Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Army											Date: March 2024	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 6: *RDT&E Management Support*					R-1 Program Element (Number/Name) PE 0604258A / *Target Systems Development*							
COST ($ in Millions)	**Prior Years**	**FY 2023**	**FY 2024**	**FY 2025 Base**	**FY 2025 OCO**	**FY 2025 Total**	**FY 2026**	**FY 2027**	**FY 2028**	**FY 2029**	**Cost To Complete**	**Total Cost**
Total Program Element	-	53.434	11.873	15.788	-	15.788	15.218	15.350	15.519	15.675	Continuing	Continuing
238: *Aerial Targets*	-	47.258	8.420	12.453	-	12.453	11.466	11.558	11.685	11.802	Continuing	Continuing
459: *Ground Targets*	-	6.176	3.453	3.335	-	3.335	3.752	3.792	3.834	3.873	Continuing	Continuing

A. Mission Description and Budget Item Justification

This funding line supports testing of Army Modernization Priority Programs.

This Program Element funds aerial and ground target hardware and software development, maintenance, and upgrades. The overall objective is to ensure validation of weapon system accuracy and reliability by developing aerial and ground targets essential for test and evaluation (T&E). These targets are economical and expendable, remotely controlled or stationary, and often destroyed in use. The Army is the Tri-Service lead under the Secretariat Reliance panel for providing rotary wing, mobile ground, towed, and designated targets for T&E. The Army executes development of some service-peculiar target requirements in support of quality assurance, lot acceptance, and training and continues development of service-peculiar and on-going target materiel upgrades to maintain continuity with current weapons technology and trends in modern and evolving Army weapons.

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	64.132	11.873	15.756	-	15.756
Current President's Budget	53.434	11.873	15.788	-	15.788
Total Adjustments	-10.698	0.000	0.032	-	0.032
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-10.000	-			
• SBIR/STTR Transfer	-0.698	-			
• Adjustments to Budget Years	-	-	0.032	-	0.032

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2023	FY 2024
Project: 238: *Aerial Targets*		
Congressional Add: *Replacement of Engines for Aerial Targets*	10.000	-
Congressional Add: *UAS Swarm Threat Representation, Detection and Mitigation*	25.000	-

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Army	Date: March 2024
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0604258A *I Target Systems Development*

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2023	FY 2024
Congressional Add Subtotals for Project: 238	35.000	-
Congressional Add Totals for all Projects	35.000	-

Change Summary Explanation

There is a minor increase due to economic assumptions.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 6	R-1 Program Element (Number/Name) PE 0604258A / *Target Systems Development*	Project (Number/Name) 238 / *Aerial Targets*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
238: *Aerial Targets*	-	47.258	8.420	12.453	-	12.453	11.466	11.558	11.685	11.802	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This Project supports Army readiness and multi-domain operations through development, acquisition, operation and modernization of aerial targets. Multi-spectral Aerial Targets include realistic surrogates, actual high performance threat aircraft, and virtual target computer models. Current and emerging weapons systems require test, evaluation, and training using threat representative aerial targets to assess weapons systems effectiveness in the operational environment. This project encompasses a portfolio of full-scale, miniature, and subscale fixed wing/rotary wing targets, virtual targets, ancillary devices, and associated control systems. For accurate threat portrayal that properly stresses weapons systems during test and evaluation, aerial targets must exhibit the flight characteristics, threat signatures, and other performance factors to represent or emulate relevant and validated threats. This Project funds: the long-range planning necessary to determine future target needs and development of coordinated requirements; the management of target research, development, test and evaluation, production, and modernization; execution of the validation process to ensure that aerial targets accurately represent the threat; as well as storage and repair parts. The Army is the Test Enterprise Reliance lead for Rotary Wing Targets and Towed Target development.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Towed Targets/Ancillary devices.	0.475	0.410	0.420
Description: Engineering & Manufacturing Development (EMD) phase activities for Towed Targets/Ancillary devices.			
FY 2024 Plans: Continue EMD for Towed Targets and Ancillary devices, to include development, enhancement, maintenance, and sustainment for towed targets and ancillary devices as needed. Continue development and testing of Low Cost Towed target systems specifically the X-Tow, Glide Tow and Sphere Tow Targets. These targets emulate current threats or provide calibrated radar cross section sources at a very low cost to the Army Directed Energy Program Office, Rapid Capabilities and Critical Technologies Office (RCCTO), Center for Countermeasures/Office of the Secretary of Defense (CCM/OSD), the USAF Three Dimensional Long Range Radar and the Navy Enterprise Air Surveillance Radar. Design of the X-Tow target will be reviewed and optimized to reduce production cost. Design and development of a 6 inch Sphere Tow target will be initiated to meet future test requirements. The Global Positioning System (GPS) receiver and Data Logger Unit used in the Sphere Tow, X-Tow and Cruise Missile Tow targets will be updated to the latest technology to provide test personnel with precise location of the targets during testing. Investigate and test other cost-saving towed systems specifically modifications to the Cruise Missile Tow Target for High Energy Laser system tests.			
FY 2025 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0604258A / *Target Systems Development*	**Project (Number/Name)** 238 / *Aerial Targets*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Continue EMD for Towed Targets and Ancillary devices, to include development, enhancement, maintenance, and sustainment for towed targets and ancillary devices as needed. Continue development and testing of Low Cost Towed target systems specifically the High Energy Laser (HEL) Tow, and Sphere Tow Targets. These targets emulate current threats or provide calibrated radar cross section sources at a very low cost to the Army Directed Energy Program Office, Rapid Capabilities and Critical Technologies Office, Army Aerostat Program Office, Center for Countermeasures/ Office of the Secretary of Defense (CCM/OSD), USAF Three Dimensional Long Range Radar and the Navy Enterprise Air Surveillance Radar. A prototype of the HEL-Tow target will be fabricated for flight testing. The Global Positioning System receiver and Data Logger Unit used in the Sphere Tow, X-Tow and Cruise Missile Tow targets will be updated to the latest technology to provide test personnel with precise location of the targets during testing. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY 2024 to FY 2025 funding increase represents minor increase due to economic assumptions.			
Title: Aerial Virtual Targets. ***Description:*** Supports the research and development of Aerial Virtual Targets. Virtual Targets are employed by multiple Department of Defense agencies and weapon systems to facilitate simulations for Developmental and Operational Test planning, rehearsal, post-test analysis, hardware-in-the-loop testing, and execution of test events that are too costly or difficult to be conducted under actual field conditions. ***FY 2024 Plans:*** Will continue modeling, simulation, and development of aerial threat targets for use throughout Army and DoD simulation environments for evolving Army and DoD simulation standards and evolving implementation techniques; focuses on simulation target models of airplanes, helicopters, missiles, unmanned aerial vehicles, and aerial targets in commonly used formats to support visualization, infrared analysis, and radar analysis simulations; will support verification and validation of models, will provide archiving and distribution of simulation target models to simulation developers throughout the Army and DoD T&E communities. Life cycle maintenance of threat virtual targets will be addressed for creation, validation, and distribution of simulation target models and physics based software and simulation formats evolve. Aerial Virtual Targets will necessarily address continued adoption, utilization, and proliferation of unmanned aerial vehicles as well as rocket, artillery, and mortar (RAM) threats. Aerial Virtual Target models will continue to incorporate electronic attack (EA) and electronic warfare (EW) components. Simulation target models are employed to facilitate simulations for Development Testing (DT) and Operational Testing (OT) planning, test rehearsal, post-test analysis, hardware-in-the-loop testing, and execution of test events that are too costly or difficult to be conducted under actual field conditions. These models will be used by multiple DoD agencies and multiple weapon systems such as, but not limited to Close Combat Weapon Systems, Unmanned Aerial Systems, and Lower Tier Program offices. ***FY 2025 Plans:***	0.717	0.515	0.625

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0604258A / *Target Systems Development*	**Project (Number/Name)** 238 / *Aerial Targets*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Will continue modeling, simulation, and development of aerial threat targets for use throughout Army and DoD simulation environments for evolving Army and DoD simulation standards and evolving implementation techniques; focuses on simulation target models of airplanes, helicopters, missiles, unmanned aerial vehicles, and aerial targets in commonly used formats to support visualization, infrared analysis, and radar analysis simulations; will support verification and validation of models, will provide archiving and distribution of simulation target models to simulation developers throughout the Army and DoD T&E communities. Life cycle maintenance of threat virtual targets will be addressed for creation, validation, and distribution of simulation target models and physics based software and simulation formats evolve. Aerial Virtual Targets will necessarily address continued adoption, utilization, and proliferation of unmanned aerial vehicles as well as rocket, artillery, and mortar (RAM) threats. Aerial Virtual Target models will continue to incorporate electronic attack (EA) and electronic warfare (EW) components. Simulation target models are employed to facilitate simulations for Development Testing (DT) and Operational Testing (OT) planning, test rehearsal, post-test analysis, hardware-in-the-loop testing, and execution of test events that are too costly or difficult to be conducted under actual field conditions. These models will be used by multiple DoD agencies and multiple weapon systems such as, but not limited to Close Combat Weapon Systems, Strategic and Operational Rockets and Missiles, Tactical Aviation and Ground Munition, and Lower Tier Program offices. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY 2024 to FY 2025 increase accounts for the expedition of virtual models' usage into training centers and live emitters.			
Title: Army Ground Aerial Target Control System (AGATCS).	3.397	3.233	3.037
Description: EMD phase activities for the Army Ground Aerial Target Control System in support of a modern current technology target control system for control of subscale and full scale aerial, surface (ground/seaborne), Small Unmanned Aerial System (SUAS) and rotary wing targets. ***FY 2024 Plans:*** AGATCS engineering and manufacturing to provide new capabilities and new features for remote control of aerial (fixed wing, rotary wing, and simulated unmanned aerial systems (SUAS)), ground (heavy, medium, and light vehicles), and seaborne targets with a single control system in support of live fire testing necessary for lethality evaluation and sensor package testing for evaluation of suitability and effectiveness. Funds maintenance of compliance with DODI 8510.01 mandate / DOD Risk Management Framework on all target control systems to ensure a secure operating posture. Funds development of surface target testing requirements to include convoy, formation, collision avoidance, and swarming capabilities for U.S. Army test ranges. Provides Test Centers and the T&E community with a versatile seaborne and rotary wing resource for use in conducting tests to include live fire testing, observation, signal repeater and cargo transportation. ***FY 2025 Plans:***			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0604258A / *Target Systems Development*	**Project (Number/Name)** 238 / *Aerial Targets*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Army Ground Aerial Target Control System (AGATCS) engineering and manufacturing to provide new capabilities and new features for remote control of aerial (fixed wing, rotary wing, and simulated unmanned aerial systems), ground (heavy, medium, and light vehicles), and seaborne targets with a single control system in support of live fire testing necessary for lethality evaluation and sensor package testing for evaluation of suitability and effectiveness. Funds maintenance of compliance with DODI 8510.01 mandate / DoD Risk Management Framework on all target control systems to ensure a secure operating posture. Funds development of surface target testing requirements to include convoy, formation, collision avoidance, and swarming capabilities moving toward coordinated time of arrival for multi domain operations at U.S. Army test ranges. Provides Test Centers and the T&E community with a versatile seaborne and rotary wing resource for use in conducting tests to include live fire testing, observation, signal repeater and cargo transportation. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY2025 decrease to maintain planned lifecycle of this effort.			
Title: Unmanned Aerial System - Target (UAS-T). ***Description:*** Technical updates and life cycle management activities for the UAS-T and COTS UAS platforms to provide Threat representative support for test and experimentation missions. Includes technical support for development, demonstration, integration of payloads, and technical oversight of the targets' acquisition and ground support equipment. ***FY 2024 Plans:*** Technical and life cycle management for the Unmanned Aerial System-Threat (UAS-T) to operate and maintain a generic, tactical class unmanned aircraft system target to support a variety of test requirements by providing a generic threat representative aerial target to support test and experimentation missions. Projects to be supported include the Space and Missile Defense Command, Patriot, and the Joint Integration Air and Missile Defense Organization live fire testing. This activity will continue to require technical support for investigation, demonstration, and integration of a more economical target, to include technical oversight of the targets' acquisition and ground support equipment. ***FY 2025 Plans:*** Technical and life cycle management of Unmanned Aerial System-Target (UAS-T) platforms to operate and maintain a fleet of both tactical class UAS-Ts and commercial-off-the-shelf (COTS) UAS. These efforts support a variety of test requirements by providing threat representative UAS aerial targets for test and experimentation missions. Provides UAS-T and COTS UAS platforms to White Sands Missile Range, Yuma, and Threat Systems Management Office Operations teams to support various Army test events. This activity will continue to require technical support for development, demonstration, and integration of payloads, to include technical oversight of the targets' acquisition and ground support equipment. ***FY 2024 to FY 2025 Increase/Decrease Statement:***	3.831	1.474	5.253

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
FY 2024 to FY 2025 increase in funding will provide additional platforms for Army test events to align with Army priorities and support current Army modernization efforts with UAS-T/UAS-C platforms.			
Title: High Speed Aerial Target (HSAT).	3.838	2.788	3.118
Description: Funds the EMD phase for the replacement of the aging MQM-107 with the new BQM-167A to provide a realistic aerial target capable of simulating the performance of enemy aircraft; technical and life cycle management activities for equipment, to include engineering change proposals, technology obsolescence, and safety and system data documentation for the High Speed Aerial Target. Program requires technical support for investigation, demonstration, and integration of a more economical target. Technical oversight of the replacement targets' acquisition along with Ground Support Equipment (GSE) and other activities related to getting it operational is essential; provides a realistic aerial target capable of simulating the performance of enemy aircraft to aid in the research, development, test, and evaluation of weapons systems and aid in training operational units employing production missile systems.			
FY 2024 Plans: The U.S Army Threat Systems Management Office provides Aerial Targets to customers for threat realism required by law in Title 10 U.S.C., Section 2366 (Live Fire Test & Evaluation) for the testing of ACAT I/II major munitions, missile programs, or product improvements of these programs. This line is the technical sustainment of all HSATs. This funding covers the engineering, integration, safety, cyber security, technology obsolescence, safety and system data documentation, Air Worthiness Release development, and flight waivers for the entire enterprise, as well as non-recurring engineering for software/firmware updates, and minor product upgrades. This includes the MQM-107, MQM-178, BQM-34, BQM-167, and MQM-185. These HSATs will continue to support Test & Evaluation programs such as Patriot, Integrated Air and Missile Defense, Sentinel Radar, Cruise Missile Defense System, and classified programs for Army and Tri-Service customers.			
FY 2025 Plans: The U.S Army Threat Systems Management Office provides Aerial Targets to customers for threat realism required by law in Title 10 U.S.C., Section 2366 (Live Fire Test & Evaluation) for the testing of ACAT I/II major munitions, missile programs, or product improvements of these programs. This line is the technical sustainment of all High Speed Aerial Targets (HSATs). This funding covers the engineering, integration, safety, cyber security, technology obsolescence, safety and system data documentation, Air Worthiness Release development, and flight waivers for the entire enterprise, as well as, non-recurring engineering for software/ firmware updates, and minor product upgrades. This includes the MQM-107, MQM-178, BQM-34, and BQM-167. These HSATs will continue to support Test & Evaluation for Short and Intermediate Effectors for Layered Defense Project Office, programs such as Indirect Fire Protection Capability, and classified programs for Army and Tri-Service customers.			
FY 2024 to FY 2025 Increase/Decrease Statement:			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
FY 2024 to FY 2025 increase in funding aligns with Army priorities to support the High Speed Aerial Target fleet with necessary target modifications, upgrades, and technical support required to meet Army modernization efforts.			
Accomplishments/Planned Programs Subtotals	12.258	8.420	12.453

	FY 2023	FY 2024
Congressional Add: Replacement of Engines for Aerial Targets ***FY 2023 Accomplishments:*** Congressional Add FY 2023 provides the development a new US manufactured engine for the MQM-178 Aerial Target Platform. Provides Army Multi-Domain Operations (MDO) programs with an ideal cruise missile surrogate.	10.000	-
Congressional Add: UAS Swarm Threat Representation, Detection and Mitigation ***FY 2023 Accomplishments:*** Congressional Add FY 2023 provides the development of US produced UAS platforms, ground control system, mission planner/simulation, payloads, and system mobility for Army CTC's and DT & OT weapons testing in support of Army readiness and modernization. Also includes the development of 5G NSA cellular network simulator, field deployable 5G network system, and 5G NSA/SA CORE network capable of interoperability with foreign and future domestic architectures.	25.000	-
Congressional Adds Subtotals	35.000	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 6	R-1 Program Element (Number/Name) PE 0604258A / *Target Systems Development*	Project (Number/Name) 459 / *Ground Targets*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
459: *Ground Targets*	-	6.176	3.453	3.335	-	3.335	3.752	3.792	3.834	3.873	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This Project funds Army efforts to support test and evaluation (T&E) of advanced weapon systems and supports Army Modernization, Multi-Domain Operations, and Tri-Service readiness by developing ground target surrogates, producing threat representative emitters, acquiring foreign equipment, and developing virtual target computer models of ground vehicle targets. These products are required to adequately stress weapon systems undergoing T&E. The United States Army is the Tri-Service lead for providing mobile ground targets for T&E. This tasking includes long-range planning to determine future target needs and development of coordinated requirement documents; the centralized management of the ground target research, development, test and evaluation processes; execution of the validation process; acquisition of foreign equipment; and continuing maintenance, storage, and development/enhancement/update via engineering services of developed and acquired targets to ensure availability for T&E customers. This Project also manages use of current assets and operates a centralized spare parts program.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Mobile Ground Target Operations (MGTO)	2.017	1.719	1.535
Description: MGTO provides oversight of five Primary Operating Centers to include operation, storage, maintenance, repair, safety and configuration management. The objective of the MGTO effort is to support the testing community as fully, efficiently and effectively as possible. The MGTO centrally manages a fleet of foreign threat ground vehicles while maintaining the foreign integrity of the assets.			
FY 2024 Plans: Will maintain a fleet of reusable ground targets emulating relevant, current, and emerging threats which provides cost effective solutions for T&E. The MGTO will centrally manage a fleet of foreign threat ground vehicles while maintaining the foreign integrity of the assets. The MGTO will provide support and oversight for actual threat foreign ground vehicles and mobile ground target surrogate vehicles for use as threat targets by the T&E community for destructive and non-destructive scenarios. Efforts will support users such as, but not limited to Army Futures Command Cross Functional Teams (CFTs) Apache 64E, Joint Air to Ground Missile, Javelin, Extended Range Guided Multiple Launch Rocket System, Army Tactical Missile System, Cruise Missile Defense System, Precision Fires, Counter Rocket Artillery and Missile, Close Combat Weapon System, and other research, prototyping, and operational users.			
FY 2025 Plans: Will maintain a fleet of reusable ground targets emulating relevant, current, and emerging threats which provides cost effective solutions for T&E. The MGTO will centrally manage a fleet of foreign threat ground vehicles while maintaining the foreign integrity of the assets. The MGTO will provide support and oversight for actual threat foreign ground vehicles and mobile ground target			

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
surrogate vehicles for use as threat targets by the T&E community for destructive and non-destructive scenarios. Efforts will support users such as, but not limited to Army Futures Command Cross Functional Teams Apache 64E, Joint Air to Ground Missile, Javelin, Extended Range Guided Multiple Launch Rocket System, Army Tactical Missile System, Cruise Missile Defense System, Precision Fires, Counter Rocket Artillery and Missile, Close Combat Weapon System, and other research, prototyping, and operational users. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY2025 decrease to maintain planned lifecycle of this effort.			
Title: Mobile Ground Targets Hardware (MGTH) ***Description:*** MGTH provides a mix of actual threat assets and surrogate targets to support Army T&E events. ***FY 2024 Plans:*** Will provide cost effective and highly threat representative surface targets (consisting of actual foreign equipment as well as surrogates) for Test and Evaluation of multiple weapon systems. Will continue to provide surface targets to meet the functionality and signature fidelity requirements of the objective force. Will acquire actual foreign equipment, to include insurgent vehicles, to meet known weapon system target shortfalls. Will continue to initiate analysis and design efforts to address specific capability shortfalls and the ability to develop threat representative surrogates. ***FY 2025 Plans:*** Will provide cost effective and highly threat representative surface targets (consisting of actual foreign equipment as well as surrogates) for test and evaluation of multiple weapon systems. Will continue to provide surface targets to meet the functionality and signature fidelity requirements of the objective force. Will acquire actual foreign equipment, to include insurgent vehicles, to meet known weapon system target shortfalls. Will continue to initiate analysis and design efforts to address specific capability shortfalls and the ability to develop threat representative surrogates. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY2025 decrease to maintain planned lifecycle of this effort.	0.515	0.662	0.567
Title: Ground Virtual Targets ***Description:*** Government System T&E to support the research and development of Ground Virtual Targets. Virtual Targets are employed by multiple Department of Defense agencies and weapon systems to facilitate simulations for Developmental and Operational Test planning, rehearsal, post-test analysis, hardware-in-the-loop testing, and execution of test events that are too costly or difficult to be conducted under actual field conditions. ***FY 2024 Plans:***	0.708	0.722	0.562

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Will continue engineering and manufacturing for Ground Virtual Targets for evolving Army and DoD simulation standards and evolving implementation techniques. Will focus specifically on the modeling of threat Integrated Air Defense Assets (IADS) following a new format from National Ground Intelligence Center (NGIC). These new Overarching Dynamic Electronic-warfare System Standard Architecture (ODESSA) models will define the radar parameters in a standard format that will permit near real-time threat emitter updates by ingesting these pulse descriptor words (PDW) directly into the Software Defined Radio / Radar (SDR) emitter currently being developed. Using Intelligence Community (IC) validated models will shorten the validation of the threat emitters by not less than 75% of the current time it takes a threat emitter to complete the validation phase and will provide archiving and distribution of simulation target models to simulation developers throughout the Army and DoD Test & Evaluation communities. Life cycle maintenance of threat virtual targets will be addressed for creation, validation, and distribution of simulation target models and physics-based software as simulation formats evolve. Ground Virtual Targets will address continued application of cross domain, air defense, and denied access threats. Ground Virtual Target models will continue to incorporate electronic attack (EA) and electronic warfare (EW) components for air defense systems and simulations. Simulation target models are employed to facilitate simulations for developmental test (DT) and operational test (OT) planning, test rehearsal, post-test analysis, hardware-in-the-loop testing, and execution of test events that are too costly or difficult to be conducted under actual field conditions. These models will be used by multiple DoD agencies and multiple weapon systems such as, but not limited to Close Combat Weapon Systems, Strategic and Operational Rockets and Missiles, and Tactical Aviation and Ground Munition offices.			
FY 2025 Plans: Will continue engineering and manufacturing for Ground Virtual Targets for evolving Army and Department of Defense (DoD) simulation standards and evolving implementation techniques. Will focus specifically on the modeling of threat Integrated Air Defense Assets following a new format from National Ground Intelligence Center. These new Overarching Dynamic Electronic-warfare System Standard Architecture models will define the radar parameters in a standard format that will permit near real-time threat emitter updates by ingesting these pulse descriptor words directly into the Software Defined Radio / Radar emitter currently being developed. Using Intelligence Community validated models will shorten the validation of the threat emitters by not less than 75% of the current time it takes a threat emitter to complete the validation phase and will provide archiving and distribution of simulation target models to simulation developers throughout the Army and DoD Test & Evaluation communities. Life cycle maintenance of threat virtual targets will be addressed for creation, validation, and distribution of simulation target models and physics-based software as simulation formats evolve. Ground Virtual Targets will necessarily address continued application of cross domain, air defense, and denied access threats. Ground Virtual Target models will continue to incorporate electronic attack and electronic warfare components for air defense systems and simulations. Simulation target models are employed to facilitate simulations for developmental test and operational test planning, test rehearsal, post-test analysis, hardware-in-the-loop testing, and execution of test events that are too costly or difficult to be conducted under actual field conditions. These models will be used			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0604258A / *Target Systems Development*	**Project (Number/Name)** 459 / *Ground Targets*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
by multiple DoD agencies and multiple weapon systems such as, but not limited to Close Combat Weapon Systems, Strategic and Operational Rockets and Missiles, and Tactical Aviation and Ground Munition offices. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY2025 decrease to maintain planned lifecycle of this effort.			
Title: Low Cost Ground Targets ***Description:*** This proof-of-concept utilizes lower-cost Software Defined Radio (SDR) technology to demonstrate the feasibility of replicating a scalable, diverse, high-density Radio Frequency (RF) environment capable of supporting MDO, Test and Training within cost constraints. This proposed solution develops low-cost/low-risk solutions to emulate adversary high-dense RF environments using components developed for SDRs, coupled with available antennas and Commercial-Off-the-Shelf (COTS) devices and products to demonstrate operations. SDR radar systems have been employed mainly in military operations, like target detection, target recognition, surveillance, and other specific applications, such as meteorology and air-traffic control. However, in recent years, large-scale commercial applications are driving standard radar system operations at significant cost reductions with increased adaptability. According to this new operating context, Software Defined Radar (SDRadar) represents new challenges in radar technology given the possibility of performing basic operations (i.e. mixing, filtering, modulation, and demodulation) by simply employing software modules in order to eliminate much of the radar specific processing hardware. The main goal of a software defined approach is related not only to a clear cost reduction, but also to a significant increase of the versatility of the system, since signal generation and signal processing parameters may be easily adapted to the task under consideration. Integration into test and training range and Home Station networks, such as the Threat Battle Command Force (TBCF), provides significant Integrated Air Defense Systems (IADS) capability utilizing multiple units. This program supports US Army acquisition ability to adequately stress weapon systems undergoing both Developmental and Operational Tests, as well as Live, Virtual, and Constructive (LVC) training. The low-cost systems emulate known threat radars across multiple radar bands and to develop as many emitters as possible to create a dense, RF environment. ***FY 2024 Plans:*** Continue to build in sufficient quantities to provide threat emitters to support Developmental and Operational Tests across multiple Army Test and Training programs, as well as the Cross Functional Teams. In addition, units will be deployed at Combined Training Centers (CTC) as well as to various Army installations in support of Home Station Training in a Live, Virtual and Constructive (LVC) environment. Develop interfaces required to integrate units into the Threat Battle Command Force (TBCF)	2.936	0.350	0.671

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0604258A / *Target Systems Development*	**Project (Number/Name)** 459 / *Ground Targets*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
operational system. Develop Time Space Position Information (TSPI) interface requirements that will permit the tracking of targets real-time to support developmental and operational tests as well as training exercises. ***FY 2025 Plans:*** Provide threat emitters to support Developmental and Operational Tests across multiple Army Test and Training programs. In addition, units will be deployed at Combined Training Centers as well as to various Army installations in support of Home Station Training in a Live, Virtual and Constructive environment. Develop interfaces required to integrate units into the Threat Battle Command Force operational system. Develop Time Space Position Information interface requirements that will permit the tracking of targets real-time to support developmental and operational tests as well as training exercises. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Army increased funding in FY 2025 to ensure adequate funds were being applied to Intelligence Community Modeling efforts. The additional funds will assist in pulling the interface development to live emitters to the left.			
Accomplishments/Planned Programs Subtotals	6.176	3.453	3.335

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A