Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Army												Date: March 2023
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 3: *Advanced Technology Development (ATD)*					R-1 Program Element (Number/Name) PE 0603134A *I Counter Improvised-Threat Simulation*							
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	-	23.920	21.486	21.672	-	21.672	21.680	21.968	21.983	22.223	0.000	154.932
CD3: *Counter Improvised-Threat Simulation*	-	23.920	21.486	21.672	-	21.672	21.680	21.968	21.983	22.223	0.000	154.932

A. Mission Description and Budget Item Justification

This Program Element (PE) develops technology for detecting and defeating Improvised Explosive Devices (IEDs). The goal of this research is to increase the ability of deployed forces to positively identify IEDs with minimal false alarms and positively neutralize or mitigate the effects of IEDs with minimal collateral damage.

This PE is executed by the Army Futures Command (AFC) in coordination with the Under Secretary of Defense for Research and Engineering (USD/R&E) and the Defense Threat Reduction Agency (DTRA).

B. Program Change Summary ($ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	24.747	21.486	21.571	-	21.571
Current President's Budget	23.920	21.486	21.672	-	21.672
Total Adjustments	-0.827	0.000	0.101	-	0.101
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.827	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	0.101	-	0.101

Change Summary Explanation

Increased funding due to revised economic assumptions.

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army			Date: March 2023
Appropriation/Budget Activity 2040 / 3	R-1 Program Element (Number/Name) PE 0603134A / *Counter Improvised-Threat Simulation*	Project (Number/Name) CD3 / *Counter Improvised-Threat Simulation*	

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
CD3: *Counter Improvised-Threat Simulation*	-	23.920	21.486	21.672	-	21.672	21.680	21.968	21.983	22.223	0.000	154.932
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This Project develops technology for detecting and defeating improvised explosive devices (IEDs). The goal of this research is to increase the ability of deployed forces to positively identify IEDs with minimal false alarms and increase the rate of advance of deployed forces as well as to identify vehicle and personnel borne IEDs at fixed sites. Additionally the objective is to positively neutralize or mitigate the effects of IEDs with minimal collateral damage.

This Project is executed by the Army Futures Command (AFC) in coordination with the Under Secretary of Defense for Research and Engineering (USD/R&E) and the Defense Threat Reduction Agency (DTRA).

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
Title: Standoff Detection of IED Threats in All Environments	9.804	9.791	10.221
Description: This effort develops technology to detect IED threats at standoff distances. Technologies include electro-optical, radar, light detection and ranging (LIDAR), atomic magnetometer and other technologies applicable to detecting IEDs and their components that can be integrated on dismounted Soldiers, ground, water-based and aerial systems or at fixed sites. This effort also develops technologies and network techniques to detect the electronic signature of radio-controlled IEDs. Technologies will be validated on their ability to detect IEDs and their components within infrastructure, on or under ground and water, and attached to vehicles or personnel. The goal for these technologies is to achieve high probabilities of detection while minimizing false alarms from naturally occurring and man-made entities.			
FY 2023 Plans: Optimize electro-optical/infrared (EO/IR), electromagnetic (EM), neutron-gamma and radio frequency sensor technologies applicable to detecting IEDs and their components in simulated field environments. Integrate sensor technologies on Soldier-borne, ground, and aerial platforms or at fixed sites to validate IED detection performance. Demonstrate and assess detection of IEDs or their components when buried, camouflaged or attached to vehicles or personnel in various operational conditions.			
FY 2024 Plans: Will mature EO/IR, EM, neutron-gamma, and RF sensor technologies to improve detection performance of highly obscured IEDs in a broad range of emplacement scenarios and environments; integrate sensor technologies on Soldier-borne, ground, and aerial			

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
platforms or at fixed sites; demonstrate and assess detection of IEDs configured as vehicle borne IEDs and personnel borne IEDs in various operational conditions while improving form factor and cost considerations. ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Funding increase reflects planned lifecycle of this effort.			
Title: IED Neutralization, Prevention and Mitigation ***Description:*** This effort develops technology critical to neutralizing and mitigating the effects of IEDs at standoff distances. Technologies include directed energy sources, energetic or kinetic effectors, encasement of the threat and Soldier, platform and base protection technologies. These technologies will be demonstrated to neutralize IEDs in place and protect soldiers and equipment from the effects of IEDs. This effort also explores advanced techniques to robotically manipulate IEDs. The goal for these technologies is to achieve high probabilities of avoiding the IED's effects by friendly forces. ***FY 2023 Plans:*** Validate energetic and directed energy technologies to neutralize IEDs or mitigate IED effects. Continue to demonstrate novel C-IED mitigation capabilities in militarily relevant environments. ***FY 2024 Plans:*** Will mature and validate kinetic, jamming, and directed energy neutralization technologies to increase neutralization and mitigation performance to reduce impacts to maneuver speeds; demonstrate novel C-IED mitigation capabilities in militarily relevant scenarios in additional environments. ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Funding increase reflects planned lifecycle of this effort.	4.833	2.948	3.138
Title: Enabling C-IED Technologies ***Description:*** This effort develops technologies that support the detection, prevention, neutralization and mitigation of IED threats. Technologies exploit data sciences including sensor processing algorithms, integration of sensor data, data processing and analytics, threat forecasting, and autonomous maneuver. Techniques will be demonstrated that determine detection of IED threats and identify trends to forecast probabilities of encountering or attributing IEDs based on operational data and machine learning techniques. The goals for these technologies are to achieve high probabilities of detecting, predicting and attributing IEDs threats. ***FY 2023 Plans:*** Validate advanced sensor processing techniques and their ability to detect IED threats with reduced false alarms. Exploit foreign partner sources and existing U.S. data repositories to optimize emerging IED threat data sets in varying environments and	9.283	8.043	8.313

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
develop new signature attributes that span multiple sensor modalities. Validate machine learning and emerging data analysis techniques to autonomously detect threats with limited operator input. ***FY 2024 Plans:*** Will demonstrate lower size, weight, and power sensor components and improved processing techniques to detect IED threats with reduced false alarms; leverage threat data from foreign partners and use existing U.S. threat data repositories to optimize, develop, and mature new IED signature attributes in varying environments for multiple sensor modalities; demonstrate artificial intelligence and machine learning techniques to increase autonomous detection capability and reduce operator burden. ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Funding increase reflects planned lifecycle of this effort.			
Title: SBIR/STTR Transfer ***Description:*** Funding transferred in accordance with Title 15 USC §638 ***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	-	0.704	-
Accomplishments/Planned Programs Subtotals	23.920	21.486	21.672

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A