

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Army **Date:** March 2023

Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army / BA 4: Advanced Component Development & Prototypes (ACD&P)	R-1 Program Element (Number/Name) PE 0604121A / Synthetic Training Environment Refinement & Prototyping
--	---

COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	-	198.815	242.468	109.714	-	109.714	87.684	55.685	121.774	123.273	0.000	939.413
CR2: STE Information Systems (TSS, TMT)	-	98.182	111.271	49.616	-	49.616	35.491	35.132	34.477	34.861	0.000	399.030
CR3: STE Live	-	29.270	67.396	23.839	-	23.839	33.419	14.341	80.909	81.812	0.000	330.986
CR4: STE One World Terrain (OWT)	-	31.374	1.387	13.192	-	13.192	6.027	6.212	6.388	6.600	0.000	71.180
CR5: STE Reconfigurable Virtual Trainer (RVCT)	-	24.296	20.726	15.282	-	15.282	-	-	-	-	0.000	60.304
CR6: STE Squad Immersive Virtual Trainer (SiVT)	-	4.817	36.130	-	-	-	-	-	-	-	0.000	40.947
CR7: STE Soldier Virtual Trainer (SVT)	-	10.876	5.558	7.785	-	7.785	12.747	-	-	-	0.000	36.966

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 multiple Other Transaction Authority (OTA) contracts awarded, and will implement an incremental fielding approach leveraging the Software Acquisition pathway (SWP) and the Middle Tier of Acquisition (MTA) pathway. The STE will be available where training occurs (home station, combat training centers, armories, institutions, and deployed locations).

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Army	Date: March 2023
---	-------------------------

Appropriation/Budget Activity 2040: <i>Research, Development, Test & Evaluation, Army / BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0604121A / <i>Synthetic Training Environment Refinement & Prototyping</i>
---	--

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 Integrated Visual Augmentation System (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 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.

FY2024 Projects CR2 through CR7 Base RDTE dollars in the amount of \$109.232 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.

The total cost of the STE Live (CR3) Middle Tier of Acquisition (MTA) effort is \$136 million RDT&E from FY2021 to FY2024.

The total cost of the RVCT (CR5) MTA effort is \$67 million RDT&E from FY2022 to FY2024.

The total cost of the SVT (CR7) MTA effort is \$103 million RDT&E from FY2022 to FY2026.

B. Program Change Summary (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	206.335	166.452	101.495	-	101.495
Current President's Budget	198.815	242.468	109.714	-	109.714
Total Adjustments	-7.520	76.016	8.219	-	8.219
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	76.130			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-7.520	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	8.219	-	8.219
• FFRDC Transfer	-	-0.114	-	-	-

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Army **Date:** March 2023

Appropriation/Budget Activity 2040: <i>Research, Development, Test & Evaluation, Army / BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0604121A / <i>Synthetic Training Environment Refinement & Prototyping</i>
---	--

Congressional Add Details (\$ in Millions, and Includes General Reductions)	FY 2022	FY 2023
Project: CR3: STE Live		
Congressional Add: <i>Congressional Add: Next generation MILES</i>	10.000	-
Congressional Add: <i>Congressional Add: STE Live electronic bullet</i>	-	20.000
Congressional Add: <i>Congressional Add: STE Live OTA acceleration</i>	-	20.000
Congressional Add Subtotals for Project: CR3		
	10.000	40.000
Project: CR4: STE One World Terrain (OWT)		
Congressional Add: <i>Congressional Add: Multi-Sensor Terrain Capture & Processing</i>	4.600	-
Congressional Add Subtotals for Project: CR4		
	4.600	-
Project: CR6: STE Squad Immersive Virtual Trainer (SiVT)		
Congressional Add: <i>Congressional Add: Engineering, Support, Test & Evaluation for SiVT</i>	-	36.130
Congressional Add Subtotals for Project: CR6		
	-	36.130
Congressional Add Totals for all Projects		
	14.600	76.130

Change Summary Explanation

FY2024 funding increase supports Project CR4 (One World Terrain) to continue developmental efforts to automate processes for producing 3D terrain data that replicates the physical Earth and its complexities for use within the Synthetic Training Environment (STE).

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army										Date: March 2023		
Appropriation/Budget Activity 2040 / 4					R-1 Program Element (Number/Name) PE 0604121A / <i>Synthetic Training Environment Refinement & Prototyping</i>				Project (Number/Name) CR2 / <i>STE Information Systems (TSS, TMT)</i>			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
CR2: <i>STE Information Systems (TSS, TMT)</i>	-	98.182	111.271	49.616	-	49.616	35.491	35.132	34.477	34.861	0.000	399.030
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 converges our current live, virtual, gaming and constructive environments to provide a single, unified training & management environment from Soldier/Squad to Army Service Component Command (ASCC). TSS/TMT provides the ability to train in a single 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) enables units to quickly plan, prepare, execute, monitor, and assess collective training event for readiness. TMT provides an easy-to-use interface, combined with an Intelligent tutor to reduce help-desk support, time, and manpower currently required. TMT leverages training management (data) services and authoritative data sources to enable training on demand regardless of geographic location.

In FY 2021, TSS/TMT entered of the Software Acquisition Pathway. TSS/TMT facilitates rapid and iterative delivery of its capabilities through a Development, Security, and Operations (DevSecOps) to support Squad (Sq) to Brigade (Bde) level training through 4QFY2024.

FY 2024 Base RDTE dollars in the amount of \$49.616 million for TSS/TMT will continue with the DevSecOps approach to achieve Brigade level training capability. Funding will initiate development of the Intel, Sustainment, Cyber, and Protection Warfighting Functions. Base funding will also continue the implementation of DevSecOps process and software production pipeline to support STE-IS capability releases across STE lines of efforts [Reconfigurable Virtual Collective Trainer (RVCT), Soldier Virtual Trainer (SVT), Live Training System (Live)]. Base funding will also continue the development and integration of Avionics Software Emulation (AvSE) with TSS/TMT software baseline to support the Reconfigurable Virtual Collective Trainer (RVCT) Air capability.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2022	FY 2023	FY 2024
Title: Engineering, Support, Test & Evaluation for STE-IS	98.182	107.210	49.616
FY 2023 Plans: Funding supports the STE-IS TSS/TMT completing development efforts to achieve to Company level training capability. Funding initiates development, testing and capability releases to achieve Battalion to Brigade training capability. Development and testing will focus in the following areas:			

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0604121A / <i>Synthetic Training Environment Refinement & Prototyping</i>	Project (Number/Name) CR2 / <i>STE Information Systems (TSS, TMT)</i>

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2022	FY 2023	FY 2024
<p>-- Architecture: continue with the development of a scalable/flexible Modular Open System Approach (MOSA) architecture and Platform Development Kit (PDK). Continue development of open/common interface to support technology insertion and interoperability with STE programs (i.e. - One World Terrain, RVCT-Air, RVCT-Ground, RVCT-Soldier, SVT and Live).</p> <p>-- 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.</p> <p>-- 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 warfighting functions.</p> <p>-- 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) programs.</p> <p>-- Test/Evaluation: Conduct evaluation of TSS/TMT through technical assessments, Soldier Touch Points, test planning events, and Operational Assessments/Demonstrations.</p> <p>-- Continue implementation of the DevSecOps software production pipeline to support STE-IS capability releases by echelons.</p> <p>-- 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.</p> <p>-- Continue the development and integration of Common Software Library (CSL) with TSS/TMT software baseline to ensure that the RVCT-Ground capability is concurrent with Ground platform systems.</p> <p>-- Continue enhancing the TSS/TMT software baseline based on Soldier feedback collected at Soldier Touch Points, Early User Test and Operational Assessments/Demonstrations.</p> <p>FY 2024 Plans: Funding supports the STE-IS TSS/TMT continued development of iterative incremental capability, testing and capability releases to enable Battalion to Brigade training. Continued development and testing will focus in the following areas:</p> <p>-- Architecture: continue with the development of a scalable/flexible Modular Open System Approach (MOSA) architecture and Platform Development Kit (PDK). Continue development of open/common interface to support technology insertion and interoperability with STE programs. Development and support of the STE-IS core architecture and services to support the SVT and LTS use cases.</p> <p>-- 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. Integrate new Authoritative Data Sources (ADS) and initiate development of intelligent tutoring system to simplify and streamline the PPEA process. Continue development of the enterprise management capability to enable equipment and software health monitoring, remote software patching, remote Risk Management Framework compliance audits.</p>			

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0604121A / <i>Synthetic Training Environment Refinement & Prototyping</i>	Project (Number/Name) CR2 / <i>STE Information Systems (TSS, TMT)</i>

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023	FY 2024
-- TSS: continue development of the STE core simulation/game engine. Initiate the development of the Cyber domain to support Multi-Domain Operations (MDO). -- 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) programs. Initiate integration of LTS and SVT core services into the STE-IS core. -- Test/Evaluation: Conduct evaluation of the TSS/TMT MVPs through technical assessments, Soldier Touch Points, test planning events, and Operational Assessments/Demonstration. -- Continue the implementation of the Development, Security, and Operations (DevSecOps) process and the Continuous Integration/Continuous Delivery (CI/CD) software production pipeline. Extend the DevSecOps environment to the other STE programs. -- Continue development and integration of AvSE with TSS/TMT software baseline to ensure that the RVCT-Air capability is concurrent with Aviation platform systems. -- Continue development and integration of Common Software Libraries (CSL) with the TSS/TMT software baseline to ensure that the RVCT-Ground capability is concurrent with Ground platform systems. -- Continue enhancing the TSS/TMT software baseline based on Soldier feedback collected at Soldier Touch Points, Operational Assessments/Demonstrations, and other test events. FY 2023 to FY 2024 Increase/Decrease Statement: Decrease from FY2023 to FY2024 is due to completion of the development efforts supporting Company level training capability			
Title: SBIR/STTR Transfer FY 2023 Plans: Funding transferred in accordance with Title 15 USC §638 FY 2023 to FY 2024 Increase/Decrease Statement: Funding transferred in accordance with Title 15 USC §638	-	4.061	-
Accomplishments/Planned Programs Subtotals	98.182	111.271	49.616

C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• NA2016: STE INFO SYSTEMS (TSS/TMT)	-	9.722	9.648	-	9.648	9.850	10.085	10.091	10.101	0.000	59.497

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0604121A / <i>Synthetic Training Environment Refinement & Prototyping</i>	Project (Number/Name) CR2 / <i>STE Information Systems (TSS, TMT)</i>

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u> <u>Base</u>	<u>FY 2024</u> <u>OCO</u>	<u>FY 2024</u> <u>Total</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
------------------	----------------	----------------	-------------------------------	------------------------------	--------------------------------	----------------	----------------	----------------	----------------	-----------------------------------	-------------------

Remarks

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

D. Acquisition Strategy

The Training Simulation Software/Training Management Tools (TSS/TMT) will use 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) Other Transaction Authority (OTAs) awarded in FY 2019 in support of the STE prototype initiatives which include: TSS/TMT, One World Terrain (OWT), Reconfigurable Virtual Collective Trainer (RVCT), Live Training Systems (market research only), and Soldier Virtual Trainer (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 Development, Security, and Operations (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 to support success of the product(s) being developed for the STE.

Lesson learned and revisions to the A-CDD, form the basis of the TSS/TMT OTA awarded in June 2021. The TSS/TMT OTA will continue development and evaluation iterative software releases through technical assessments, Soldier Touch Points, test planning events, and Operational Assessments/Demonstrations to provide a Squad (Sq) to Brigade (BDE) training capability, in addition to, providing Minimum Viable Capability Releases (MVCR) in support of RVCT Soldier, Ground, Solider Dismounted and Air capability. This OTA will also continue to address Soldier feedback to provide a more robust Brigade and below collective training capability.

Following the success of the initial prototype, a follow-on OTA is planned for award in 4QFY2023. This Follow-on OTA will procure STE-IS System and software license to support fielding of the STE-IS Capability. Additionally, this OTA will initiate development of the Intel, Sustainment, Cyber and Protection Warfighting Functions.

STE Increment 1 IOC implements TSS and TMT, two of the three foundational capabilities of the STE-IS, which is planned for 4QFY2024, and is defined as the first fielding and acceptance of the STE-IS capability at installations identified in accordance with the distribution plan. Increment 1 fielded STE systems will deliver STE-IS software in support of RVCT Soldier, Ground and Air platforms and meet Risk Management Framework (RMF) requirements, and the ability to provide initial sustainment via interim contractor support (ICS). STE-IS TSS/TMT will continue to implement capability enhancement via follow-on STE Increments.

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army **Date:** March 2023

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)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
SBIR/STTR Transfer	TBD	N/A : N/A	-	-		4.061		-		-		-	0.000	4.061	-
Subtotal			-	-		4.061		-		-		-	0.000	4.061	N/A

Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
TSS/TMT Prototype Development	Option/ FFP	Cole Engineering Services : Orlando, FL	-	89.272	Oct 2021	96.635	Oct 2022	6.210	Oct 2023	-		6.210	0.000	192.117	Continuing
AvSE Development/ Integration	Various	CCDC AvMC/ PEO Aviation : Redstone Arsenal, AL	-	7.310	Jan 2022	6.596	Jan 2023	-		-		-	0.000	13.906	Continuing
TSS/TMT Development (Follow-on OTA)	Option/ TBD	TBD : TBD	-	-		-		41.348	Oct 2023	-		41.348	Continuing	Continuing	Continuing
Subtotal			-	96.582		103.231		47.558		-		47.558	Continuing	Continuing	N/A

Remarks
 TSS/TMT Prototype Development - FY2024 BASE RDTE will exercise option on current prototype OTA to support developmental testing and software improvement of Squad to Brigade Capability.
 TSS/TMT Development - FY2024 BASE RDTE will support development effort on follow-on OTA initiate development of the Intel, Sustainment and Protection Warfighting Functions, and Cyber domain.
 Decrease in AvSE Development/Integration from FY2023 to FY2024 is due to finalizing developmental effort to ensure that the RVCT-Air capability is concurrent with Aviation platform systems.

Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
MVCR Update	Various	Multiple : Orlando, FL	-	1.163	Feb 2022	2.479	Jan 2023	1.226	Jan 2024	-		1.226	Continuing	Continuing	Continuing
TSS/TMT Test Support	Various	ATEC : Orlando, FL	-	0.437	Mar 2022	1.500	Feb 2023	0.832	Nov 2023	-		0.832	Continuing	Continuing	Continuing

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0604121A / <i>Synthetic Training Environment Refinement & Prototyping</i>	Project (Number/Name) CR2 / <i>STE Information Systems (TSS, TMT)</i>

Event Name	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
STE-IS Capability Development	Development/Integration/Test																											
STE-IS Software Update R1	1 Platoon																											
STE-IS Software Update R2					2 Company (RVCT Ground/Soldier)																							
STE-IS Software Update R3					3 Company (RVCT Air)																							
STE-IS Software Update R4					4 Battalion (TMT)																							
Operational Demonstration									5 RVCT A/G/S and TMT																			
STE-IS Software Update R5									6 Brigade																			
STE-IS Production									Production																			
STE-IS Interim Contractor Support (ICS)									Support																			

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0604121A / <i>Synthetic Training Environment Refinement & Prototyping</i>	Project (Number/Name) CR2 / <i>STE Information Systems (TSS, TMT)</i>

Schedule Details

Events	Start		End	
	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	4	2021	4	2021
STE-IS Software Update R1	2	2022	2	2022
STE-IS Software Update R2	4	2022	4	2022
STE-IS Software Update R3	2	2023	2	2023
STE-IS Software Update R4	4	2023	4	2023
Operational Demonstration	2	2024	2	2024
STE-IS Software Update R5	4	2024	4	2024
STE-IS Production	4	2023	4	2032
STE-IS Interim Contractor Support (ICS)	3	2023	4	2025

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army **Date:** March 2023

Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0604121A / <i>Synthetic Training Environment Refinement & Prototyping</i>	Project (Number/Name) CR3 / <i>STE Live</i>
--	--	---

COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
CR3: <i>STE Live</i>	-	29.270	67.396	23.839	-	23.839	33.419	14.341	80.909	81.812	0.000	330.986
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Element was previously funded from PE 0604121A Synthetic Training Environment Refinement & Prototyping, 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 a 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), Chemical, Biological, Radiological, Nuclear, and Explosives (CBRNE) Plumes and Cyber.

FY 2024 Base RDTE dollars in the amount of \$23.839 million furthers development of STE Live prototype(s) to replicate the Tactical Engagement Simulation Systems (TESS) for multiple engagement scenarios (direct fire, guided missiles, and autonomous weapons). These systems will replace up to six systems reaching end of useful life and enhance Soldier capability and training value. FY 2024 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 \$136 million RDT&E from FY2021 to FY2024.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2022	FY 2023	FY 2024
Title: Engineering, Support, Test & Evaluation for STE Live	19.270	26.396	23.839
Description: Direct engineering development, support and test of the STE Live program through awarded OTA vehicles.			
FY 2023 Plans:			

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023		
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0604121A / <i>Synthetic Training Environment Refinement & Prototyping</i>	Project (Number/Name) CR3 / <i>STE Live</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2022	FY 2023	FY 2024
<p>FY 2023 Base RDTE dollars in the amount of \$26.396 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).</p> <p>FY 2024 Plans: FY 2024 Base RDTE dollars in the amount of \$23.839 million furthers development of STE Live prototype(s) to replicate the TESS for multiple engagement scenarios (direct fire, guided missiles, and autonomous weapons). These systems will eventually replace up to six systems reaching End of Useful life and enhance Soldier capability and training value. FY 2024 funds will continue to revolutionize TESS and the 5 instrumentation enablers (Calculations, Networks, Sensors, Terrains, and Transmitters).</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: The decrease of \$2.557M from FY 2023 to FY 2024 aligns with Direct Fire (DF) Small Arms and Counter-Defilade engagement prototyping maturity.</p>				
<p>Title: SBIR/STTR Transfer</p> <p>FY 2023 Plans: Funding transferred in accordance with Title 15 USC §638</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: Funding transferred in accordance with Title 15 USC §638</p>		-	1.000	-
Accomplishments/Planned Programs Subtotals		19.270	27.396	23.839
		FY 2022	FY 2023	
<p>Congressional Add: Congressional Add: Next generation MILES</p> <p>FY 2022 Accomplishments: 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, Thrown Objects, Guided Weapons, Autonomous Weapons, Cyber, Directed Energy,</p>		10.000	-	

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army **Date:** March 2023

Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0604121A / <i>Synthetic Training Environment Refinement & Prototyping</i>	Project (Number/Name) CR3 / <i>STE Live</i>
--	--	---

	FY 2022	FY 2023
Radiant Energy, and Plume. The 5 instrumentation enablers are Calculations, Networks, Sensors, Terrains, and Transmitters.		
Congressional Add: Congressional Add: STE Live electronic bullet	-	20.000
FY 2023 Plans: FY 2023 Congressional Add RDTE dollars in the amount of \$20.000 million furthers development of STE Live. \$20.000 million provides for the development of the STE Live electronic bullet.		
Congressional Add: Congressional Add: STE Live OTA acceleration	-	20.000
FY 2023 Plans: FY 2023 Congressional Add RDTE dollars in the amount of \$20.000 million furthers development of STE Live. \$20.000 million provides funding to accelerate development being completed under the STE Live Other Transaction Agreements (OTAs).		
Congressional Adds Subtotals	10.000	40.000

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 a 5G Player Unit Radio interface point and addressing training gaps for direct fire, indirect fire, placed objects, thrown objects, and counter-defilade force on force engagement systems to include modernized 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 is pursuing IOC in FY 2026 and production of FOC quantities in FY 2030.

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army												Date: March 2023				
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)								
2040 / 4				PE 0604121A / Synthetic Training Environ ment Refinement & Prototyping				CR3 / STE Live								
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
SBIR/STTR Transfer	TBD	TBD : TBD	-	-		1.000	Jun 2023	-		-		-	0.000	1.000	-	
Subtotal			-	-		1.000		-		-		-	0.000	1.000	N/A	
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
STE Live	C/Various	Various : Various	-	25.726	Mar 2022	-		-		-		-	Continuing	Continuing	Continuing	
STE Live Prototype Development	C/TBD	TBD : Orlando, FL	-	-		26.396	Apr 2023	23.839	Feb 2024	-		23.839	0.000	50.235	-	
STE Live Electronic Bullet	TBD	C/TBD : Various/ Various	-	-		20.000	Jul 2023	-		-		-	0.000	20.000	-	
STE Live OTA Acceleration	TBD	C/TBD : Various/ Various	-	-		20.000	Jul 2023	-		-		-	0.000	20.000	-	
Subtotal			-	25.726		66.396		23.839		-		23.839	Continuing	Continuing	N/A	
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
Program Support/Travel	TBD	Various : Various	-	3.544		-		-		-		-	0.000	3.544	-	
Subtotal			-	3.544		-		-		-		-	0.000	3.544	N/A	
Project Cost Totals			-	29.270		67.396		23.839		-		23.839	Continuing	Continuing	N/A	
Remarks																

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0604121A / <i>Synthetic Training Environ ment Refinement & Prototyping</i>	Project (Number/Name) CR3 / <i>STE Live</i>

Event Name	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
STE Live OTA 21 (DF Small Arms,)	██████████				██████████																							
STE Live OTA 21 (IDF)	██████████				██████████																							
STE Live OTA 21 (CDF)	██████████				██████████				██████████																			
STE Live OTA 22 (Mine, Grenade)	██████████				██████████				██████████																			
STE Live OTA 22 (Bomb)	██████████				██████████				██████████																			
STE Live OTA 23 (DF Ground Vehicles, Cyber/EW, Plume)	██████████				██████████				██████████				██████████															
STE Live OTA 24 (DF Ground Vehicles, Guided & Autonomous..)	██████████				██████████				██████████				██████████															
STE Live OTA 24 (DF Aviation)	██████████				██████████				██████████				██████████				██████████											
STE Live OTA 25 (DE, RE, Next Gen Squad Weapon)	██████████				██████████				██████████				██████████				██████████				██████████							

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0604121A / <i>Synthetic Training Environment Refinement & Prototyping</i>	Project (Number/Name) CR3 / <i>STE Live</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
STE Live OTA 21 (DF Small Arms,)	4	2021	4	2023
STE Live OTA 21 (IDF)	4	2021	4	2023
STE Live OTA 21 (CDF)	4	2021	1	2025
STE Live OTA 22 (Mine, Grenade)	3	2022	4	2023
STE Live OTA 22 (Bomb)	3	2022	3	2024
STE Live OTA 23 (DF Ground Vehicles, Cyber/EW, Plume)	2	2023	4	2025
STE Live OTA 24 (DF Ground Vehicles, Guided & Autonomous Munitions)	2	2024	2	2025
STE Live OTA 24 (DF Aviation)	2	2024	4	2026
STE Live OTA 25 (DE, RE, Next Gen Squad Weapon)	2	2025	1	2029

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army										Date: March 2023		
Appropriation/Budget Activity 2040 / 4					R-1 Program Element (Number/Name) PE 0604121A / <i>Synthetic Training Environment Refinement & Prototyping</i>				Project (Number/Name) CR4 / <i>STE One World Terrain (OWT)</i>			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
CR4: <i>STE One World Terrain (OWT)</i>	-	31.374	1.387	13.192	-	13.192	6.027	6.212	6.388	6.600	0.000	71.180
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

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

OWT modernizes the Army's terrain generation capability by automatically processing raw terrain data into a 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 the Synthetic Training Environment (STE) to represent the terrain in a virtual environment.

In FY 2021, OWT entered the Software Acquisition Pathway.

OWT facilitated rapid and iterative delivery of its capabilities to the STE-IS for the Reconfigurable Virtual Collective Trainer (RVCT) as part of the family of STE programs.

FY 2024 Base RDTE dollars in the amount of \$13.192 million for OWT will continue development of automated processes to produce 3D terrain data that replicates the physical Earth and its complexities for use in the STE family of programs.

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 2022	FY 2023	FY 2024
Title: Engineering, Support, Test & Evaluation for OWT	26.774	1.336	13.192
FY 2023 Plans: Funding supports continuation of prototype development and integration with STE-IS, and cybersecurity compliance testing.			
FY 2024 Plans:			

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army	Date: March 2023
--	-------------------------

Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0604121A / <i>Synthetic Training Environment Refinement & Prototyping</i>	Project (Number/Name) CR4 / <i>STE One World Terrain (OWT)</i>
--	--	--

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023	FY 2024
Funding will support the further automation of OWT. Additionally, base funding will develop advanced capabilities to replicate complex environments such as urban terrain with dense infrastructure and power grids. Also, base funding will continue efforts to integrate OWT 3D terrain data into the Synthetic Training Environment (STE) family of programs. FY 2023 to FY 2024 Increase/Decrease Statement: Increase from FY2023 to FY2024 is to automate the production of 3D terrain data, replicate characteristics and features of complex environments and continue support to STE.			
Title: SBIR/STTR Transfer FY 2023 Plans: Funding transferred in accordance with Title 15 USC §638 FY 2023 to FY 2024 Increase/Decrease Statement: Funding transferred in accordance with Title 15 USC §638	-	0.051	-
Accomplishments/Planned Programs Subtotals	26.774	1.387	13.192

	FY 2022	FY 2023
Congressional Add: Congressional Add: Muti-Sensor Terrain Capture & Processing FY 2022 Accomplishments: Funding supports development, integration, and test of 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)											
<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u> <u>Base</u>	<u>FY 2024</u> <u>OCO</u>	<u>FY 2024</u> <u>Total</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• NA2015: <i>STE ONE WORLD TERRAIN</i>	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.

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) Other Transaction Authorities (OTAs) awarded in FY 2019 in support of the STE prototype initiatives which included: STE-IS (Training Simulation Software(TSS)/

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0604121A / <i>Synthetic Training Environment Refinement & Prototyping</i>	Project (Number/Name) CR4 / <i>STE One World Terrain (OWT)</i>
<p>Training Management Tool (TMT), One World Terrain (OWT), Reconfigurable Virtual Collective Trainer (RVCT), Live Training Systems (market research only), and Solider Virtual Trainer (SVT) weapons optimization (market research only). The Prime(s) and Sub-vendors execute the STE agreement(s) through DevSecOps processes. Vendors continually include the Government and stakeholders in the development process. This process ensures all stakeholders have early input into modular design efforts to support accelerated integration of STE family of programs.</p> <p>In June 2021, OWT was designated as a software intensive program and entered the Software Acquisition Pathway as a component of the STE-IS Family of Programs.</p> <p>OWT continues to develop the prototype using the OTA awarded in FY2019 and conducts evaluations of the capability and terrain data products through technical assessments, Soldier Touch Points, test events, and Operational Assessments/Demonstrations held in concert with TSS/TMT. OWT products will be integrated with the TSS/TMT to serve as the core information system for STE Family of Programs such as the Reconfigurable Virtual Collective Trainer RVCT (Air/Ground).</p> <p>OWT terrain data is delivered as part of the integrated STE-IS capability in accordance with the distribution plan and will meet Information Assurance and Risk Management Framework requirements. OWT will continue to develop new capabilities, conduct minor updates, and refresh terrain data as needed via the OTA until the STE Enterprise Contract is awarded o/a FY 2026.</p>		

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army **Date:** March 2023

Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0604121A / Synthetic Training Environ ment Refinement & Prototyping	Project (Number/Name) CR4 / STE One World Terrain (OWT)
--	---	---

Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
SBIR/STTR Tax	TBD	N/A : N/A	-	-		0.051		-		-		-	0.000	0.051	-
Subtotal			-	-		0.051		-		-		-	0.000	0.051	N/A

Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
OWT Capability Development	Option/ FFP	Maxar Technologies (formerly VRICON) : Westminster, CO	-	25.870	Dec 2021	1.336	Feb 2022	12.738	Dec 2023	-		12.738	Continuing	Continuing	Continuing
Congressional Add: Multi-Sensor Terrain Capture & Processing	SS/TBD	ESRI : Redlands, CA	-	4.600	Sep 2022	-		-		-		-	0.000	4.600	-
Subtotal			-	30.470		1.336		12.738		-		12.738	Continuing	Continuing	N/A

Remarks
 OWT Capability Development: OWT awarded its prototype OTA on June 2019. FY 2023 Base RDTE funding will support the continuation of prototyping activities for the OWT OTA. The OWT will extend the current OTA to continue development activities in FY2024.
 Note: VRICON was acquired by Maxar Technologies on 1 July 2020.

Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
OWT Assessment	Various	Various : Orlando, FL	-	0.904	Jun 2022	-		0.454	Mar 2024	-		0.454	Continuing	Continuing	Continuing
Subtotal			-	0.904		-		0.454		-		0.454	Continuing	Continuing	N/A

Remarks
 OWT Assessment - Conducts the evaluation of OWT products through Soldier Touch Points, test events, and Operational Assessments in conjunction with TSS/TMT.

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army								Date: March 2023					
Appropriation/Budget Activity 2040 / 4				R-1 Program Element (Number/Name) PE 0604121A / <i>Synthetic Training Environment Refinement & Prototyping</i>				Project (Number/Name) CR4 / <i>STE One World Terrain (OWT)</i>					
	Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	31.374		1.387		13.192		-		13.192	Continuing	Continuing	N/A

Remarks

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0604121A / <i>Synthetic Training Environment Refinement & Prototyping</i>	Project (Number/Name) CR4 / <i>STE One World Terrain (OWT)</i>

Event Name	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
OWT OTA	[Redacted]				[Redacted]				[Redacted]				[Redacted]				[Redacted]				[Redacted]				[Redacted]			
<i>Current OTA</i>									[Redacted]				[Redacted]				[Redacted]				[Redacted]				[Redacted]			
OWT OTA (Extension)	[Redacted]				[Redacted]				[Redacted]				[Redacted]				[Redacted]				[Redacted]				[Redacted]			
<i>Extension to Current OTA</i>	[Redacted]				[Redacted]				[Redacted]				[Redacted]				[Redacted]				[Redacted]				[Redacted]			
OWT Capability Development	[Redacted]				[Redacted]				[Redacted]				[Redacted]				[Redacted]				[Redacted]				[Redacted]			
<i>Capability Development</i>	[Redacted]				[Redacted]				[Redacted]				[Redacted]				[Redacted]				[Redacted]				[Redacted]			
Prototype Terrain Deliveries	[Redacted]				[Redacted]				[Redacted]				[Redacted]				[Redacted]				[Redacted]				[Redacted]			
STE-IS Enterprise Contract	[Redacted]				[Redacted]				[Redacted]				[Redacted]				[Redacted]				[Redacted]				[Redacted]			
OWT Interim Contractor Support (ICS)	[Redacted]				[Redacted]				[Redacted]				[Redacted]				[Redacted]				[Redacted]				[Redacted]			
<i>Interim Contractor Support (ICS)</i>	[Redacted]				[Redacted]				[Redacted]				[Redacted]				[Redacted]				[Redacted]				[Redacted]			

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0604121A / <i>Synthetic Training Environment Refinement & Prototyping</i>	Project (Number/Name) CR4 / <i>STE One World Terrain (OWT)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
OWT OTA	3	2019	1	2024
OWT OTA (Extension)	1	2024	4	2026
OWT Capability Development	3	2019	1	2029
Prototype Terrain Deliveries	2	2020	1	2024
STE-IS Enterprise Contract	1	2026	1	2031
OWT Interim Contractor Support (ICS)	1	2023	1	2031

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army										Date: March 2023		
Appropriation/Budget Activity 2040 / 4					R-1 Program Element (Number/Name) PE 0604121A / <i>Synthetic Training Environment Refinement & Prototyping</i>				Project (Number/Name) CR5 / <i>STE Reconfigurable Virtual Trainer (RVCT)</i>			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
CR5: <i>STE Reconfigurable Virtual Trainer (RVCT)</i>	-	24.296	20.726	15.282	-	15.282	-	-	-	-	0.000	60.304
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 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.

FY2024 Base RDTE dollars in the amount of \$15.282 million for RVCT is to continue iterative development on the RVCT configuration kits, complete integration lab assets, and develop future configuration kits based on Soldier feedback emerging from FY 2023 Soldier Touch Points (STPs) and an Operational Demonstration (OD) at Fort Hood, Texas.

The total cost of the RVCT (CR5) MTA effort is \$67 million RDT&E from FY2022 to FY2024.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2022	FY 2023	FY 2024
Title: Engineering, Support, Test & Evaluation for RVCT	24.296	19.969	15.282
Description: Direct engineering development, support and test of the Reconfigurable Virtual Collective Trainer (RVCT) program through awarded OTA vehicles.			
FY 2023 Plans: FY 2023 Base RDTE dollars in the amount of \$19.969M for RVCT is to complete integration lab assets and design enhancements that will reduce complexity of production activities.			
FY 2024 Plans:			

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023		
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0604121A / <i>Synthetic Training Environment Refinement & Prototyping</i>	Project (Number/Name) CR5 / <i>STE Reconfigurable Virtual Trainer (RVCT)</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2022	FY 2023	FY 2024
FY2024 Base RDTE dollars in the amount of \$15.282 million for RVCT is to continue iterative development on the RVCT configuration kits, complete integration lab asses, and develop future configuration kits based on Soldier feedback emerging from FY 2023 STPs and the OD at Fort Hood, Texas. FY 2023 to FY 2024 Increase/Decrease Statement: The decrease of \$4.687 million from FY 2023 to FY2024 Base RDTE dollars is due to the decreased scope in development for the RVCT Program.				
Title: SBIR/STTR Transfer FY 2023 Plans: Funding transferred in accordance with Title 15 USC §638 FY 2023 to FY 2024 Increase/Decrease Statement: Funding transferred in accordance with Title 15 USC §638		-	0.757	-
Accomplishments/Planned Programs Subtotals		24.296	20.726	15.282
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. 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, software 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 2QFY2023; followed by a 2QFY2023 MTA-RF production decision and First Unit Issue (FUI) in 4QFY2023. The 2QFY2023 MTA- 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. 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 STRI) is the Milestone Decision Authority for the approved MTA RP. The MDA for the MTA RF will be PEO STRI.				

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0604121A / <i>Synthetic Training Environment Refinement & Prototyping</i>	Project (Number/Name) CR5 / <i>STE Reconfigurable Virtual Trainer (RVCT)</i>

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 produced prototype GEN2 RVCT A/G systems for use at Ft. Hood, Texas to support the OA in FY 2022, continued development of the STE-IS, and follow on STPs and the OD in FY2023.

The OA of the RVCT GEN2 prototypes were conducted 4QFY2022 at Ft. Hood, Texas, and another assessment will be conducted in 2QFY2023. The OA will determine whether the RVCT systems are operationally effective, suitable, survivable, and safe for intended use to support a 2QFY2023 RVCT entry into MTA-RF. The RVCT OA 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 2QFY2023 production decision to establish the initial RVCT production base. A combined STE-IS & RVCT Operational Demonstration will be conducted 2QFY2024.

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army **Date:** March 2023

Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0604121A / <i>Synthetic Training Environ ment Refinement & Prototyping</i>	Project (Number/Name) CR5 / <i>STE Reconfigurable Virtual Trainer (RVCT)</i>
--	---	--

Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
SBIR/STTR Transfer	TBD	TBD : TBD	-	-		0.757	Jun 2023	-		-		-	0.000	0.757	-
Subtotal			-	-		0.757		-		-		-	0.000	0.757	N/A

Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Reconfigurable Virtual Collective Trainers	C/FP	Cole Engineering Services, Inc : Orlando, FL	-	24.296	Dec 2021	5.341	Oct 2022	-		-		-	Continuing	Continuing	Continuing
Reconfigurable Virtual Collective Trainers	C/FP	TBD : TBD	-	-		14.228	Apr 2023	15.282	Apr 2024	-		15.282	0.000	29.510	-
Subtotal			-	24.296		19.569		15.282		-		15.282	Continuing	Continuing	N/A

Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Environmental Testing	MIPR	Aberdeen Test Center : Aberdeen MD	-	-		0.400	Mar 2023	-		-		-	0.000	0.400	-
Subtotal			-	-		0.400		-		-		-	0.000	0.400	N/A

	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract	
	Project Cost Totals		-	24.296	20.726	15.282	-	15.282	Continuing	Continuing

Remarks

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0604121A / <i>Synthetic Training Environment Refinement & Prototyping</i>	Project (Number/Name) CR5 / <i>STE Reconfigurable Virtual Trainer (RVCT)</i>

Event Name	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
RVCT PH2, Complete Prototypes	█																											
RVCT FUI																												
RVCT MDD	█																											
RVCT Army Requirements Oversight Council					█																							
RVCT NET					█																							
RVCT OA					█																							
RVCT MTA RF					█																							
RVCT Rapid Fielding									█																			
RVCT Continued Development									█																			

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0604121A / <i>Synthetic Training Environment Refinement & Prototyping</i>	Project (Number/Name) CR5 / <i>STE Reconfigurable Virtual Trainer (RVCT)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
RVCT PH2, Complete Prototypes	3	2021	4	2022
RVCT FUI	4	2023	4	2023
RVCT MDD	1	2022	2	2023
RVCT Army Requirements Oversight Council	4	2022	2	2023
RVCT NET	4	2022	2	2023
RVCT OA	4	2022	4	2022
RVCT MTA RF	4	2022	2	2023
RVCT Rapid Fielding	2	2023	4	2025
RVCT Continued Development	1	2024	4	2024

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army **Date:** March 2023

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 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
CR6: STE Squad Immersive Virtual Trainer (SiVT)	-	4.817	36.130	-	-	-	-	-	-	-	0.000	40.947
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 Train platform. IVAS/SiVT provide 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 current and future adversaries. SiVT provides a readiness tool for Squad Lethality and Human Performance assessment and a Synthetic Training Environment (STE) tool enabling on-demand squad training

The SiVT program will not be requesting BASE RDTE funding in FY 2024.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2022	FY 2023	FY 2024
Title: Engineering, Support, Test & Evaluation for SiVT	4.817	-	-
Accomplishments/Planned Programs Subtotals	4.817	-	-

	FY 2022	FY 2023
Congressional Add: Congressional Add: Engineering, Support, Test & Evaluation for SiVT	-	36.130
FY 2023 Plans: Funding will be used for incremental technology insertion into the SiVT system, including technologies that improve outdoor capability. Other efforts include additional weapon trackers and weapon drop in kits to support future Next Generation Squad Weapon variants, SiVT reductions and improvements in Size, Weight, and Power (SWaP), and tactical cloud package development and integration.		
Congressional Adds Subtotals	-	36.130

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• NA2211: STE SiVT (IVAS TRAINER)	69.266	-	0.000	-	0.000	-	-	-	-	0.000	69.266

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0604121A / <i>Synthetic Training Environment Refinement & Prototyping</i>	Project (Number/Name) CR6 / <i>STE Squad Immersive Virtual Trainer (SiVT)</i>

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u> <u>Base</u>	<u>FY 2024</u> <u>OCO</u>	<u>FY 2024</u> <u>Total</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
------------------	----------------	----------------	-------------------------------	------------------------------	--------------------------------	----------------	----------------	----------------	----------------	-----------------------------------	-------------------

Remarks

Base Procurement dollars for Squad immersive Virtual Trainer (SiVT) will procure of hardware associated with the SiVT Kits, and Software based Technology Insertions for Outdoor Capability. Additionally, 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. The SiVT capabilities developed during the prototype effort were assessed through Soldier Touch Points and feedback in support of the follow-on production efforts. The Synthetic Training Environment Cross Functional Team (CFT) and the Program Executive Office (PEO) for Simulation, Training and Instrumentation worked with Soldier Lethality CFT and PEO Soldier to leverage their production OTA contract and awarded a modification in 4th QTR FY2022 that aligned SiVT with the IVAS fielding schedule. The Production and Fielding OTA will be a five-year effort fielding to all active and reserve components close combat units. Technical Insertions will incrementally improve capabilities over the life of the program. SiVT continues to work with Microsoft to develop and implement production improvements to the base system through Post Deployment Software Support (PDSS).

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army **Date:** March 2023

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)
--	---	--

Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
SiVT Development	Option/FP	Microsoft Corporation : Redmond, WA	-	4.620	Feb 2022	-		-		-		-	0.000	4.620	-
SiVT Weapon Drop-in Kits	C/FP	Cole Engineering Services : Orlando, FL	-	0.197	Sep 2022	-		-		-		-	0.000	0.197	-
Congressional Add: SiVT Development	Option/FP	Microsoft Corporation : Redmond, WA	-	-		36.130	Aug 2023	-		-		-	0.000	36.130	-
Subtotal			-	4.817		36.130		-		-		-	0.000	40.947	N/A

Remarks
 SiVT Development - SiVT awarded Phase 1 technology insertion efforts as part of the production OTA with Microsoft on Dec 2022. FY23 Base RDTE efforts will continue technology insertion efforts to achieve outdoor capability.
 SiVT Weapons Drop-in Kit - This study, awarded in Sep 2022, performed initial assessment of a round-less blank replacement kits

	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	4.817	36.130	-	-	-	0.000	40.947	N/A

Remarks

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army		Date: March 2023
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)

Event Name	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
First Unit Issued									▲ 1																			
IOC (First Unit Equip)																					▲ 2							
SIVT Development/Concurrency																												
SIVT Production																												

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0604121A / <i>Synthetic Training Environment Refinement & Prototyping</i>	Project (Number/Name) CR6 / <i>STE Squad Immersive Virtual Trainer (SiVT)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
SiVT Proptotype Development	1	2019	4	2021
First Unit Issued	1	2024	1	2024
IOC (First Unit Equip)	4	2025	4	2025
SiVT Development/Concurrency	4	2021	4	2027
SiVT Production	2	2022	4	2027

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army										Date: March 2023		
Appropriation/Budget Activity 2040 / 4					R-1 Program Element (Number/Name) PE 0604121A / <i>Synthetic Training Environment Refinement & Prototyping</i>				Project (Number/Name) CR7 / <i>STE Soldier Virtual Trainer (SVT)</i>			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
CR7: <i>STE Soldier Virtual Trainer (SVT)</i>	-	10.876	5.558	7.785	-	7.785	12.747	-	-	-	0.000	36.966
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 2024 Base RDTE dollars in the amount of \$7.785 million for SVT furthers the development of prototype designs for SVT Core Integration, WSD -Increment 2, JFT, and UoF capabilities. The prototype designs will inform requirements, technology readiness level maturity, design of the SVT capabilities, and level of effort to integrate with the common synthetic environment.

The total cost of the SVT (CR7) MTA effort is \$103 million RDT&E from FY2022 to FY2026.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2022	FY 2023	FY 2024
Title: Engineering, Support, Test & Evaluation for SVT	10.876	5.355	7.785
Description: Direct engineering development, support and test of the Soldier Virtual Trainer (SVT) program through awarded OTA vehicles.			
FY 2023 Plans: FY 2023 Base RDTE dollars in the amount of \$5.355 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 2024 Plans:			

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023		
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0604121A / <i>Synthetic Training Environment Refinement & Prototyping</i>	Project (Number/Name) CR7 / <i>STE Soldier Virtual Trainer (SVT)</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2022	FY 2023	FY 2024
FY 2024 Base RDTE dollars in the amount of \$7.785 million for SVT furthers the development of prototype designs for SVT Core Integration, WSD-Increment 2, JFT, and UoF capabilities. The prototype designs will inform requirements, technology readiness level maturity, design of the SVT capabilities, and level of effort to integrate with the common synthetic environment.				
FY 2023 to FY 2024 Increase/Decrease Statement: The increase of \$2.430 million in Base RDTE dollars for SVT enables the continued development of the prototype designs for SVT Core Integration, WSD-Increment 2, JFT, and UoF capabilities.				
Title: SBIR/STTR Transfer		-	0.203	-
FY 2023 Plans: Funding transferred in accordance with Title 15 USC §638				
FY 2023 to FY 2024 Increase/Decrease Statement: Funding transferred in accordance with Title 15 USC §638				
Accomplishments/Planned Programs Subtotals		10.876	5.558	7.785
C. Other Program Funding Summary (\$ in Millions)				
N/A				
Remarks				
D. Acquisition Strategy				
<p>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.</p> <p>SVT entered the Middle Tier of Acquisition Rapid Prototyping Pathway in 3QFY2022 and awarded two vendor OTAs in support of the development prototype design for the SVT Core and WSD capability, Increment 1. Multiple Subject Matter Expert (SME) Reviews, Soldier Touch points (STPs), and an Operational Assessment will be conducted during the development phase to ensure Warfighter feedback is incorporated and facilitate acceptance in support of FY 2024 IOC at Ft. Benning, Georgia. SVT will take a phased acquisition approach in developing the three capabilities beginning with WSD, UoF, and JFT respectively. SVT OTA Option award(s) for continued SVT Core Integration with STE-IS, WSD Increment 2, UoF, and JFT are projected for 1QFY2024.</p>				

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0604121A / <i>Synthetic Training Environment Refinement & Prototyping</i>	Project (Number/Name) CR7 / <i>STE Soldier Virtual Trainer (SVT)</i>

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 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.

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army **Date:** March 2023

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)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
SBIR/STTR Transfer	TBD	Various : Various	-	-		0.203		-		-		-	Continuing	Continuing	Continuing
Subtotal			-	-		0.203		-		-		-	Continuing	Continuing	N/A

Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Soldier Virtual Trainer (SVT) Development	C/FFP	TBD : Orlando, FL	-	10.876	Jun 2022	5.355	Jun 2023	7.785	Mar 2024	-		7.785	Continuing	Continuing	Continuing
Subtotal			-	10.876		5.355		7.785		-		7.785	Continuing	Continuing	N/A

	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract	
Project Cost Totals		-	10.876	5.558	7.785	-	7.785	Continuing	Continuing	N/A

Remarks
A down-select from the current OTA vendors to a single vendor is planned to support SVT Core and WSD, Increment 1 efforts.

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army			Date: March 2023		
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)	

Event Name	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028																											
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4																								
SVT Development/STPs																																																				
SVT OA #1																																																				
SVT IOC																																																				
SVT OA #2																																																				
SVT Production																																																				

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0604121A / <i>Synthetic Training Environment Refinement & Prototyping</i>	Project (Number/Name) CR7 / <i>STE Soldier Virtual Trainer (SVT)</i>

Schedule Details

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