

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

February 2002

**BUDGET ACTIVITY**  
**5 - Engineering and manufacturing development**

**PE NUMBER AND TITLE**  
**0604808A - Landmine Warfare/Barrier - Eng Dev**

COST (In Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	84867	68550	128992	108109	117005	146437	142125	Continuing	Continuing
016 MINE SYSTEMS ED	0	4491	22472	31837	37359	37494	30823	Continuing	Continuing
415 MINE NEUTRAL/DETECTION	25900	36844	46220	34272	11446	8943	9502	Continuing	Continuing
434 ANTI-PERSONNEL LANDMINE ALTERNATIVES (NSD)	36088	1008	28300	10000	0	0	0	0	75396
443 APL-A (MIXED SYSTEMS)	22879	26207	32000	32000	68200	100000	101800	0	383086

**A. Mission Description and Budget Item Justification:** This program element provides for System Development and Demonstration of mine and counter mine systems. Mine Systems Engineering Development, provides for the increased tactical effectiveness and responsiveness of landmines, supporting the development of the Intelligent Combat Outpost (Raptor), and upgrades for the Volcano Dispenser. Mine Neutralization/Detection Engineering Development, is the engineering and manufacturing development for the Airborne Standoff Minefield Detection System (ASTAMIDS), Ground Standoff Mine Detection System (GSTAMIDS), Handheld Standoff Mine Detection System (HSTAMIDS), and Explosive Standoff Minefield Clearer (ESMC). Program also provides for a variety of demolition efforts to include development of Flexible Linear Shaped Charge, Remote Shock Tube Initiator, Magnetic Inductive Urban OPS Structure Remote Initiator, Insensitive Initiator, and Advanced Cratering.

These systems support the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

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<u><b>B. Program Change Summary</b></u>	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2002 PB)	93717	89153	114243
Appropriated Value	94584	69153	0
Adjustments to Appropriated Value	0	0	0
a. Congressional General Reductions	0	-603	0
b. SBIR / STTR	-2787	0	0
c. Omnibus or Other Above Threshold Reductions	-6400	0	0
d. Below Threshold Reprogramming	338	0	0
e. Rescissions	-868	0	0
Adjustments to Budget Years Since FY2002 PB	0	0	14749
Current Budget Submit (FY 2003 PB )	84867	68550	128992

**Funding:**

FY01: \$6.4M reprogrammed from project 415 to support other Army requirements.

FY02: \$20M congressional decrease from project 434(NSD-A).

FY03: \$14.7M Net adjustment provided by Army support of the program.

Schedule: Raptor MS B changed from 3Q03 to 3Q05 based on program restructure, funding cut and delays.

NSD-A MS C changed from 1Q04 to 2Q05 based on funding cuts and delays attributed to landmine policy review.

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BUDGET ACTIVITY <b>5 - Engineering and manufacturing development</b>				PE NUMBER AND TITLE <b>0604808A - Landmine Warfare/Barrier - Eng Dev</b>				PROJECT <b>016</b>	
COST (In Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
016 MINE SYSTEMS ED	0	4491	22472	31837	37359	37494	30823	Continuing	Continuing

**A. Mission Description and Budget Item Justification:** This project provides for Systems Development and Demonstration of new smart munitions and intelligent/autonomous coordination of their use for increased effectiveness. Includes Intelligent Combat Outpost (Raptor), the upgrade to the Volcano Dispenser Control Unit and the Volcano modularization in support of the Interim Brigade Combat Team (IBCT). Also provides for a variety of Demolition devices to include: Flexible Linear Shaped Charge, Remote Shock Tube Initiator, Magnetic Inductive Urban OPS Structure Remote Initiator, Insensitive Initiator, and Advanced Cratering. These Systems support the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

**FY 2001 Accomplishments:**

Project not funded in FY 2001.

**FY 2002 Planned Program**

- 4091 Initiate design effort for Volcano upgrades.
- 400 Establish testing plans and criteria for Volcano upgrade efforts. Initiate Volcano Light System development and demonstration.  
Initiate Volcano upgrade test program.  
Initiate development of flexible linear shaped charge.  
Initiate development of remote shock tube initiator.

Total 4491

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PROJECT

**016**

## FY 2003 Planned Program

- 5200 Continue design efforts on the Volcano upgrade program.
- 907 Initiate System Development and Demonstration.
- 1300 Initiate Volcano upgrade test program.
- 2553 Initiate Development of Flexible linear Shaped Charge.
- 2853 Initiate Development of Remote Shock Tube Initiator.
- 3000 Initiate development of Magnetic Urban OPS Structure Remote Initiator.
- 2659 Initiate development of Insensitive Initiator.
- 4000 Initiate development of Advanced Cratering System.

Total 22472

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PROJECT  
**016**

<b><u>B. Other Program Funding Summary</u></b>	<b><u>FY 2001</u></b>	<b><u>FY 2002</u></b>	<b><u>FY 2003</u></b>	<b><u>FY 2004</u></b>	<b><u>FY 2005</u></b>	<b><u>FY 2006</u></b>	<b><u>FY 2007</u></b>	<b><u>To Compl</u></b>	<b><u>Total Cost</u></b>
RDTE, BA4, PE 0603619A, Proj 005	8150	9314	10116	9140	9167	8957	6355	Continuing	Continuing
M12100, Intelligent Combat Outpost	0	0	0	0	0	19975	19955	Continuing	Continuing
M12202, Raptor Training Device	0	0	0	0	0	2398	2395	Continuing	Continuing
G39100, Dispenser, Mine M139	0	2383	1822	5528	3563	0	0	0	13296

**C. Acquisition Strategy:** For Raptor, the decision to go sole source or competitive will be based on evaluation of the Component Advanced Development contractor results. The acquisition strategy for the Volcano Upgrades program is to accomplish an Engineering Change with a competitive solicitation to a performance specification for the System Development and Demonstration effort. All of the Demolition development efforts will be competitive selections with Production options.

<b><u>D. Schedule Profile</u></b>	<b><u>FY 2001</u></b>	<b><u>FY 2002</u></b>	<b><u>FY 2003</u></b>	<b><u>FY 2004</u></b>	<b><u>FY 2005</u></b>	<b><u>FY 2006</u></b>	<b><u>FY 2007</u></b>
RAPTOR MS B					3Q		
RAPTOR IO&T					3Q		
Volcano Modular Upgrade - ECP contract awarded		2Q					
Volcano Modular Upgrade - ECP enters production				1Q			
Demolition programs (5) Milestone B			1Q				
Flex Linear Shaped Charge MS C					3Q		
Remote Shock Tube Initiator MS C				4Q			
Magnetic Inductance Remote Initiator MS C					3Q		
Insensitive Initiators MS C				3Q			
Advanced Cratering MS C						2Q	

## ARMY RDT&E COST ANALYSIS(R-3)

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PROJECT

**5 - Engineering and manufacturing development**

**0604808A - Landmine Warfare/Barrier - Eng Dev**

**016**

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 . RAPTOR- SDD Contract	C-CPIF	TBD	0	0		0		3595	1Q	Continue	Continue	Continue
b . Volcano-SDD Contract	C-CPIF	TBD	0	0		2991	2Q	5007	1Q	Continue	Continue	Continue
c . Demolition Programs SDD Contracts	C-CPIF	TBD	0	0		0		5600	1-4Q	Continue	Continue	Continue
Subtotal:			0	0		2991		14202		Continue	Continue	Continue

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 . Engr. Support RAPTOR	MIPR	ARDEC, Picatinny Arsenal, NJ	0	0		0		1670	1Q	Continue	Continue	Continue
b . Raptor Modeling And Simulation	C-CPIF	TBD	0	0		0		800	1-2Q	0	800	0
c . Raptor Modeling and Simulation	MIPR	ARDEC, Picatinny Arsenal, NJ	0	0		0		800	1-2Q	0	800	0
d . Engr. Support RAPTOR	MIPR	Various	0	0		0		500	1Q	Continue	Continue	Continue

## ARMY RDT&E COST ANALYSIS(R-3)

**February 2002**

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

**5 - Engineering and manufacturing development**

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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
e . Engr. Support Volcano	MIPR	Various	0	0		1250	1Q	850	1Q	Continue	Continue	Continue
f . Engineering Support Demolition Programs	MIPR	Various	0	0		0		1000	1-4Q	Continue	Continue	Continue
Subtotal:			0	0		1250		5620		Continue	Continue	Continue

Remarks: None

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 . Volcano- test upgrades	MIPR	ATEC, Alexandria, VA	0	0		0		1300	1Q	0	1300	0
b . Demolition Programs Test Support	MIPR	ATEC, Alexandria, VA	0	0		0		400	1Q	Continue	Continue	Continue
Subtotal:			0	0		0		1700		Continue	Continue	Continue

Remarks: None

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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 . RAPTOR Program Management	In-House	PM MCD, Picatinny Arsenal, NJ	0	0		0		400	1Q	Continue	Continue	Continue
b . Volcano Program Management	In-House	PM MCD, Picatinny Arsenal, NJ	0	0		250	1Q	250	1Q	Continue	Continue	Continue
c . Demolitions Programs	In-House	PM MCD, Picatinny Arsenal, NJ	0	0		0		300	1Q	0	300	0
Subtotal:			0	0		250		950		Continue	Continue	Continue
Remarks: None												
Project Total Cost:			0	0		4491		22472		Continue	Continue	Continue

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

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BUDGET ACTIVITY <b>5 - Engineering and manufacturing development</b>				PE NUMBER AND TITLE <b>0604808A - Landmine Warfare/Barrier - Eng Dev</b>				PROJECT <b>415</b>	
COST (In Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
415 MINE NEUTRAL/DETECTION	25900	36844	46220	34272	11446	8943	9502	Continuing	Continuing

**A. Mission Description and Budget Item Justification:** This project provides System Development and Demonstration (SDD) for the Airborne Standoff Minefield Detection System (ASTAMIDS), Handheld Stand-off Mine Detection System (HSTAMIDS), Ground Standoff Mine Detection System (GSTAMIDS), and Explosive Standoff Minefield Clearer (ESMC).

These systems support the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

**FY 2001 Accomplishments:**

- 7278 Completed Component Dev. and Fabrication of two GSTAMIDS block 0 prototypes.
- 1787 Initiated GSTAMIDS Block 0 contractor testing
- 4194 Initiated HSTAMIDS SDD Hardware and Software design.
- 1900 Completed Foreign Comparative Testing for Mine Protected Clearance Vehicle.
- 3787 Fabricated HSTAMIDS hardware to conduct design verification test.
- 2116 Conduct solicitation/source selection for CMCS.
- 4838 Award Mongoose (ESMC) System Design and Development Contract.

Total 25900

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**415****FY 2002 Planned Program**

- 585 Prepare for GSTAMIDS Block 0 for Milestone C (Full Rate Production).
- 1000 Complete GSTAMIDS Block 0 Contractor Testing.
- 1000 Complete GSTAMIDS Block 0 System Integration.
- 3146 Conduct GSTAMIDS Block 0 Government Testing.
- 14349 Complete ESMC (Mongoose) BCT preliminary design.
- 4200 Procure long lead materials for ESMC Prototypes.
- 1200 Develop ESMC Manufacturing Processes.
- 8082 Complete HSTAMIDS SDD design.
- 3282 Initiate fabrication of 22 HSTAMIDS prototypes and conduct DT/OT.

Total 36844

**FY 2003 Planned Program**

- 1000 Conduct Source Selection and award GSTAMIDS Block I System Development & Demonstration Contract.
- 4009 Complete GSTAMIDS Block I SD&D preliminary design effort.
- 2850 Initiate GSTAMIDS Block I SD&D detailed design and system integration effort.
- 16081 Finalize ESMCBCT design and validate insensitive munition rocket.
- 9048 Fabricate ESMC prototypes (34 reloads, 5 trailers).
- 2500 Initiate Contractor/Government testing of ESMC.
- 7806 Complete fabrication of 22 HSTAMIDS Prototypes and conduct DT/OT testing.
- 926 Prepare documentation, conduct MS C, and prepare procurement package for HSTAMIDS.
- 2000 Complete GSTAMIDS Block 0 Operational Testing and prepare for FRP MDR.

Total 46220

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<b><u>B. Other Program Funding Summary</u></b>	<b><u>FY 2001</u></b>	<b><u>FY 2002</u></b>	<b><u>FY 2003</u></b>	<b><u>FY 2004</u></b>	<b><u>FY 2005</u></b>	<b><u>FY 2006</u></b>	<b><u>FY 2007</u></b>	<b><u>To Compl</u></b>	<b><u>Total Cost</u></b>
PE 0603619A, Project 606, Countermine/Barrier Advanced Dev	9654	10534	10170	10105	11966	4952	8424	Continuing	Continuing
R68200, HSTAMIDS	0	0	0	1805	6836	7093	7084	Continuing	Continuing
OPA 3, R68101, GSTAMIDS Block 0	0	13180	17425	0	0	0	0	0	30605
OPA 3, R68102, GSTAMIDS Block 1	0	0	0	0	2013	8989	8980	Continuing	Continuing
OPA 3, R68105 ESMC	0	0	0	0	1981	2966	592	Continuing	Continuing
Ammo, E81400 ESMC	0	0	0	0	7000	17000	12400	Continuing	Continuing
OPA 3, S11500 ASTAMIDS	0	0	0	0	0	0	0	Continuing	Continuing

**C. Acquisition Strategy:** ESMC competitively selected Concept & Technology Development (CTD) contractor will be awarded a sole source System Development & Demonstration (SDD) contract upon completion of CTD phase and MDA approval. ASTAMIDS competitively selected System Component Development contractor will be awarded a sole source System Development and Demonstration (SDD) contract upon completion of System Component Development phase and MDA approval. Sole source production contract with multiple options are anticipated for the successful SDD contractor. GSTAMIDS program is a spiral development acquisition program designed to field vehicle mounted mine detection and neutralization capabilities in successive block upgrades (Blocks 0,1, and 2). GSTAMIDS Block I integrates a number of advanced countermine capabilities into one system. The Block I system development contract is expected to be competitively solicited. The GSTAMIDS Block 0, SDD contractor was competitively selected. The SDD contractor will be awarded the initial production contract (sole source) with multiple option year buys. HSTAMIDS, two competing contractors at start of CTD phase. In FY99 one contractor was selected to continue extended CTD phase through SDD. SDD contractor will be awarded production contract with multiple options.

<b><u>D. Schedule Profile</u></b>	<b><u>FY 2001</u></b>	<b><u>FY 2002</u></b>	<b><u>FY 2003</u></b>	<b><u>FY 2004</u></b>	<b><u>FY 2005</u></b>	<b><u>FY 2006</u></b>	<b><u>FY 2007</u></b>
GSTAMIDS Block 0 MS C			2Q				
GSTAMIDS Block 1 MS B			2Q				
GSTAMIDS Block I MS C					4Q		
HSTAMIDS MS B	1Q						
HSTAMIDS MS C			4Q				
ESMC MS B	3Q						
ESMC (BCT) MS C				4Q			

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<b>D. Schedule Profile (continued)</b>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
ESMC (Legacy) MS C						4Q	

## ARMY RDT&E COST ANALYSIS(R-3)

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**415**

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 . GSTAMIDS Block 1	C-CPIF	TBD	0	0		0		5041	1Q	Continue	Continue	Continue
b . GSTAMIDS Block 0	C-CPFF	EG&G Systems Inc., Albuquerque, NM	8296	4921	1Q	1158	1Q	0		0	14375	14375
c . HSTAMIDS	C-CPIF	CY Terra Corporation, Orlando, FL	0	4537	2Q	6200	1Q	5200	1Q	Continue	Continue	Continue
d . ESMC	SS	BAE Systems, Virginia	0	3092	4Q	15327	1Q	19843	1Q	Continue	Continue	Continue
Subtotal:			8296	12550		22685		30084		Continue	Continue	Continue

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 . Eng. support GSTAMIDS Blk 0	MIPR	NVESD/ CECOM, Ft Belvoir, VA	4845	1670	1Q	503	1Q	500	1Q	0	7518	0
b . Eng support GSTAMIDS Blk 0	MIPR	Various OGAs	3541	993	1Q	624	1Q	525	1Q	0	5683	0
c . Eng Support GSTAMIDS Block 0	Various	Various Contractors	4941	1814	1Q	867	1Q	605	1Q	0	8227	0

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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
d . GSTAMIDS Blk I	MIPR	Various OGAs	0	0		0		561	1Q	Continue	Continue	Continue
e . GSTAMIDS Support Blk I	MIPR	NVESD/CECOM, Ft Belvoir, VA	0	0		0		487	1Q	Continue	Continue	Continue
f . Support GSTAMIDS Blk I	Various	Various Contractors	0	0		0		481	1Q	0	481	0
g . Support CMCS	Various	Various	0	955	1Q	0		0		0	955	0
h . Eng Support CMCS	MIPR	NVESD/CECOM, Ft Belvoir, VA	0	834	1Q	0		0		0	834	0
i . Eng Support HSTAMIDS	MIPR	NVESD/CECOM, Ft Belvoir, VA	0	1585	1Q	2090	1Q	1445	1Q	Continue	Continue	Continue
j . Support HSTAMIDS	Various	Various	0	1556	1Q	1216	1Q	1158	1Q	Continue	Continue	Continue
k . ESMC (Mongoose)	MIPR	NVESD/CECOM, Ft Belvoir, VA	0	965	2Q	481	1Q	740	1Q	Continue	Continue	Continue
l . ESMC (Mongoose)	Various	Various	0	597	3Q	2130	1Q	2053	1Q	Continue	Continue	Continue
Subtotal:			13327	10969		7911		8555		Continue	Continue	Continue

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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 . Test support GSTAMIDS	MIPR	ATEC, Alexandria, VA	1313	1349	1Q	1892	1Q	1573	2Q	Continue	Continue	Continue
b . Test support HSTAMIDS	MIPR	ATEC, Alexandria, VA	0	202	2Q	1089	1Q	500	1Q	0	1791	0
c . Test Support ESMC	MIPR	ATEC, Alexandria, VA	0	184	2Q	491	2Q	2500	2Q	Continue	Continue	Continue
Subtotal:			1313	1735		3472		4573		Continue	Continue	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	In-House	PM-MCD, Picatinny Arsenal, NJ	972	325	1-4Q	1425	1-4Q	1555	1-4Q	Continue	Continue	Continue
b . Program management Contractor support	Various	Various	1028	321	1-4Q	1351	1-4Q	1453	1-4Q	Continue	Continue	Continue
Subtotal:			2000	646		2776		3008		Continue	Continue	Continue

Project Total Cost:			24936	25900		36844		46220		Continue	Continue	Continue
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COST (In Thousands)		FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
434 ANTI-PERSONNEL LANDMINE ALTERNATIVES (NSD)		36088	1008	28300	10000	0	0	0	0	75396

**A. Mission Description and Budget Item Justification:** This program provides for development of alternative systems for Non Self-Destruct (NSD) Anti-Personnel Landmines (APLs), particularly in Korea. The overall goal is to pursue an aggressive program to field alternative system(s) by 2006.

This System supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

**FY 2001 Accomplishments:**

- 22973 Initiated design, fabrication, and subsystem verification tests of Remote Control Units(RCU) (14), Repeater (14), munitions (13 Munition Control Units (MCUs)) 15 Extended Range Tripline Sensors (RTS), 50 Inert Mini-Grenade Launchers (MGLs), 6 High Explosive (HE) MGLs, 10 Inert M16s, 6 HE M16s.
- 3908 Initiated general engineering support (including Other Government Agencies (OGAs)) for NSD-A design producibility/manufacturing development of NSD-A subsystems through Preliminary Design Reviews and subsystem verification testing.
- 9207 Initiated communication, reliability and lethality trade studies, risk reduction efforts.

Total 36088

**FY 2002 Planned Program**

- 1008 Continue general engineering support (including OGAs) for Non Self-Destruct-Alternatives (NSD-A) design producibility/manufacturing and integration of NSD-A system through Critical Design Review and Production Qualification Testing.

Total 1008

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**PROJECT**  
**434**

**FY 2003 Planned Program**

- 21200 Provide hardware and software for contractor system verification tests, Functional Qualification Test (FQT), and Production Qualification Test (PQT) (326 MCU's, 676 ERTS, 45 repeaters, 45 RCUs, 1900 inert MGLs, 725 HE MGLs, 404 inert M16s, 144 HE M16s.
- 7100 Provide general engineering support (including OGAs) for Non Self-destruct-Alternatives (NSD-A) design producibility/manufacturing and integration of NSD-A systems through Critical Design Review and Production Qualification Testing.

Total 28300

**B. Other Program Funding Summary**

	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
Ammo E91700	0	0	0	0	41800	41800	41800	0	125400

**C. Acquisition Strategy:** USD(AT&L) approved the NSD-A plan to have Alliant Tech Systems and Textron Systems Corporation to form a joint venture for the System Development & Demonstration (SDD) and Production & Deployment (P&D) efforts of this program.

**D. Schedule Profile**

	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
NSD-A MS-C					2Q		

## ARMY RDT&E COST ANALYSIS(R-3)

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PE NUMBER AND TITLE

PROJECT

**5 - Engineering and manufacturing development**

**0604808A - Landmine Warfare/Barrier - Eng Dev**

**434**

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 . NSD-A SDD	C-CPIF	Alliant Tech Systems, MN, and Textron Systems Corp., MA. (Jointly)	0	29930	4Q	0		20900	1Q	0	50830	50830
b . NSD-A, Contiuing Efforts	TBD	TBD	0	0		0		0		10000	10000	10000
Subtotal:			0	29930		0		20900		10000	60830	60830

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 . Eng support NSD-A	MIPR	ARDEC, Picatinny Arsenal, NJ	0	2000	1Q	1008	1Q	3200	1Q	0	6208	6208
b . Eng support NSD-A	MIPR	Various	0	1908	1Q	0		3900	1Q	0	5808	5808
Subtotal:			0	3908		1008		7100		0	12016	12016

## ARMY RDT&E COST ANALYSIS(R-3)

**February 2002**

**BUDGET ACTIVITY**  
**5 - Engineering and manufacturing development**

**PE NUMBER AND TITLE**  
**0604808A - Landmine Warfare/Barrier - Eng Dev**

**PROJECT**  
**434**

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 . DT/OT	MIPRs	TEXCOM, TX./APG, MD/Ft. Benning, GA	0	2000	4Q	0		0		0	2000	2000
Subtotal:			0	2000		0		0		0	2000	2000

Remarks: Not Applicable

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 Mgmt NSD-A	In-House	PM-MCD, Picatinny Arsenal, NJ	0	250	1-4Q	0		300	1-4Q	0	550	550
Subtotal:			0	250		0		300		0	550	550

Project Total Cost:			0	36088		1008		28300		10000	75396	75396
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# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

February 2002

<b>BUDGET ACTIVITY</b> <b>5 - Engineering and manufacturing development</b>		<b>PE NUMBER AND TITLE</b> <b>0604808A - Landmine Warfare/Barrier - Eng Dev</b>					<b>PROJECT</b> <b>443</b>			
COST (In Thousands)		FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
443	APL-A (MIXED SYSTEMS)	22879	26207	32000	32000	68200	100000	101800	0	383086

**A. Mission Description and Budget Item Justification:** This project provides alternatives to anti-personnel submunitions used in mixed anti-tank (AT) landmine systems and possibly the entire mixed landmine system. The alternative systems will include surveillance systems, command and control systems, and overwatch fires which will be evaluated and developed in parallel to provide similar capabilities that are now provided by Anti-Personnel Landmines (APLs) and APL submunitions in mixed AT/AP systems. Distributed simulation will be used to evaluate new concepts and modify tactics and procedures. Prototype components and system architectures will be constructed and evaluated in system field tests. The overall goal is to pursue an aggressive program to field alternative system(s) by 2006.

These Systems support the Legacy-to-Objective transition path of the Transformation Campaign Plan (TCP).

**FY 2001 Accomplishments:**

- 6460 Completed award of multiple Broad Agency Announcements (BAA) and prototype efforts for system concepts and components to support alternatives studies.
- 2290 Initiated BAA for component technologies to fill technological gaps.
- 2000 Initiated BAA to develop second generation (2006-2020) APL alternative solutions.
- 2500 Conducted distributed modeling of tactics and procedures.
- 2000 Modified new generation of expendable day/night imaging sensors, communications devices, low cost point detectors, and new deterrent devices for force protection and landmine alternative roles.
- 1500 Conducted technology assessment of sensors, communications and armament systems
- 1000 Initiated development of integrated and interactive network mapping system.
- 1537 Initiated development of a friend or foe algorithm for foot soldiers.
- 592 Tested and evaluated advanced technology brassboard for landmine alternatives concept development.
- 3000 Initiated component advanced development for mixed mine alternatives/solutions.

Total 22879

**ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)****February 2002**

BUDGET ACTIVITY

**5 - Engineering and manufacturing development**

PE NUMBER AND TITLE

**0604808A - Landmine Warfare/Barrier - Eng Dev**

PROJECT

**443****FY 2002 Planned Program**

- 8253 Continue component advanced development for mixed system alternatives.
- 2500 Continue BAA for component technology to fill technological gaps.
- 1000 Continue BAA to develop second generation (2006-2020) APL alternative solutions.
- 2500 Conduct distributed modeling of tactics and procedures.
- 2000 Continue with development of day/night imaging sensors, communications devices, low cost point detectors and new deterrent devices for force protection and landmine alternative roles.
- 561 Conduct technology assessment of sensors, communications and armament systems.
- 1290 Continue with development of integrated and interactive network mapping system.
- 2000 Initiate Universal Landmine Controller Development.
- 537 Continue with development of a friend or foe algorithm for foot soldiers.
- 2500 Conduct distributed modeling of tactics and procedures.
- 2000 Continue investigation of mobility of an adaptable network of expendable sensors and new deterrent to meet landmine alternatives requirements and Future Combat Systems (FCS) force protection roles.
- 1066 Test mobility concepts for landmine alternatives.

Total 26207

**FY 2003 Planned Program**

- 8005 Continue prototype development and risk reduction for mixed system alternatives.
- 2000 Continue BAA to develop second generation (2006-2020) APL alternative solutions.
- 1000 Conduct distributed modeling of tactics and procedures.
- 1584 Continue with development of day/night imaging sensors, communications devices, low cost point detectors and new deterrent devices for force protection and landmine alternative roles.
- 1500 Continue Universal Minefield Controller development.

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

February 2002

BUDGET ACTIVITY

**5 - Engineering and manufacturing development**

PE NUMBER AND TITLE

**0604808A - Landmine Warfare/Barrier - Eng Dev**

PROJECT

**443**

## FY 2003 Planned Program (Continued)

- 1290 Continue with development of integrated and interactive network mapping system.
- 1537 Continue with development of a friend or foe algorithm for foot soldiers. Test and evaluate advanced technology brassboards.
- 2000 Continue investigating mobility of an adaptable network of expendable sensors and new deterrent to meet landmine alternatives requirements and FCS force protection roles.
- 1000 Test mobility concepts for landmine alternatives.
- 2500 Continue distributed modeling of tactics and procedures.
- 2000 Initiate prototype system concept for second generation APL solutions.
- 1084 Initiate product improvements to Track 3 landmine alternative concepts and transition Defense Advanced Research Projects Agency (DARPA) Track 2 concepts.
- 6500 Initiate System Development & Demonstration of APL Alternatives.

Total 32000

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

February 2002

BUDGET ACTIVITY  
**5 - Engineering and manufacturing development**

PE NUMBER AND TITLE  
**0604808A - Landmine Warfare/Barrier - Eng Dev**

PROJECT  
**443**

<u>B. Other Program Funding Summary</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>To Compl</u>	<u>Total Cost</u>
PAA SSN: E91701	0	0	0	0	20193	0	0	0	20193

**C. Acquisition Strategy:** Continue concept exploration studies and proof of principle demonstrations for two systems and components (8 contracts). At the completion of the demonstrations, downselect the top contract(s) with the most cost effective and responsive design for prototype development and risk reduction. This will lead to System Development & Demonstration (SDD).

<u>D. Schedule Profile</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
Mixed system MS B				3Q			

## ARMY RDT&E COST ANALYSIS(R-3)

**February 2002**

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

**5 - Engineering and manufacturing development**

**0604808A - Landmine Warfare/Barrier - Eng Dev**

**443**

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 . APL-A System Concept Exploration	C-CPIF	Various, 5 contractors	0	6223	1Q	0		0		0	6223	6223
b . APL-A Component Technology Development	C-CPIF	Various, 6 contractors	0	1487	1Q	2500	1-4Q	2000	1Q	0	5987	5987
c . APL-A Component Advanced Development	C-CPIF	TBD	0	3297	4Q	12840	1-4Q	17600	1Q	0	33737	33737
d . APL-A Support	C-CPIF	BRTRC, Alexandria VA; Robbins Goia, VA; Various Others	0	1081	1-3Q	1000	1-4Q	1200	1-4Q	0	3281	3281
e . APL-A Universal Minefield Controller Development	C-CPIF	TBD	0	0		2000	2-4Q	1500	1Q	0	3500	3500
f . APL-A Continuing Efforts	TBD	TBD	0	0		0		0		302003	302003	302003
Subtotal:			0	12088		18340		22300		302003	354731	354731

## ARMY RDT&E COST ANALYSIS(R-3)

**February 2002**

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

**5 - Engineering and manufacturing development**

**0604808A - Landmine Warfare/Barrier - Eng Dev**

**443**

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 . Eng. Support	MIPR	ARDEC, Picatinny Arsenal, NJ	0	2316	1Q	1500	1-4Q	2000	1-4Q	0	5816	5816
b . Eng. Support	MIPR	Night Vision Labs, Ft. Belvoir, VA	0	942	1-2Q	2000	1-4Q	2000	1-4Q	0	4942	4942
c . Concepts & Component Analysis & Evaluation	MIPR	Various (LLNL, CA; LANL, NM; others)	0	7078	1-4Q	4067	1-4Q	5300	1-4Q	0	16445	16445
Subtotal:			0	10336		7567		9300		0	27203	27203

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
Subtotal:			0	0		0		0		0	0	0

Remarks: Not Applicable

## ARMY RDT&E COST ANALYSIS(R-3)

**February 2002**

BUDGET ACTIVITY

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PROJECT

**5 - Engineering and manufacturing development**

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**443**

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 Mgmt.	In-House	PM-MCD, Picatinny Arsenal, NJ	0	455	1-4Q	300	1-4Q	400	1-4Q	0	1155	1155
Subtotal:			0	455		300		400		0	1155	1155
Project Total Cost:			0	22879		26207		32000		302003	383089	383089