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Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Army **Date:** February 2020

Appropriation/Budget Activity 2040: <i>Research, Development, Test & Evaluation, Army / BA 3: Advanced Technology Development (ATD)</i>	R-1 Program Element (Number/Name) PE 0603920A / <i>Humanitarian Demining</i>
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COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
Total Program Element	-	0.000	0.000	8.515	-	8.515	8.756	8.730	8.789	8.966	0.000	43.756
CD5: <i>Humanitarian Demining</i>	-	0.000	0.000	8.515	-	8.515	8.756	8.730	8.789	8.966	0.000	43.756

Note

This is a new start in FY2021.

This Program Element (PE) is a New Start for Fiscal Year 2021 (FY21).

A. Mission Description and Budget Item Justification

The Humanitarian Demining Research and Development (HD R&D) program develops, demonstrates and validates cost-effective technologies for use in humanitarian demining via Outside Continental United States (OCONUS) operational field evaluations. The HD R&D program's low-cost and highly effective technology reduces the landmine and unexploded ordnance (UXO) / improvised explosive device (IED) threat to deployed United States (US) forces and the local population. The HD R&D program coordinates with the Department of State's Weapons Removal and Abatement Program, the Department of Defense DoD Humanitarian Mine Action (HMA) programs of the Combatant Commands (CCMDs), and international mine action organizations and foreign militaries. New technology requirements and areas of emphasis are identified and validated at annual Requirements Workshop and UXO/IED Working Group Meetings. Technology investments are prioritized using the results of these meetings and CCMD security cooperation and theater campaign plan HMA objectives. The HD R&D program advances the state-of-the-art of demining technologies and evaluates these technologies utilizing host nation humanitarian demining partners.

The HD R&D program supports and bolsters the CCMD stability operations mission as directed under Department of Defense Instruction (DODI) 3000.05 to foster mil-to-mil engagement, and bolster economic security and development with partner nations worldwide. Additionally, the HD R&D program fosters nations' mine action capacity while improving DoD's visibility and access, generating long-term positive perceptions of DoD and the US, and fostering collaborative relationships with host nation governments. It also directly supports the National Defense Strategy through ensuring common domains remain open and free.

The HD R&D Program utilizes a research and development plan based on operational test data gained through Operational Field Evaluations (OFEs). These OFEs provide the HD R&D program a unique capability to collect this data against live mines/UXO in actual minefields around the world. This data is unavailable to any other DoD organization. This OFE data drives future HD R&D program investment decisions and is shared and leveraged by the U.S. Army's Army Futures Command programs to further improve U.S. forces' technologies. In addition, the HD R&D program provides mine and UXO detector training to the CCMDs at the Humanitarian Demining Training Center (HDTTC) in support of Military to Military training and partnerships. Since 1995 the program has fielded technologies for 234 evaluations in 43 countries, including Afghanistan, Angola, Cambodia, Colombia, Iraq, Kosovo, Ukraine, and Vietnam. The program's technologies have cleared 71.2 million square meters of the world's toughest minefields, and found or destroyed 213,220 mines and UXO.

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Appropriation/Budget Activity 2040: <i>Research, Development, Test & Evaluation, Army / BA 3: Advanced Technology Development (ATD)</i>	R-1 Program Element (Number/Name) PE 0603920A / <i>Humanitarian Demining</i>
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The HD R&D program supports the DoD's strategic guidance to address instability and reduce the demand for significant US force commitments to stability operations; with (DODI) 3000.05 (Stability Operations) and Chairman of the Joint Chiefs of Staff Instruction (CJCSI) 3207.01C (Department of Defense Support to Humanitarian Mine Action) to reduce the social, economic and environmental impact of landmines and unexploded ordnance.

This PE will be executed by the Army Futures Command (AFC).

Work in this PE was previously conducted under DoD PE 0603920D8Z, Humanitarian Demining.

B. Program Change Summary (\$ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Previous President's Budget	0.000	0.000	0.000	-	0.000
Current President's Budget	0.000	0.000	8.515	-	8.515
Total Adjustments	0.000	0.000	8.515	-	8.515
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	8.515	-	8.515

Change Summary Explanation

The FY21 increase is the result of a transfer from DoD PE 0603920D8Z, Humanitarian Demining.

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Appropriation/Budget Activity 2040 / 3					R-1 Program Element (Number/Name) PE 0603920A / Humanitarian Demining				Project (Number/Name) CD5 / Humanitarian Demining			
COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
CD5: <i>Humanitarian Demining</i>	-	0.000	0.000	8.515	-	8.515	8.756	8.730	8.789	8.966	0.000	43.756

Note

This is a new start in FY2021.

This Project is a New Start for Fiscal Year 2021 (FY21).

A. Mission Description and Budget Item Justification

The Humanitarian Demining Research and Development (HD R&D) program develops, demonstrates and validates cost-effective technologies for use in humanitarian demining via Outside Continental United States (OCONUS) operational field evaluations. The HD R&D program's low-cost and highly effective technology reduces the landmine and unexploded ordnance (UXO) / improvised explosive device (IED) threat to deployed United States (US) forces and the local population. The HD R&D program coordinates with the Department of State's Weapons Removal and Abatement Program, the Department of Defense DoD Humanitarian Mine Action (HMA) programs of the Combatant Commands (CCMDs), and international mine action organizations and foreign militaries. New technology requirements and areas of emphasis are identified and validated at annual Requirements Workshop and UXO/IED Working Group Meetings. Technology investments are prioritized using the results of these meetings and CCMD security cooperation and theater campaign plan HMA objectives. The HD R&D program advances the state-of-the-art of demining technologies and evaluates these technologies utilizing host nation humanitarian demining partners.

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Appropriation/Budget Activity 2040 / 3	R-1 Program Element (Number/Name) PE 0603920A / Humanitarian Demining	Project (Number/Name) CD5 / Humanitarian Demining
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This PE will be executed by the Army Futures Command (AFC).

Work in this PE was previously conducted under DoD PE 0603920D8Z, Humanitarian Demining.

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

	FY 2019	FY 2020	FY 2021
<p>Title: Humanitarian Demining Technologies</p> <p>Description: The HD R&D program adapts commercial-off-the-shelf equipment, integrates mature technologies, and leverages R&D activity within the Army, particularly the AFC CCDC Command, Control, Communications, Computers, Combat Systems, Intelligence, Surveillance, and Reconnaissance (C5ISR) Night Vision and Electronic Sensors Directorate (NVESD) Tactical Countermine mission area. This effort aims to improve existing technologies for mine/UXO detection, technical survey/area reduction, mechanical mine/UXO clearance, vegetation clearance, and mechanical mine neutralization.</p> <p>FY 2021 Plans: Will deploy new technologies, including the Scorpion UXO detection system, Amulet IED detector and a mechanical dozer mounted mine clearance system to Afghanistan; Scorpion UXO detection system to Lebanon; Badger and Little Storm mine/UXO clearance systems to Cambodia; Little Storm and multiple Rambo demining technologies to Colombia; multi sensor handheld mine detectors to Colombia and Lebanon; commercial off-the-shelf (COTS) UXO detector and a mechanical screener to Israel, Robomax area preparation and Vehicle-Mounted Mine Detection Systems to Ukraine. Will complete ongoing equipment developments/modifications and test technology including survey and mine/UXO detection technologies such as Combined Auxiliary Positioning System, Empact 3D, Minelab MDS-10, Minelab F3Ci, Minelab F3 Compact, Vallon VMH4, Vallon VMR3, Vallon VR-1, Cobham Amulet, Ceia CMD3 and Minex 4.600; and vegetation and mine clearance and neutralization technologies. Will continue the successful ongoing operational evaluations from FY20 and support the combatant commands Embassy staffs by conducting new site surveys and country assessments in Colombia, Laos, Lebanon, Thailand, Vietnam. Will convene HD R&D Requirements Workshop to identify technology needs for humanitarian mine action and will develop, test and evaluate new prototype technologies based on feedback from the field and requirements workshop.</p> <p>FY 2020 to FY 2021 Increase/Decrease Statement: The increase in FY21 is due to a realignment from PE 0603920D8Z Humanitarian Demining, as a result of the transfer to the Army.</p>	-	-	8.515
Accomplishments/Planned Programs Subtotals	-	-	8.515

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

N/A

Remarks

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2040 / 3	PE 0603920A / <i>Humanitarian Demining</i>	CD5 / <i>Humanitarian Demining</i>

D. Acquisition Strategy

N/A