

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY
4 - DEM/VAL

PE NUMBER AND TITLE
0603779A - Environmental Quality Technology Dem/Val

COST (In Thousands)	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to	Total Cost
	Actual	Estimate	Complete							
Total Program Element (PE) Cost	4764	13275	7536	0	0	0	0	0	0	0
035 NATIONAL DEFENSE CNTR FOR ENVIRO EXCELLENCE-NDCEE	4764	4852	4905	0	0	0	0	0	0	0
04E ENVIRONMENTAL RESTORATION TECH VALIDATION	0	0	2631	0	0	0	0	0	0	0
04F COMMERCIALIZATION OF TECH TO LOWER DEFENSE COSTS	0	8423	0	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification:

PLEASE NOTE: This administration has not addressed FY2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.

There is a broad application potential for environmental quality technology (EQT) to apply to multiple Army weapon systems' applications. Technology must be validated (life-cycle cost and performance data) before potential users will consider exploiting it. This program will include efforts associated with validating the general military utility or cost reduction potential of technology when applied to different types of military equipment or techniques. It may include evaluations and proof-of-principle demonstrations in field exercises to evaluate upgrades or provide new operational capabilities. The evaluations of technologies will be in as realistic an operating environment as possible to assess their performance or cost reduction potential. EQT demonstration/validation is systemic; i.e., applies to a class of systems (e.g., tanks or aircraft) or to a Department of Army-wide, multiple site/installation problem (e.g., unexploded ordnance detection and classification). This program will address, and eventually resource, programs in each of the environmental quality technology pillars (restoration, conservation, compliance, and pollution prevention). Work must be endorsed by potential users and supported by a state-of-the-art assessment (i.e., technology is well-in-hand). Documented evidence must be available to support proposed EQT demonstration/validation projects to validate technology that could satisfy high-priority Army environmental quality RDT&E requirements. This program also includes a Congressionally added project to address Commercialization of Technology to Lower Defense Costs. This work is a transition of an effort added by Congress in FY 2000 to RDT&E Program Element 0602720A, Environmental Quality Technology.

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<u>B. Program Change Summary</u>	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	0	4897	4883	0
Appropriated Value	0	13397	0	
Adjustments to Appropriated Value	0	0	0	
a. Congressional General Reduction	0	0	0	
b. SBIR/STTR	0	0	0	
C. Omnibus or Other Above Threshold Reprogramming	4764	0	0	
d. Below Threshold Reprogramming	0	0	0	
e. Rescissions	0	-122	0	
Adjustments to Budget Years Since FY2001 PB	0	0	2653	
Current Budget Submit (FY 2002/2003 PB)	4764	13275	7536	0

Change Summary Explanation: Funding - FY 2000: Funds reprogrammed to this program element per OSD guidance to support the NDCEE mission. FY 2001: Congressional increase to support Commercialization of Technology to Reduce Defense Costs (+8500). FY 2002/2003: Funding increase to support Unexploded Ordnance (UXO) Identification/Discrimination Demonstration/Validation.

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PROJECT
035

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
035 NATIONAL DEFENSE CNTR FOR ENVIRO EXCELLENCE-NDCEE	4764	4852	4905	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification: This program is managed by the Army on behalf of the Office of the Deputy Under Secretary of Defense for Environmental Security (DUSD-ES). NDCEE is used to demonstrate and export environmentally-acceptable technology to industry; validate new technology prior to exporting that technology to industry; and assist in technology transfer. The NDCEE is a DoD resource for environmental quality management and technology validation. Related programs supported by the NDCEE include the Joint Group on Pollution Prevention (JG-PP) and the DoD fuel cell program.

FY 2000 Accomplishments

- 2831 - Oversee and validate environmentally acceptable technologies for potential exploitation at DoD facilities/installations.
- Support pollution prevention efforts in acquisition (JG-PP).
 - 1933 - Validate technologies that improve DoD's industrial pollution prevention and compliance technical capability for coatings, platings, and sealants and for heavy metals reduction/elimination from surface protection processes.
- Total 4764

FY 2001 Planned Program

- 2866 - Oversee and validate environmentally acceptable technologies for potential exploitation at DoD facilities/installations.
- Support pollution prevention efforts in acquisition (JG-PP).
 - 1842 - Validate technologies that improve DoD's industrial pollution prevention and compliance technical capability for coatings, platings, and sealants and for heavy metals reduction/elimination from surface protection processes.
- Increase capabilities in technical data and modeling using existing capabilities in visualization and 3-D modeling.
 - 144 - Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs.
- Total 4852

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FY 2002 Planned Program

- 2922 - Oversee and validate environmentally acceptable technologies for potential exploitation at DoD facilities/installations.
- Support pollution prevention efforts in acquisition (JG-PP).
- 1983 - Validate technologies that improve DoD's industrial pollution prevention and compliance technical capability for coatings, platings, and sealants and for heavy metals reduction/elimination from surface protection processes.

Total 4905

B. Other Program Funding Summary: Not applicable for this item.

C. Acquisition Strategy: Not applicable for this item.

D. Schedule Profile: Not applicable for this item.

ARMY RDT&E COST ANALYSIS(R-3)

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PROJECT
035

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Technical Data	CPPF	Concurrent Technologies Corporation, Johnstown, PA	1155	1162	2Q	1190	1Q	0	0	0	0	Continue
Subtotal:			1155	1162		1190		0		0	0	Continue

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035**

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Development Testing	CPIF	Concurrent Technologies Corporation, Johnstown, PA	1109	1190	2Q	1215	2Q	0	0	0	0	Continue
Subtotal:			1109	1190		1215		0		0	0	Continue
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program Management Support	ALLOT	OASA(I&E)	2500	2500		2500		0	0	0	0	Continue
Subtotal:			2500	2500		2500		0		0	0	Continue
Project Total Cost:			4764	4852		4905		0		0	0	Continue

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BUDGET ACTIVITY 4 - DEM/VAL			PE NUMBER AND TITLE 0603779A - Environmental Quality Technology Dem/Val						PROJECT 04E	
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
04E ENVIRONMENTAL RESTORATION TECH VALIDATION	0	0	2631	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification: Unexploded Ordnance (UXO) Identification and Discrimination. The Army reported in the 1996 UXO Report to Congress that 72 installations have identified 531,167 acres of land known to be contaminated with UXO and 940,438 acres of suspected contamination. In addition, formerly used defense sites, many of which may no longer be under military ownership, may also have buried UXO. Current technologies are very expensive and often cannot accurately discriminate between UXO and exploded ordnance/scrap metal masses in historical and active ranges, impact areas, landfills, underground storage locations, and open burning and open detonation sites. Technologies must be developed that are non-intrusive, accurately identify UXO from scrap and shrapnel, and identify the orientation, configuration, and type of UXO. The development of identification/discrimination technologies is critical to increasing the safety to remove UXO, design appropriate removal operations, and decrease removal costs. The purpose is to demonstrate and validate a UXO detection, discrimination, and identification system that minimizes residual risk and significantly reduces remediation costs. The activities funded under this project implement the 1996 UXO Report to Congress and the 1998 Defense Science Board requirements to improve UXO discrimination capabilities by reducing false alarm rates tenfold while achieving greater than 90% probability of detection of a wide range of UXO in a variety of environmental and geologic conditions. The system will consist of arrays of sensors specifically designed to provide reliable signatures of buried UXO and advanced sensor fusion/signal analysis technologies that will allow robust discrimination and identification of buried UXO in the presence of man-made and natural clutter. This demonstration/validation program will be performed in stages, with prototype systems that incorporate the more mature technologies [magnetometry and multi-channel electro-magnetic induction (EMI)] being evaluated during the first year. Starting with FY 2003, ground penetrating radar (GPR) and chemical and seismic/acoustic sensors will be integrated into the system as they mature.

FY 2000 Accomplishments

- Program not funded in FY 2000.

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PROJECT

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FY 2001 Planned Program

- Program not funded in FY 2001.

FY 2002 Planned Program

- 1523 - Begin validation of prototype system that integrates advanced magnetometry and EMI sensors with fusion/analysis algorithms to improve buried UXO detection, discrimination, and identification at well-characterized controlled sites.
- 1108 - Begin live site demonstration and validation of prototype UXO multisensor and analysis system.

Total 2631

B. Other Program Funding Summary: Not applicable for this item.

C. Acquisition Strategy: Not applicable for this item.

D. Schedule Profile: Not applicable for this item.

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04E

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . This effort will begin in FY02. Contracts and types will be determined during FY01.	TBD	TBD	0	0		500		0	0	0	0	0
b . In-House Development - Integration of sensors, hardware/software, and navigation system into prototy	In-house	Engineer Research and Development Center (ERDC), Vicksburg, MS	0	0		750	1Q	0	0	0	0	0
Subtotal:			0	0		1250		0		0	0	0
II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . This effort will begin in FY02. Contracts and types will be determined during FY01.	BAA and MIPR	TBD	0	0		250		0	0	0	0	0
b . In-House Development - Preparation of test Sites	In-House	ERDC, Vicksburg, MS	0	0		370	1Q	0	0	0	0	0

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04E**

II. Support Cost (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		620		0		0	0	0

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . This effort will begin in FY02. Contracts and types will be determined during FY01. - Dem/Val Spt	BAA and MIPR	TBD	0	0		300		0	0	0	0	0
b . In-House Development - Planning and Execution	In-House	ERDC, Vicksburg, MS	0	0		211	1Q	0	0	0	0	0
Subtotal:			0	0		511		0		0	0	0

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IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . This effort will begin in FY02. Management shared by Army Environmental Center (AEC) and ERDC.	MIPR	AEC	0	0		150		0	0	0	0	0
b . In-House Management (ERDC)	In-House	ERDC, Vicksburg, MS	0	0		100		0	0	0	0	0
Subtotal:			0	0		250		0		0	0	0
Project Total Cost:			0	0		2631		0		0	0	0