

OSD RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

Date: February 2007

APPROPRIATION/ BUDGET ACTIVITY
RDT&E/ Defense Wide BA# 4PE NUMBER AND TITLE
0603920D8Z - Humanitarian Demining

Cost (\$ in Millions)	FY 2006 Actual	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Total Program Element (PE) Cost	13.807	14.406	14.013	14.396	14.918	14.908	15.141	15.373
P920 SO/LIC Humanitarian De-mining P920	13.807	14.406	14.013	14.396	14.918	14.908	15.141	15.373

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 2006	FY 2007	FY 2008	FY 2009
Previous President's Budget (FY 2007)	14.305	14.489	14.480	14.790
Current BES/President's Budget (FY 2008/2009)	13.807	14.406	14.013	14.396
Total Adjustments	-0.498	-0.083	-0.467	-0.394
Congressional Program Reductions				
Congressional Rescissions				
Congressional Increases				
Reprogrammings	-0.498	-0.083	-0.467	-0.394
SBIR/STTR Transfer				
Other				

C. Other Program Funding Summary: Not Applicable.

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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.

E. Performance Metrics:

FY	Strategic Goals Supported	Existing Baseline	Planned Performance Improvement / Requirement Goal	Actual Performance Improvement	Planned Performance Metric / Methods of Measurement	Actual Performance Metric / Methods of Measurement
06						
07						
08						

Comment: 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 2006 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 2006 Rating: ON Target

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

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- Complete scheduled R&D project tasks
- Conduct annual Humanitarian R&D Program International Program Review

FY 2008 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 2009 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 2006 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.

OSD RDT&E PROJECT JUSTIFICATION (R2a Exhibit)

Date: February 2007

APPROPRIATION/ BUDGET ACTIVITY RDT&E/ Defense Wide BA# 4		PE NUMBER AND TITLE 0603920D8Z - Humanitarian Demining					PROJECT P920		
Cost (\$ in Millions)	FY 2006 Actual	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	
P920 SO/LIC Humanitarian De-mining P920	13.807	14.406	14.013	14.396	14.918	14.908	15.141	15.373	

A. Mission Description and Project 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 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:

Accomplishment/Planned Program Title	FY 2006	FY 2007	FY 2008	FY 2009
2006 Accomplishments	13.807	0.000	0.000	0.000

In FY2006, the HD R&D Program actively engaged in the Operational Field Evaluations of 18 HD technologies in 9 countries. Of those technologies, the program completed 2 Operational Field Evaluations of the Maxx + in Sri Lanka and the HSTAMIDS in Namibia, initiated 9 new Operational Field Evaluations of the NIITEK Mine Stalker to Angola and Namibia, the Rotary Mine Comb to Angola, the HSTAMIDS in Thailand, Cambodia and Afghanistan, the Beaver to Thailand, Maxx in Guinea Bissau, Sifting technologies to Cambodia and continued 7 Operational Field Evaluations of the Tempest in Thailand and Cambodia, the Rhino Earth Tiller in Azerbaijan, the Mantis in Nicaragua, the Survivable Demining Tractor and Uni-Disk in Thailand, and the Explosive Harvesting System in Cambodia. In addition, the program performed field assessments in countries including Angola, Lao PDR, Ecuador, Chile, Cambodia, 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 4 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 the PECO vegetation cutting system. The HD R&D program awarded 10 new contracts for mine detection, neutralization, mechanical clearance technologies in FY2006. Furthermore, the program tested and demonstrated 13 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 52 participants from 8 government mine action organizations, 11 non-governmental organizations (NGOs), 3 international agencies, and 7 US government entities discussed demining equipment needs. Countries represented included Cambodia, Chile, Nicaragua, Guinea-Bissau, Republic of Yemen, Rwanda, Sri Lanka, Thailand, Vietnam, Laos, Angola, and Chad. Representatives from the Department of State, the Joint Staff and the Combatant Commands (EUCOM and CENTCOM) also attended. Several international organizations active in mine action also participated, including representatives from the United Nations Mine Action Service (UNMAS), the Inter-American Defense Board (IADB), and the Organization of American States (OAS).

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P920**Accomplishment/Planned Program Title**

FY 2006

FY 2007

FY 2008

FY 2009

FY 2007 Plans

0.000

14.406

0.000

0.000

As a result of requests made during the annual Requirements Workshop, OCONUS field assessments, and in-house developments in FY2006, 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 Somaliland, additional HSTAMIDS to Cambodia and Somaliland, the Uni-Disk and Raptor to Laos, the Sifting Excavator to Chile, the Improved Backhoe to Yemen and the Tempest to Ecuador. In addition, the HD R&D Program will continue its deployments of the Tempest, Mantis, Maxx, Maxx +, Survivable Demining Tractor, the Explosive Harvesting System, and the Rhino Earth Tiller in various countries in Africa, South America and Southeast Asia. Program engineers will also make field assessments to Tunisia, Senegal, and Vietnam. 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 2007 Requirements Workshop.

Accomplishment/Planned Program Title

FY 2006

FY 2007

FY 2008

FY 2009

FY 2008 Plans

0.000

0.000

14.013

0.000

The HD R&D program will complete ongoing equipment developments/modifications, site surveys and operational evaluations from FY2007. 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 2008 Requirements Workshop.

Accomplishment/Planned Program Title

FY 2006

FY 2007

FY 2008

FY 2009

FY 2009 Plans

0.000

0.000

0.000

14.396

The HD R&D Program will complete ongoing equipment developments/modifications, site surveys and operational evaluations from FY2008. 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 2009 Requirements Workshop.

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P920**C. Other Program Funding Summary:** Not Applicable.

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.

E. Major Performers Not Applicable.

OSD RDT&E COST ANALYSIS (R3)

Date: February 2007

APPROPRIATION/ BUDGET ACTIVITY RDT&E/ Defense Wide BA# 4			PE NUMBER AND TITLE 0603920D8Z - Humanitarian Demining								PROJECT P920	
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development	Note 1	Note 1	104408	8133		7911		8126		34060	162638	0
Ancillary Hardware Development			0	0		0		0		0	0	0
Systems Engineering			0	0		0		0		0	0	0
Licenses			0	0		0		0		0	0	0
Tooling			0	0		0		0		0	0	0
GFE			0	0		0		0		0	0	0
Award Fees			0	0		0		0		0	0	0
Subtotal:			104408	8133		7911		8126		34060	162638	0

Remarks: 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

II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Software Development	Note 1	Note 2	5219	1021		994		1021		4279	12534	0
Training Development			0	0		0		0		0	0	0
Integrated Logistics Support			0	0		0		0		0	0	0
Configuration Management			0	0		0		0		0	0	0
Technical Data			0	0		0		0		0	0	0
GFE			0	0		0		0		0	0	0

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Subtotal:	5219	1021		994		1021		4279	12534	0

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.

III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Development Test & Evaluation			0	0		0		0		0	0	0
Operational Test & Evaluation	N/A	RDECOMNVESD Fort Belvoir, VA	5032	818		796		818		3427	10891	0
Tooling			0	0		0		0		0	0	0
GFE			0	0		0		0		0	0	0
Subtotal:			5032	818		796		818		3427	10891	0

Remarks: Remarks:
 See remarks for notes 1, 2, 3 and 4 in the Product Development Section.

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Contractor Engineering Support	Note 1	Note 2	7469	774		752		773		3241	13009	0
Government Engineering Support	N/A	RDECOMNVESD Ft Belvoir, VA	7588	945		919		944		3958	14354	0
Program Management Support	Note 1	Note 2	10063	730		710		730		3059	15292	0
Program Management Personnel	N/A	RDECOMNVESD Ft Belvoir, VA	1209	157		153		157		659	2335	0
Travel	N/A	N/A	2500	295		287		295		1237	4614	0
Labor (Research Personnel)	N/A	RDECOMNVESD Ft Belvoir, VA	12409	1533		1490		1532		6420	23384	0

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Overhead		0	0		0		0		0	0
Subtotal:		41238	4434		4311		4431		18574	72988
Project Total Cost:		155897	14406		14012		14396		60340	259051