Exhibit R-2, RDT&E Budget Item Justification							February 2006
Appropriation/Budget Activity RDT&E BA 4				R-1 Item Nomenclature: Humanitarian Demining 0603920D8Z			
Cost ($ in millions)	FY 2005	FY 2006	FY2007	FY 2008	FY 2009	FY 2010	FY2011
Total PE Cost	13.154	14.078	14.489	14.480	14.790	15.228	15.312
Humanitarian Demining/P920	13.154	14.078	14.489	14.480	14.790	15.228	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 DoDsupported, 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's Night Vision Electronic Sensors 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; 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:

	FY2005	FY2006	FY2007
Previous President's Budget	13.426	14.305	14.489
Current President's Budget	13.154	14.078	14.489
Total Adjustments	-.272	-.227	
Congressional program reductions			
Congressional rescissions			
Congressional increases			
Reprogrammings			
SBIR/STTR Transfer	-.255		
Other program adjustments	-.017	-.227	

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 both US 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 2005 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 2005 Rating	ON TARGET
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 • Complete scheduled R&D project tasks • Conduct annual Humanitarian R&D Program International Program Review
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 R&D Program International Program Review • Transition scheduled projects to user communities
Basis of FY 2005 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 2006
Appropriation/Budget Activity RDT&E BA 4				Project Name and Number Humanitarian Demining 0603920D8Z			
Cost ($ in millions)	FY 2005	FY 2006	FY 2007	FY2008	FY 2009	FY 2010	FY 2011
Humanitarian Demining/P920	13.154	14.078	14.489	14.480	14.790	15.228	15.312

A. Mission Description and Budget Item Justification: The Humanitarian Demining (HD) R&D Program demonstrates and evaluates prototype demining systems for US forces and for indigenous DoD-supported, host nation conducted demining operations. The HD 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 the 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 Sensors 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; 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 2005	FY 2006	FY 2007
Accomplishment/Effort/Subtotal Cost	13.154	14.078	14.489

FY2005 Accomplishments: In FY2005, the HD R&D Program completed, initiated or continued Operational Field Evaluations of 18 HD systems in 8 countries that included the Tempest in Thailand and Cambodia, the HSTAMIDS in Thailand and Namibia (with ITEP participation), the Rhino Earth Tiller in Azerbaijan, the Mantis in Nicaragua, the Survivable Demining Tractor and Uni-Disk in Thailand, Explosive Harvesting System in Cambodia, and the Maxx Plus in Sri Lanka. In addition, the program performed field assessments in countries including Angola, Azerbaijan, Cambodia, Guinea Bissau, Namibia, Nicaragua, Sri Lanka, and Thailand to determine if HD equipment could be effectively utilized in those countries. In support of US forces in Afghanistan, HD R&D Program engineers modified an additional PM-CCS front loader to supplement the original two loaders completed in FY2004. To date, 7 systems are in use by US forces in Afghanistan. To further assist humanitarian deminers worldwide, engineers completed several in-house prototype developments such as the Beaver mine clearing system, the Standardized Remote Control, Rotary Mine Comb integration into tractor/dozer platforms, and Rhino grill. The HD R&D program awarded 18 new contracts for mine detection,

neutralization, mechanical clearance technologies in FY2005. Furthermore, the program tested and demonstrated 17 mine detection and clearance system at various sites including Fort AP Hill, Yuma Proving Grounds, and Aberdeen Proving Grounds. Lastly, the HD R&D Program conducted its annual Requirements Workshop in which participants from 13 government mine action organizations, 11 non-governmental organizations (NGOs), 6 international agencies, and 9 US government entities discussed demining equipment needs. Countries represented included Azerbaijan, Cambodia, Chile, Croatia, Guinea-Bissau, Iraq, Jordan, Lebanon, Republic of Yemen, Rwanda, Sri Lanka, Thailand, and Vietnam. Representatives from the Department of State, the Joint Staff, and the Combatant Commands (EUCOM, SOUTHCOM, and CENTCOM) also participated. Several international organizations active in mine action also attended, including representatives from the United Nations Mine Action Service (UNMAS), the Inter-American Defense Board (IADB), and the Organization of American States (OAS).

FY 2006 Plans: As a result of requests made during the annual Requirements Workshop, OCONUS field assessments, and in-house developments in FY2005, the HD R&D program plans to deploy many of its systems to humanitarian demining organizations overseas as well as US forces in Afghanistan. Planned deployments include the NIITEK Mine Stalker to Angola and Namibia, the HSTAMIDS to Afghanistan and Cambodia, the Maxx to Guinea Bissau, the Beaver to Thailand, and the Rotary Mine Comb to Angola. In addition, the HD R&D Program will continue its deployments of the Tempest, Uni-Disk, Mantis, Survivable Demining Tractor, the Explosive Harvesting System, and the Rhino Earth Tiller in various countries in Africa and Southeast Asia. Program engineers will also make field assessments to Ecuador, Chile, and Uzbekistan. The HD R&D program will continue final development, 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, HD R&D personnel will 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. Lastly, the HD R&D program will update its website and HD R&D Program Video for distribution during the 2006 Requirements Workshop.

FY 2007 Plans: The HD R&D program will complete ongoing equipment developments/modifications, site surveys and operational evaluations from FY2006. It will also continue to demonstrate detection technologies for discrimination and confirmation to include leveraging technology with the tactical countermine area; develop technologies to improve detection capability and reduce false alarms; 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; and 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, the HD R&D program will 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. In addition, the program will conduct the OASD (SO/LIC) International Program Review as well as update and distribute the HD R&D Program Video for the 2007 Requirements Workshop.

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 US and foreign R&D activities, and by taking advantage of extensive in-house fabrication capabilities at the Army's NVESD.

									Date: February 2006			
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
Primary Hardware Development	Various[1]	Various[2]	97.748	8.146	NA[3]	8.384	NA[3]	8.378	NA[3]	26.229	148.885	NA[4]
Ancillary Hardware Development												
Systems Engineering												
Licenses												
Tooling												
GFE												
Award Fees												

Subtotal Product Development			97.748	8.146		8.384		8.378		26.229	148.885	

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]	4.170	.798	NA[3]	.822	NA[3]	.821	NA[3]	2.571	9.128	NA[4]
Training Development												
Integrated Logistics Support												
Configuration Management												
Technical Data												
GFE												
Subtotal Support			4.170	.798		.822		.821		2.571	9.128	
Remarks: See remarks for notes 1, 2, 3 and 4 in the Product Development Section.												

Exhibit R-3 Cost Analysis (page 2)									Date: February 2006			
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	4.176	.794	NA[3]	.817	NA[3]	.817	NA[3]	2.557	9.160	NA[5]
Tooling												
GFE												
Subtotal T&E			4.176	.794		.817		.817		2.557	9.160	

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]	6.659	.757	NA[3]	.780	NA[3]	.780	NA[3]	2.440	11.415	NA[4]
Government Engineering Support	NA	RDECOM NVESD Fort Belvoir, VA	6.593	.983	NA[3]	1.012	NA[3]	1.011	NA[3]	3.164	12.762	NA
Program Management Support	Various[1]	Various[2]	9.283	.898	NA[3]	.924	NA[3]	.925	NA[3]	2.892	14.923	NA[4]
Program Management Personnel	NA	RDECOM NVESD Fort Belvoir, VA	1.045	.148	NA[3]	.152	NA[3]	.152	NA[3]	.476	1.973	NA
Travel	NA	NA	2.189	.308	NA[3]	.316	NA[3]	.316	NA[3]	.990	4.118	NA
Labor (Research Personnel)	NA	RDECOM NVESD Fort Belvoir, VA	10.830	1.246	NA[3]	1.283	NA[3]	1.282	NA[3]	4.012	18.652	NA
Overhead												
Subtotal Management			36.599	4.340		4.465		4.464		13.974	63.843	
Remarks: See remarks for notes 1, 2, 3 and 4 in the Product Development Section.												
Total Cost			142.693	14.078		14.489		14.480		45.330	231.070	
Remarks												