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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Office of Secretary Of Defense **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY				R-1 ITEM NOMENCLATURE							
0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>				PE 0603920D8Z: <i>Humanitarian De-mining</i>							
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	14.362	14.735	14.996	-	14.996	15.372	13.976	13.868	12.788	Continuing	Continuing
920: <i>Humanitarian De-mining</i>	14.362	14.735	14.996	-	14.996	15.372	13.976	13.868	12.788	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

The Humanitarian Demining Research and Development (HD R&D) program element develops, demonstrates and evaluates prototype mine/unexploded ordnance (UXO) clearing technologies for U.S. forces and for indigenous, DoD-supported, host nation-conducted demining operations. The HD R&D Program focuses on development of technologies to improve the efficiency and safety of removing post-conflict landmines and UXO, which are a significant danger to U.S. forces performing peace and stability operations, as well as to civilians. The HD R&D Program adapts commercial-off-the-shelf equipment, integrates mature technologies, and leverages R&D activity within DoD, particularly in the Army's Night Vision and Electronic Sensors Directorate (NVESD) Tactical Countermines mission area. Equipment capabilities are assessed by host nation demining partners (foreign military, non-governmental organizations and mine action centers) in actual demining conditions. Since 1995 the Program has fielded technology for 105 evaluations in 35 countries, including Iraq and Afghanistan. The program aims to improve existing technologies for: mine/UXO detection, technical survey/area reduction, mechanical mine/UXO and vegetation clearance, mine neutralization, individual deminer protection, marking and mapping of mines/minifields, and post-clearance quality assurance (QA). Areas of emphasis are identified and validated at a biennial Requirements Workshop held by the Office of the Assistant Secretary of Defense for Special Operations, Low Intensity Conflict and Interdependent Capabilities (OASD SO/LIC&IC). The Requirements Workshop involves representatives from DOS, U.S. combatant commands (COCOMS) and mine-affected nations. Under OASD SO/LIC&IC, the HD R&D Program works closely with the COCOMS and the Humanitarian Demining Training Center (HDTC) to "support the Warfighter" by reducing insurgent access to explosives, providing engagement opportunities for DoD personnel, and speeding improvements to detection and clearance technologies used by U.S. forces in support of USG operations.

B. Program Change Summary (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	14.687	14.735	15.016	-	15.016
Current President's Budget	14.362	14.735	14.996	-	14.996
Total Adjustments	-0.325	-	-0.020	-	-0.020
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-0.184	-			
• SBIR/STTR Transfer	-0.141	-			
• Economic Assumptions	-	-	-0.020	-	-0.020

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>		R-1 ITEM NOMENCLATURE PE 0603920D8Z: <i>Humanitarian De-mining</i>		
C. Accomplishments/Planned Programs (\$ in Millions)		FY 2010	FY 2011	FY 2012
Title: 0603920D8Z - SO/LIC Humanitarian De-mining		14.362	14.735	14.996
Description: The Humanitarian Demining Research and Development (HD R&D) program element develops, demonstrates and evaluates prototype mine/UXO clearing technologies for U.S. forces and for indigenous, DoD-supported, host nation-conducted demining operations. The HD R&D Program focuses on development of technologies to improve the efficiency and safety of removing post-conflict landmines and UXO, which are a significant danger to U.S. forces performing peace and stability operations, as well as to civilians. The HD R&D Program adapts commercial-off-the-shelf equipment, integrates mature technologies, and leverages R&D activity within DoD, particularly in the Army's Night Vision and Electronic Sensors Directorate (NVESD) Tactical Countermine mission area. Equipment capabilities are assessed by host nation demining partners (foreign military, non-governmental organizations and mine action centers) in actual demining conditions. Since 1995 the Program has fielded technology for 105 evaluations in 35 countries, including Iraq and Afghanistan. The program aims to improve existing technologies for: mine/UXO detection, technical survey/area reduction, mechanical mine/UXO and vegetation clearance, mine neutralization, individual deminer protection, marking and mapping of mines/minesfields, and post-clearance quality assurance (QA). Areas of emphasis are identified and validated at a biennial Requirements Workshop held by the Office of the Assistant Secretary of Defense for Special Operations, Low-Intensity Conflict and Interdependent Capabilities (OASD SO/LIC&IC). The Requirements Workshop involves representatives from DOS, U.S. combatant commands (COCOMS) and mine-affected nations. Under OASD SO/LIC&IC, the HD R&D Program works closely with the COCOMS and the Humanitarian Demining Training Center (HDTTC) to "support the Warfighter" by reducing insurgent access to explosives, providing engagement opportunities for DoD personnel, and speeding improvements to detection and clearance technologies used by U.S. forces in support of USG operations. FY 2010 Accomplishments: The HD R&D Program actively engaged in the operational field evaluations of 37 humanitarian demining (HD) technologies in 10 countries. As a result of requests made during the biennial Requirements Workshop, OCONUS field assessments, and in-house developments, the HD R&D Program deployed many of its systems to humanitarian demining organizations overseas, including locations in Afghanistan and Iraq. In addition, the program provided technology in support of CENTCOM (Tajikistan) and PACOM (Sri Lanka). Deployments initiated in FY2010 included mine sifting equipment in Iraq, the Mini MineWolf in Tajikistan on the Afghan border, mine neutralization equipment in Ecuador, and Badger in Cambodia. In addition, the HD R&D Program continued its deployments of the Tempest, Maxx+, Handheld Standoff Mine Detection System (HSTAMIDS), Beaver II, Long-Handled Tools, Storm, Explosive Harvesting System, Sifting Attachments, Survivable Demining Tractors, Uni-Disk, Beaver, Peco, Multi-Tool Excavator, Air-Spade, Improved Backhoe, MANTIS, Orbit Sifter, Walking Tractor, Modular Detection Array, Heavy Detonation Trailer, JCB Loadall, and the Rotary Mine Comb to countries in Africa, South America and Asia. The HD R&D Program continued final development, test and evaluation of prototype technologies in the following areas: individual mine/UXO and minesfield detection, wide area survey, mechanical mine/UXO and vegetation clearance, mine neutralization, individual				

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C. Accomplishments/Planned Programs (\$ in Millions)		FY 2010	FY 2011	FY 2012
soldier/deminer protection, marking and mapping of mines/minefields, and post-clearance quality assurance (QA). The HD R&D Program supported the combatant commands and Embassy staffs by conducting site assessments to determine whether HD equipment could be effectively utilized in Sri Lanka, Colombia, Cambodia, Senegal, Angola and Vietnam. In addition, data from the HD R&D Program's intensive evaluation of HSTAMIDS in the humanitarian demining context continued to provide critical training and enhance development of the U.S. Army's Tactical Countermine HSTAMIDS and NIITEK Ground Penetrating Radar technologies. In FY2010 prototype development, program engineers completed several prototypes, including the Wolverine, Remote Mini Excavator, Mine Stalker and Luxor, which will transition to operational field evaluations in FY2011. In FY2010 the HD R&D Program tested 19 mine detection and clearance systems at Fort AP Hill, Aberdeen Proving Grounds and Yuma Proving Grounds. FY 2011 Plans: The HD R&D Program will complete ongoing equipment developments/modifications and operational field evaluations from FY2010, including new evaluations of the Raptor mine clearance system in Afghanistan, Improved Backhoe mine and vegetation clearance system in Sri Lanka, Hedgehog mine detection and vegetation clearance system in Colombia, Mine Stalker AT and HSTAMIDS mine detection systems in Angola, and Rex vegetation clearance and Luxor UXO detection systems in Cambodia. The HD R&D Program will support the combatant commands and Embassy staffs by conducting site surveys or country assessments in Mozambique, Vietnam, Laos, Macedonia, eastern Cambodia, Sri Lanka, northern Tajikistan and other locations as requested. The program will continue development, test and evaluation of prototype technologies in the following areas: individual mine/UXO and minefield detection, wide area survey, mechanical mine/UXO and vegetation clearance, mine neutralization, individual soldier/deminer protection, marking and mapping of mines/minefields, and post-clearance quality assurance (QA). FY 2012 Plans: The HD R&D Program will complete ongoing equipment developments/modifications and operational evaluations from FY2011. The HD R&D Program will support the combatant commands and Embassy staffs by conducting site surveys or country assessments. The program will continue development, test and evaluation of prototype technologies in the following areas: individual mine/UXO and minefield detection, wide area survey, mechanical mine/UXO and vegetation clearance, mine neutralization, individual soldier/deminer protection, marking and mapping of mines/minefields, and post-clearance quality assurance (QA).				
Accomplishments/Planned Programs Subtotals		14.362	14.735	14.996

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<u>D. Other Program Funding Summary (\$ in Millions)</u> N/A		
<u>E. Acquisition Strategy</u> Following a rapid prototyping strategy, the program emphasizes the use/modification of existing, commercially-available items and components to build functional prototype equipment suited for humanitarian demining operations. This approach is required due to the immediate need for new demining technologies in the face of ongoing U.S. forces and host nation citizen casualties in mine-affected countries. The program evaluates prototype equipment by acquiring it off-the-shelf from industry using competition to the extent possible, by leveraging ongoing countermine R&D efforts in other U.S. and foreign R&D activities, and by taking advantage of extensive in-house fabrication capabilities at the Army's Night Vision and Electronic Sensors Division (NVESD).		
<u>F. Performance Metrics</u> Long Term Strategies: Obtain adequate funding to support critical shortfalls; prioritize proposals that are deemed acceptable and allocate funding accordingly; and establish outreach programs to leverage institutional knowledge and expertise. Performance Indicator and Rating: FY 2010 Target: 70% of currently funded research technologies are completed on time and within budget Complete scheduled R&D project tasks Transition field-ready technologies to host nation demining partners Conduct biennial Humanitarian R&D Program Requirements Workshop FY 2011 Target: 70% of currently funded research technologies are completed on time and within budget Complete scheduled R&D project tasks Transition field-ready technologies to host nation demining partners Basis of FY 2010 to Date Performance Rating: Currently the number of funded research technologies is on track to be completed per the target. Verification: The Humanitarian Demining Program performs program reviews with other USG agencies (DOS PM WRA, DTRA SA/LW, DSCA, HDTC, CENTCOM, PACOM, SOUTHCOM, AFRICOM, EUCOM) and has oversight from OSD SO/LIC&IC. Validation: Completed R&D products increase the capabilities of the DoD to effectively perform demining missions.		

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