities, Weapon Skill Development (WSD), Joint Fires Training (JFT), and Use of Force (UoF), into a single capability that can be conducted simultaneously or individually and enable physical movement/exertion related to the execution of Soldier/Marine individual and squad collective training tasks. The system is required to be man transportable and deployable worldwide. It delivers training at the Point of Need (PoN) supporting Army-wide formations such as artillery, Military Police, and units for weapons skills development.

Two (2) OTAs awarded in FY 2019 in support of S/SVT prototype initiatives: SiVT (IVAS) Holistic Joint with Soldier Lethality, and SVT Weapons Optimization (market research only). Confidence events and evaluation criteria were built into the OTAs to determine technical availability and readiness in support of 4Q 2021 IOC. Prime(s) and Sub-vendors will execute the agreement(s) through an Agile development process with established success criteria and their DevOps processes. Vendors will continually include the Government and all stakeholders (Internal and external) in the Agile development process. This process will ensure all parties have transparency and early input into the design effort and success of the product(s) being developed for the STE.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0604121A / *Synthetic Training Environment Refinement & Prototyping*	Project (Number/Name) SV1 / *Soldier/Squad Virtual Trainer*	

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
Product Development	C/FFP	Aberdeen Proving Grounds : MD	71.382	6.739	May 2021	-		-		-		-	0.000	78.121	78.121
		Subtotal	71.382	6.739		-		-		-		-	0.000	78.121	N/A

	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
Project Cost Totals	71.382	6.739		-		-		-		-	0.000	78.121	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0604121A / *Synthetic Training Environment Refinement & Prototyping*	**Project (Number/Name)** SV1 / *Soldier/Squad Virtual Trainer*

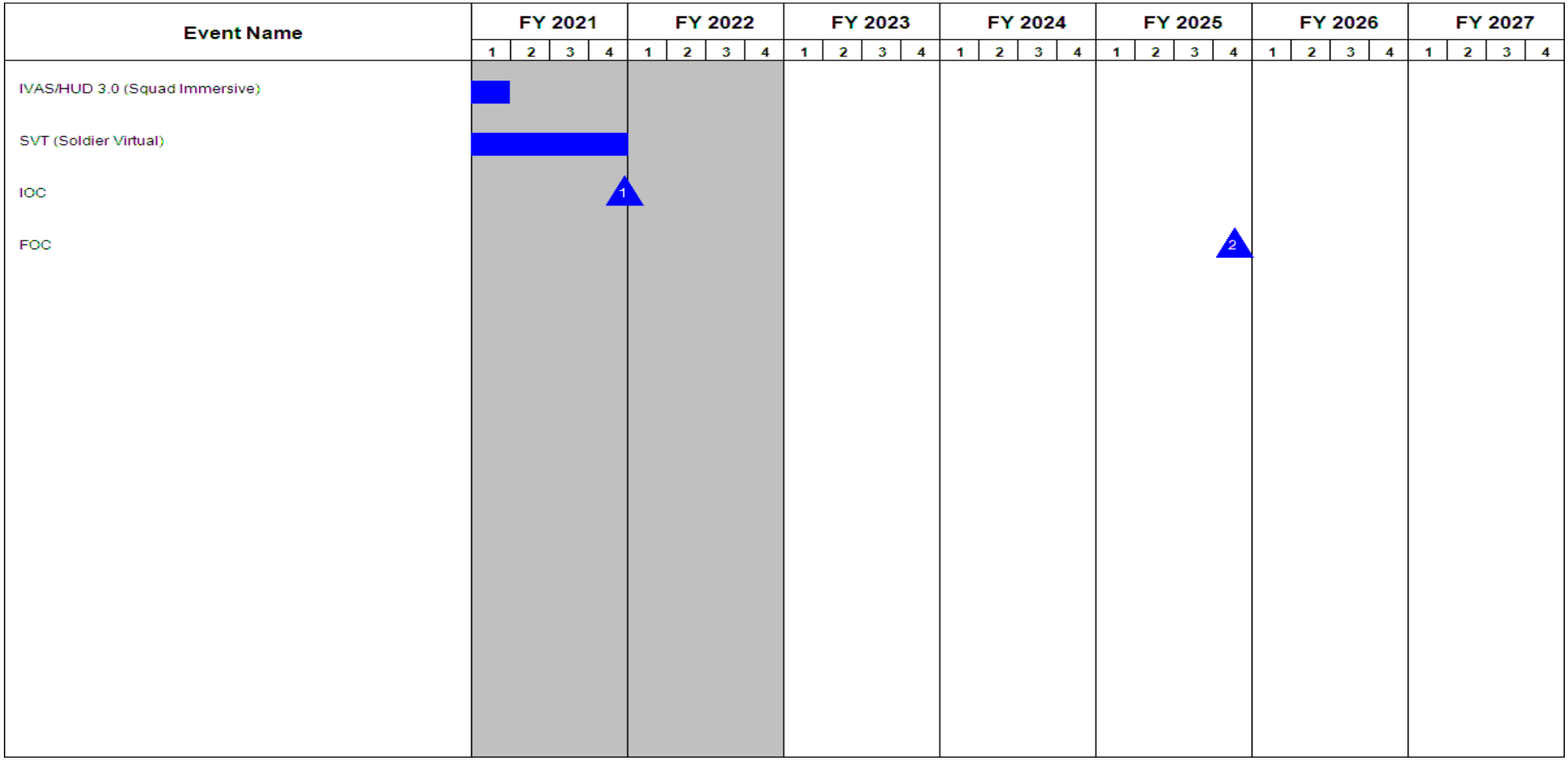

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0604121A / *Synthetic Training Environment Refinement & Prototyping*	**Project (Number/Name)** SV1 / *Soldier/Squad Virtual Trainer*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
IVAS/HUD 3.0 (Squad Immersive)	2	2018	1	2021
SVT (Soldier Virtual)	2	2019	4	2021
IOC	4	2021	4	2021
FOC	4	2025	4	2025