Exhibit R-2, RDT&E Budget Item Justification							February 2005	
Appropriation/Budget Activity RDT&E BA 4				R-1 Item Nomenclature: Humanitarian Demining 0603920D8Z				
Cost ($ in millions)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Total PE Cost	12.812	13.426	14.305	14.489	14.480	14.531	14.966	15.312
Humanitarian Demining/P920	12.812	13.426	14.305	14.489	14.480	14.531	14.966	15.312

A. Mission Description and Budget Item Justification:

The Humanitarian Demining (HD) R&D program element demonstrates and evaluates prototype demining systems for US forces and for indigenous DoD supported, host nation conducted demining operations. The Humanitarian Demining R&D Program focuses on technologies to improve the efficiency and safety of the process of eliminating post conflict landmines, which are a significant danger to US forces performing peace and stability operations as well as to civilians. This is accomplished through adaptation of commercial-off-the-shelf equipment, the integration of mature technologies, and leveraging R&D activity within DoD, particularly in the Army Night Vision Electronic Sensor's Directorate (NVESD) Tactical Countermine mission area. One goal is to assess equipment capabilities in actual demining conditions. Under the Office of the Assistant Secretary of Defense for Special Operations and Low Intensity Conflict (OASD(SO/LIC)), the HD R&D Program is a strong participant in the International Test and Evaluation Program (ITEP). The program aims to improve existing technologies for: individual mine and minefield detection; wide area survey; mechanical/mine and vegetation clearance; mine neutralization; individual soldier/deminer protection; detection of explosives in buried mines; verification of the presence of mines; marking and mapping of mines/minefields; post clearance quality assurance (QA); mine awareness training; and individual deminer tools. Areas of emphasis are determined/validated at annual Program Reviews conducted by OASD(SO/LIC). The Program Reviews involve representatives from the combatant commands and from mine affected nations.

B. Program Change Summary:

	FY 2004	FY 2005	FY 2006	FY 2007
Previous President's Budget	13.108	13.747	13.912	14.108
Current President's Budget	12.812	13.426	14.305	14.489
Total Adjustments				
Congressional program reductions				
Congressional rescissions				
Congressional increases				
Reprogrammings	-0.296	-0.321	0.393	0.381

SBIR/STTR Transfer
Other Program Adjustments

C. Other Program Funding Summary: NA

D. Acquisitions Strategy:
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 US 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 maximum 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 NVESD.

E. Performance Metrics:

Humanitarian Demining - 0603920D8Z	
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 2004 Target	• 70% of currently funded research projects completed on time and within budget • 5% increase in the number of research projects accepted • Conduct annual Humanitarian Demining R&D Program International Program Review
FY 2004 Rating	ON TARGET
FY 2005 Target	• 70% of currently funded research projects are completed on time and within budget • 5% increase in the number of research projects accepted • Complete scheduled R&D project tasks • Conduct annual Humanitarian R&D Program International Program Review
FY 2006 Target	• 70% of currently funded research projects are completed on time and within budget • 5% increase in the number of research projects accepted • Conduct annual Humanitarian R&D Program International Program Review • Transition scheduled projects to user communities
FY 2007 Target	• 70% of currently funded research projects are completed on time and within budget • 5% increase in the number of research projects accepted

	• Conduct annual Humanitarian Demining R&D Program International Program Review
Basis of FY 2004 to Date Performance Rating	Currently the number of funded research projects are on track to be completed per the target
Verification	The Humanitarian Demining Program performs program reviews and has oversight from OSD.
Validation	Completed R&D products increase the capabilities of the DoD to effectively perform demining missions.

Exhibit R-2a, RDT&E Project Justification							February 2005	
Appropriation/Budget Activity RDT&E BA 4				Project Name and Number Humanitarian Demining 0603920D8Z				
Cost ($ in millions)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Humanitarian Demining/P920	12.812	13.426	14.305	14.489	14.480	14.531	14.966	15.312

A. Mission Description and Budget Item Justification: The Humanitarian Demining (HD) R&D program element demonstrates and evaluates prototype demining systems for US forces and for indigenous DoD supported, host nation conducted demining operations. The Humanitarian Demining R&D Program focuses on technologies to improve the efficiency and safety of the process of eliminating post conflict landmines, which are a significant danger to US forces performing peace and stability operations as well as to civilians. This is accomplished through adaptation of commercial-off-the-shelf equipment, the integration of mature technologies, and leveraging R&D activity within DoD, particularly in the Army Night Vision Electronic Sensor's Directorate (NVESD) Tactical Countermine mission area. One goal is to assess equipment capabilities in actual demining conditions. Under the Office of the Assistant Secretary of Defense for Special Operations and Low Intensity Conflict (OASD(SO/LIC)), the HD R&D Program is a strong participant in the International Test and Evaluation Program (ITEP). The program aims to improve existing technologies for: individual mine and minefield detection; wide area survey; mechanical/mine and vegetation clearance; mine neutralization; individual soldier/deminer protection; detection of explosives in buried mines; verification of the presence of mines; marking and mapping of mines/minefields; post clearance quality assurance (QA); mine awareness training; and individual deminer tools. Areas of emphasis are determined/validated at annual Program Reviews conducted by OASD(SO/LIC). The Program Reviews involve representatives from the combatant commands and from mine affected nations.

B. Accomplishments/Planned Program

	FY 2004	FY 2005	FY 2006	FY 2007
Accomplishment/Effort/Subtotal Cost	12.812	13.426	14.305	14.489

FY2004 Accomplishments: In support of the Army's PM for Close Combat Systems, fabricated three Rotar Berm Sifters for US Forces in Operation Enduring Freedom. The HD Program modified Army MV-24 Bucket Loaders to add mine clearance capability and armor protection. All three systems are now in use by US Forces in Afghanistan. Completed several operational evaluations of mine/vegetation clearance and neutralization technologies in mine infested regions of the world. These included the Sifting Excavator in Honduras, the Tempest and Uni-Disk in Mozambique, the MAXX Mini-Mulcher in Namibia and Rwanda, and SETCO Tires in Sri Lanka, Djibouti and Georgia and the Minefield Marking Kit to Mozambique. Performed Site Assessments in 10 countries to provide technical advice to the combatant command and Embassy staffs on equipment that would be best suited based on the situation in the country, and to determine if the situation warrants new development efforts by the HD R&D Program. Awarded new contract / small purchase efforts which will result in the evaluation of 25 detection systems, 25 mechanical mine and vegetation clearance prototypes,

11 mine neutralization technologies and 2 individual deminer tool prototypes. Demonstrated / tested 31 prototype technologies. Conducted the annual OASD(SO/LIC) hosted Program Review, attended by representatives from the combatant commands and 18 governments working with DoD to eliminate post-conflict landmines form their countries.
Continued operational evaluations of the Mine Clearing Cultivator and Mine Clearing Sifter in Angola, a Tempest vegetation clearer in Thailand, and the Survivable Demining Tractor and Tools in Thailand. Also continued technical testing of prototype technologies in all mission areas.
For OASD(SO/LIC) and with ITEP participation, began an international field evaluation/demonstration of the Handheld Standoff Mine Detection System (HSTAMIDS) in Thailand and Namibia. Initiated operational evaluations of the Improved Backhoe in Korea, the Solar Battery Charger in Mozambique, the Minefield Marking Kit in Thailand and the Air Spade in Afghanistan and Korea. Initiated a comparative evaluation of existing individual mine neutralization technologies.

FY 2005 Plans: As a result of the outstanding success of the Rotar Berm Sifters in Afghanistan, fabricate four additional systems for US Forces engaged in Operation Enduring Freedom / Operation Iraqi Freedom. Complete operational evaluations of the Mine Clearing Cultivator and Mine Clearing Sifter in Angola, the Tempest in Thailand, and the Survivable Demining Tractor and Tools in Thailand. For OASD(SO/LIC) and with ITEP participation, complete the field evaluation / demonstration of the HSTAMIDS in Thailand and Namibia. Complete the comparative analysis of existing high and low order individual mine neutralization technologies. Continue final development of, test and evaluation of prototype technologies in the following areas: detection technologies for discrimination and confirmation from the tactical countermine area; improved handheld detection technologies; mechanical mine and vegetation clearance systems for removing dense vegetation from mined areas and excavating and clearing mines; non-explosive based mine neutralization technologies able to replace the practice of using explosives in humanitarian demining situations; and development of equipment suitable for area reduction and quality assurance operations.
In support of the combatant commands and Embassy staffs, conduct site survey(s), country assessment(s), and initiate operational field evaluations of prototypes developed under the program in the areas of detection, mine/vegetation clearance, neutralization and personal deminer protection systems in mine-infested regions of the world. Conduct the OASD(SO/LIC) International Program Review. Update and distribute the HD R&D Program Video.

FY 2006 Plans: Complete ongoing equipment developments / modifications, site surveys and operational evaluations from FY2005. Continue development of the following: demonstrate detection technologies for discrimination and confirmation to include leveraging technology with the tactical countermine area; detection technologies to improve detection capability and reduce false alarms; to conduct site survey(s), country assessment(s) and operational field evaluations of detection, mine/vegetation clearance and neutralization systems in mine infested regions of the world; demonstrate individual deminer tools and equipment; and equipment suitable for area reduction and quality assurance operations.
In support of the combatant commands and Embassy staffs , conduct site survey(s), country assessment(s), and initiate operational field evaluations of prototypes developed under the program in the areas of detection, mine/vegetation clearance, neutralization and personal deminer protection systems in mine-infested regions of the world. Conduct the OASD(SO/LIC) International Program Review. Update and distribute the HD R&D Program Video.

FY 2007 Plans: Complete ongoing equipment developments / modifications, site surveys and operational evaluations from FY2006. Continue development of the following: demonstrate detection technologies for discrimination and confirmation to include leveraging technology with the tactical countermine area; detection technologies to improve detection capability and reduce false alarms; to conduct site survey(s), country assessment(s) and operational field evaluations of detection, mine/vegetation clearance and neutralization systems in mine infested regions of the world; demonstrate individual deminer tools and equipment; and equipment suitable for area reduction and quality assurance operations.
In support of the combatant commands and Embassy staffs, conduct site survey(s), country assessment(s), and initiate operational field evaluations of prototypes developed under the program in the areas of detection, mine/vegetation clearance, neutralization and personal deminer protection systems in mine-infested regions of the world. Conduct the OASD(SO/LIC) International Program Review. Update and distribute the HD R&D Program Video.

C. Other Program Funding Summary: NA

D. Acquisition Strategy. 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 US 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 maximum 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 NVESD.

Exhibit R-3 Cost Analysis												Date: February 2005
APPROPRIATION/BUDGET ACTIVITY RDT&E / BA 4 ($ in millions)			PROGRAM ELEMENT 0603920D8Z									PROJECT NAME AND NUMBER Humanitarian Demining / P920
Cost Categories ($ in millions) (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	CY Cost	CY Award Date	BY1 Cost	BY1 Award Date	BY2 Cost	BY2 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development	Various[1]	Various[2]	89.014	7.618	NA[3]	8.117	NA[3]	8.222	NA[3]	33.643	146.614	NA[4]
Ancillary Hardware Development												
Systems Engineering												
Licenses												
Tooling												
GFE												
Award Fees												
Subtotal Product Development			89.014	7.618		8.117		8.222		33.643	146.614	

Remarks:
1: The Humanitarian Demining R&D Program manages many individual contracts for the development of mine and minefield detection, mine and vegetation clearance, individual deminer tools and personal protection equipment, and mine neutralization technologies optimized for humanitarian demining. As such, one entry cannot be made for any category in this document. Competitive contracting is used to the maximum extent possible. Due to the nature of this program, which acquires very limited quantities (normally 1 or 2 each) of hand built or modified prototype items, most contract types are cost based.
2. Since so many performing organizations, both U.S. and foreign, are involved, one entry cannot be made for any cost category in this document (but can be provided upon request).
3. The HD Program goal is to award all individual efforts to ensure DoD performance goals are met or exceeded.

4. Because individual contracts / task efforts seldom exceed a 12 month period of performance resulting in delivery of one or two prototypes, the total value of each individual contract is usually the same as the award amount for all cost categories in this document.

Development Support												
Software Development	Various[1]	Various[2]	3.495	.416	NA[3]	.443	NA[3]	.449	NA[3]	1.836	6.639	NA[4]
Training Development												
Integrated Logistics Support												
Configuration Management												
Technical Data												
GFE												
Subtotal Support			3.495	.416		.443		.449		1.836	6.639	
Remarks: See remarks for notes 1, 2, 3 and 4 in the Product Development Section.												

Exhibit R-3 Cost Analysis (page 2)												Date: February 2005
APPROPRIATION/BUDGET ACTIVITY RDT&E / BA 4			PROGRAM ELEMENT 0603920D8Z						PROJECT NAME AND NUMBER Humanitarian Demining / P920			
Cost Categories ($ in millions) (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	CY Cost	CY Award Date	BY1 Cost	BY1 Award Date	BY2 Cost	BY2 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation												
Operational Test & Evaluation	NA	RDECOM NVESD Fort Belvoir, VA	3.505	.906	NA[3]	.966	NA[3]	.978	NA[3]	4.003	10.358	NA[5]
Tooling												
GFE												
Subtotal T&E			3.505	.906		.966		.978		4.003	10.358	

Remarks:
3. See remarks for note 3 in the Product Development Section.
5. For the HD R&D Program, Operational Test and Evaluation is the limited operational field evaluations of prototype equipment. These evaluations are performed by a governmental mine action organization, or a supporting non-governmental demining organization in the host nation under actual conditions. Funds for this category support the preparation and shipment of the equipment, and logistics support packages (training, manuals, spare parts, etc.) to support the field evaluation. Although foreign governments are responsible for performing their own evaluation, the performing organization for the purpose of this document is CECOM NVESD.

Contractor Engineering Support	Various[1]	Various[2]	6.019	.768	NA[3]	.818	NA[3]	.829	NA[3]	3.392	11.826	NA[4]
Government Engineering Support	NA	RDECOM NVESD Fort Belvoir, VA	5.763	.980	NA[3]	1.044	NA[3]	1.058	NA[3]	4.329	13.174	NA
Program Management Support	Various[1]	Various[2]	8.521	1.055	NA[3]	1.124	NA[3]	1.139	NA[3]	4.659	16.498	NA[4]
Program Management Personnel	NA	RDECOM NVESD Fort Belvoir, VA	.920	.146	NA[3]	.156	NA[3]	.158	NA[3]	.647	2.027	NA
Travel	NA	NA	1.930	.307	NA[3]	.327	NA[3]	.332	NA[3]	1.357	4.253	NA
Labor (Research Personnel)	NA	RDECOM NVESD Fort Belvoir, VA	9.778	1.230	NA[3]	1.310	NA[3]	1.324	NA[3]	5.423	19.065	NA
Overhead												
Subtotal Management			32.931	4.486		4.779		4.840		19.807	66.843	
Remarks: See remarks for notes 1, 2, 3 and 4 in the Product Development Section.												
Total Cost			128.945	13.426		14.305		14.489		59.289	230.454	
Remarks												