

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

February 2003

## BUDGET ACTIVITY

### 5 - System Development and Demonstration

## PE NUMBER AND TITLE

0604808A - Landmine Warfare/Barrier - Eng Dev

COST (In Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	55502	123314	90396	90126	117975	128648	48003	66876	0	805707
016 CLOSE COMBAT CAPABILITIES ENG DEV	1330	21483	2697	0	0	0	0	0	0	25510
415 MINE NEUTRAL/DETECTION	39520	44185	33706	13234	19933	28906	48003	66876	0	320263
434 ANTI-PERSONNEL LANDMINE ALTERNATIVES (NSD)	1114	27055	22522	9833	0	0	0	0	0	96612
443 APL-A (MIXED SYSTEMS)	13538	30591	31471	67059	98042	99742	0	0	0	363322

**A. Mission Description and Budget Item Justification:** This program element (PE) provides for System Development and Demonstration of mine, countermine, demolition, non-lethal, and shoulder launched munitions/systems. The PE also it provides for development of grenades, munition simulators, and pyrotechnic devices/systems. The Close Combat Capabilities Engineering Development, provides for the increased tactical effectiveness and responsiveness of landmines, with development of upgrades for the Volcano Dispenser and the development of a Volcano Light system. 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. Mine Neutralization/Detection Engineering Development, provides for development of 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). Anti-Personnel Landmine Alternatives (APLA) provides for development of alternative systems for Non Self-Destruct (NSD) Anti-Personnel Landmines (APLs). APLA Track Mixed Systems provides alternatives to anti-personnel submunitions used in mixed anti-tank (AT) landmine systems and possibly the entire mixed landmine system.

These systems support the Interim and Objective transition path of the Transformation Campaign Plan (TCP).

**ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)****February 2003****BUDGET ACTIVITY****5 - System Development and Demonstration****PE NUMBER AND TITLE****0604808A - Landmine Warfare/Barrier - Eng Dev**

<b><u>B. Program Change Summary</u></b>	<b>FY 2002</b>	<b>FY 2003</b>	<b>FY 2004</b>	<b>FY 2005</b>
Previous President's Budget (FY 2003)	68550	128992	108109	117005
Current Budget (FY 2004/2005 PB)	55502	123314	90396	90126
Total Adjustments	-13048	-5678	-17713	-26879
Congressional program reductions				
Congressional rescissions		-608		
Congressional increases				
Reprogrammings	-11141	-1517		
SBIR/STTR Transfer	-1907	-3553		
Adjustments to Budget Years			-17713	-26879

FY 02: Funds (-\$11.1M) realigned to higher priority requirements.

FY 04: Funds (-\$17.7M) realigned to higher priority requirements.

FY 05: Funds (-\$26.9M) realigned to higher priority requirements.

<b>ARMY RDT&amp;E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)</b>								<b>February 2003</b>		
BUDGET ACTIVITY <b>5 - System Development and Demonstration</b>				PE NUMBER AND TITLE <b>0604808A - Landmine Warfare/Barrier - Eng Dev</b>				PROJECT <b>016</b>		
COST (In Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
016 CLOSE COMBAT CAPABILITIES ENG DEV	1330	21483	2697	0	0	0	0	0	0	25510
<p><b><u>A. Mission Description and Budget Item Justification:</u></b> This project provides for Systems Development and Demonstration of mine, demolition, non-lethal, and shoulder launched munitions/systems. Also provides for development of grenades, munition simulators, and pyrotechnic devices. Includes the upgrade to the Volcano Dispenser Control Unit (DCU) and the Volcano modularization in support of the Stryker Brigade Combat Team (SBCT). Also includes 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.</p> <p>These Systems support the Interim and Objective Forces of the Transformation Campaign Plan (TCP).</p>										
<b><u>Accomplishments/Planned Program</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>
Continue design/development of Volcano DCU upgrades.							1230	5122	1297	0
Continue test planning and preparation for Volcano DCU .							100	200	0	0
initiate Volcano DCU Engineering testing.							0	700	600	0
Initiate Design/Development of Volcano Light							0	807	600	0
Initiate Volcano Light Testing							0	100	200	0
Initiate Development of Flexible linear Shaped Charge.							0	2629	0	0
Initiate Development of Remote Shock Tube Initiator.							0	2853	0	0
Initiate development of Magnetic Urban OPS Structure Remote Initiator.							0	3000	0	0
Initiate development of Insensitive Initiator.							0	2659	0	0
Initiate development of Advanced Cratering System.							0	3413	0	0
Totals							1330	21483	2697	0

<b>ARMY RDT&amp;E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)</b>								<b>February 2003</b>		
<b>BUDGET ACTIVITY</b> <b>5 - System Development and Demonstration</b>				<b>PE NUMBER AND TITLE</b> <b>0604808A - Landmine Warfare/Barrier - Eng Dev</b>					<b>PROJECT</b> <b>016</b>	
<b><u>B. Other Program Funding Summary</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>FY 2008</u></b>	<b><u>FY 2009</u></b>	<b><u>To Compl</u></b>	<b><u>Total Cost</u></b>
G39103, Volcano Light	0	0	0	2377	0	0	0	0	0	2377
G39100, Dispenser, Mine M139	0	0	5231	3332	0	0	0	0	0	8563
<p><b><u>C. Acquisition Strategy:</u></b>After completing the system development and demonstration phase, the Volcano upgrade program will transition into production with a competitive solicitation to a performance specification. All of the demolition development efforts will be competitive selections with production options.</p>										

ARMY RDT&E COST ANALYSIS(R-3)									February 2003			
BUDGET ACTIVITY <b>5 - System Development and Demonstration</b>					PE NUMBER AND TITLE <b>0604808A - Landmine Warfare/Barrier - Eng Dev</b>					PROJECT <b>016</b>		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Volcano DCU Upgrade-SDD Contract	C-CPIF	Alliant Tech Systems, Plymouth MN	1230	4266	2Q	997		0		0	6493	6493
b . Volcano Light-SDD Contract	C-CPIF	Alliant Tech Systems, Plymouth MN	0	607	2Q	500		0		0	1107	1107
c . Demolition Programs SDD Contracts	C-CPIF	TBD	0	12454	3Q	0		0		0	12454	12841
Subtotal:			1230	17327		1497		0		0	20054	20441
II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Engineering Support Volcano Light	MIPR	TACOM/ARDEC, Picatinny Arsenal, NJ	0	100	1Q	50	1Q	0		0	150	150
b . Engineering Support Volcano DCU	MIPR	TACOM/ARDEC, Picatinny Arsenal, NJ	100	700	1Q	200		0		0	1000	1000
c . Engineering Support Demolition Programs	MIPR	Various	0	1500	2Q	0		0		0	1500	1500

ARMY RDT&E COST ANALYSIS(R-3)									February 2003			
BUDGET ACTIVITY 5 - System Development and Demonstration					PE NUMBER AND TITLE 0604808A - Landmine Warfare/Barrier - Eng Dev					PROJECT 016		
II. Support Cost (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			100	2300		250		0		0	2650	2650
Remarks: None												
III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Volcano Light			0	100	2Q	200	2Q	0		0	300	300
b . Volcano- DCU	MIPR	ATEC, Alexandria, VA	0	900	2Q	600	2Q	0		0	1500	1600
c . Demolition Programs Test Support	MIPR	ATEC, Alexandria, VA	0	400	2Q	0		0		0	400	400
Subtotal:			0	1400		800		0		0	2200	2300
Remarks: None												

ARMY RDT&E COST ANALYSIS(R-3)									February 2003			
BUDGET ACTIVITY 5 - System Development and Demonstration					PE NUMBER AND TITLE 0604808A - Landmine Warfare/Barrier - Eng Dev					PROJECT 016		
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Volcano Light	In-House	PM CCS, Picatinny Arsenal, NJ	0	100	1Q	50		0		0	150	150
b . Volcano DCU	In-House	PM CCS, Picatinny Arsenal, NJ	0	156	1Q	100		0		0	256	500
c . Demolitions Programs	In-House	PM CCS, Picatinny Arsenal, NJ	0	200	1Q	0		0		0	200	0
Subtotal:			0	456		150		0		0	606	650
Remarks: None												
Project Total Cost:			1330	21483		2697		0		0	25510	26041

[illegible]



<b>ARMY RDT&amp;E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)</b>								<b>February 2003</b>		
BUDGET ACTIVITY <b>5 - System Development and Demonstration</b>				PE NUMBER AND TITLE <b>0604808A - Landmine Warfare/Barrier - Eng Dev</b>				PROJECT <b>415</b>		
COST (In Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
415     MINE NEUTRAL/DETECTION	39520	44185	33706	13234	19933	28906	48003	66876	0	320263
<p><b><u>A. Mission Description and Budget Item Justification:</u></b> This project provides System Development and Demonstration (SDD) for the Airborne Standoff Minefield Detection System (ASTAMIDS). The Block I ASTAMIDS uses an Electro-Optic/Infrared (EO/IR) sensor mounted on a Future Combat System Unit of Action Unmanned Aerial Vehicle to detect and locate minefields and obstacles that are impediments to maneuver forces. Block I ASTAMIDS can be used in the tactical operations in real time, day and night, to detect surface implaced and recently buried minefields and obstacles.</p> <p>Handheld Stand-off Mine Detection System (HSTAMIDS) is a handheld multi-sensor detector that combines an advanced metal detector with a special purpose Ground Penetrating Radar (GPR) coupled to an advanced signal processor and software algorithms. It provides for enhanced detection capabilities against non-metallic mines and reduces incidences of false alarms in highly cluttered metal environments.</p> <p>Ground Standoff Mine Detection System (GSTAMIDS) Block 0 is a two vehicle system consisting of teleoperated mine detection vehicle and a blast protected clearance vehicle. Block 0 keep soldiers safe by providing a 400 meter standoff distance during mine detection operations. The mine detection vehicle employ multiple sensors (metal detector and GPR) in order to detect all types of anti-tank mines. GSTAMIDS Block I is an integration of advanced countermining capabilities that will provide the Objective Force with the fastest means possible to detect and clear anti-tank (AT) mines. Block I will be capable of marking a cleared path eight meters wide to allow safe passage by tactical convoys.</p> <p>Explosive Standoff Minefield Clearer (Mongoose) is a rocket deployed array of shaped charge munitions, launched across minefields and command detonated, to provide a high confidence cleared lane for passage of mounted troops. Mongoose will defeat all defined threat mines from a stand-off position including mines with countermeasures to current countermining systems.</p> <p>Obstacle Marking System (OMS) is designed to work in conjunction with other countermining systems. OMS provides the Army with the capability to clearly mark a path through a minefield and other obstacles.</p> <p>These systems are Interim and Objective Force Block I systems.</p>										

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)			February 2003			
BUDGET ACTIVITY		PE NUMBER AND TITLE			PROJECT	
5 - System Development and Demonstration		0604808A - Landmine Warfare/Barrier - Eng Dev			415	
Accomplishments/Planned Program		FY 2002	FY 2003	FY 2004	FY 2005	
Conduct Source Selection and award GSTAMIDS Block I System Development & Demonstration Contract.		0	1000	0	0	
Prepare for GSTAMIDS Block 0 for Milestone C (Full Rate Production).		0	585	0	0	
Complete GSTAMIDS Block 0 Contractor Testing.		2333	425	0	0	
Complete GSTAMIDS Block I SD&D preliminary design effort.		0	3987	0	0	
Complete GSTAMIDS Block 0 System Integration.		2104	426	0	0	
Initiate GSTAMIDS Block I SD&D detailed design and system integration effort and confirmation sensor.		0	0	10890	12555	
Conduct GSTAMIDS Block 0 Government Testing.		0	2273	0	0	
ESMC BCT design and validate insensitive munition rocket.		0	17888	4000	0	
Completed ESMC (Mongoose) BCT preliminary design.		18010	0	0	0	
Fabricate ESMC prototypes (34 reloads, 5 trailers).		0	8548	5000	0	
Contractor/Government testing of ESMC.		0	2305	4000	0	
Procured long lead materials for ESMC Prototypes.		4143	0	0	0	
Fabrication of 22 HSTAMIDS Prototypes and conduct DT/OT testing.		3182	5122	0	0	
Develop ESMC Manufacturing Processes.		1080	700	1434	0	
Completed HSTAMIDS System Development Design.		7668	0	0	0	
Prepare documentation, conduct MS C, and prepare procurement package for HSTAMIDS.		0	926	0	0	
Conduct HSTAMIDS P3I		0	0	6202	679	
Design/develop Obstacle Marking System		0	0	2180	0	
Conducted Robotics Tiger Team exercise.		1000	0	0	0	
Totals		39520	44185	33706	13234	

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

February 2003

BUDGET ACTIVITY

5 - System Development and Demonstration

PE NUMBER AND TITLE

0604808A - Landmine Warfare/Barrier - Eng Dev

PROJECT

415

## B. Other Program Funding Summary

	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl	Total Cost
PE 0603619A, Project 606, Countermines/Barrier Advanced Dev	458	9716	9	11755	9053	8254	39015	43453	Continuing	Continuing
R68200, HSTAMIDS	0	0	1766	6673	6930	6917	7947	7225	Continuing	Continuing
OPA 3, R68101, GSTAMIDS Block 0	8180	20359	0	0	0	0	0	0	0	28539
OPA 3, R68102, GSTAMIDS Block 1	0	0	0	0	0	7201	20932	20226	Continuing	Continuing
OPA 3, R68105 ESMC	0	0	0	1934	2898	578	0	0	0	5410
Ammo, E81400 ESMC	0	0	0	6855	16612	20262	0	0	0	43729
OPA 3, S11500 ASTAMIDS	0	0	0	0	0	0	11191	11963	Continuing	Continuing

**C. Acquisition Strategy:** The Explosive Standoff Minefield Detection Clearer (ESMC) competitively-selected Concept & Technology Development (CTD) contractor was 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 countermines 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). HSTAMIDS had 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.

ARMY RDT&E COST ANALYSIS(R-3)									February 2003			
BUDGET ACTIVITY <b>5 - System Development and Demonstration</b>					PE NUMBER AND TITLE <b>0604808A - Landmine Warfare/Barrier - Eng Dev</b>					PROJECT <b>415</b>		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . GSTAMIDS Block 1	C-CPFF	Quantum Magnetics San Diego, CA	0	1800	1-2Q	0		0		0	1800	1800
b . GSTAMIDS Block 1	C-CPFF	BAE Systems, Austin, TX	0	95	1Q	0		0		0	95	95
c . GSTAMIDS Block 1	TBD	TBD	0	0		7890	2Q	9555	2Q	Continue	Continue	Continue
d . GSTAMIDS Block 0	C-CPFF	EG&G Systems Inc., Albuquerque, NM	15015	1015	1-2Q	0		0		0	16030	16161
e . HSTAMIDS	C-CPIF	CY Terra Corporation, Orlando, FL	12401	2123	1-2Q	3219	1Q	203	1Q	0	17946	17566
f . ESMC	SS-CPIF	BAE Systems, Austin, TX	19933	25330	1-2Q	10400		0		0	55663	54197
g . OMS	TBD	TBD	0	0		1000	2Q	0		0	1000	1000
Subtotal:			47349	30363		22509		9758		Continue	Continue	Continue

ARMY RDT&E COST ANALYSIS(R-3)									February 2003			
BUDGET ACTIVITY <b>5 - System Development and Demonstration</b>					PE NUMBER AND TITLE <b>0604808A - Landmine Warfare/Barrier - Eng Dev</b>					PROJECT <b>415</b>		
II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Eng. support GSTAMIDS Blk 0	MIPR	NVESD/ CECOM, Ft Belvoir, VA	6743	85	1Q	0		0		0	6828	6828
b . Eng support GSTAMIDS Blk 0	MIPR	Various OGAs	6159	91	1Q	0		0		0	6250	5250
c . Eng Support GSTAMIDS Block 0	Various	Various Contractors	7722	149	1Q	0		0		0	7871	7871
d . GSTAMIDS Blk I	MIPR	Various OGAs	0	757	1Q	700	1Q	700	1Q	Continue	2157	Continue
e . GSTAMIDS Support Blk I	MIPR	NVESD/CECOM, Ft Belvoir, VA	0	1231	1Q	800	1Q	800	1Q	Continue	2831	Continue
f . Support GSTAMIDS Blk 1	Various	Various Contractors	0	628	1Q	400	1Q	400	1Q	Continue	1428	Continue
g . Eng Support HSTAMIDS	MIPR	NVESD/CECOM, Ft Belvoir, VA	3162	1038	1Q	1294	1Q	276	1Q	Continue	5770	Continue
h . Support HSTAMIDS	Various	Various	3519	1270	1Q	804	1Q	0		Continue	5593	Continue
i . ESMC (Mongoose)	MIPR	NVESD/CECOM, Ft Belvoir, VA	1497	367	1Q	500	1Q	0		Continue	Continue	Continue
j . ESMC (Mongoose)	Various	Various	3905	1847	1Q	1834	1Q	0		Continue	Continue	Continue

ARMY RDT&E COST ANALYSIS(R-3)									February 2003			
BUDGET ACTIVITY <b>5 - System Development and Demonstration</b>					PE NUMBER AND TITLE <b>0604808A - Landmine Warfare/Barrier - Eng Dev</b>					PROJECT <b>415</b>		
II. Support Cost (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
k . OMS	TBD	TBD	0	0		1080	2Q	0		0	Continue	0
l . Tiger team for robotics	MIPR	PM - Soldier, Ft. Belvoir	1000	0		0		0		0	Continue	0
Subtotal:			33707	7463		7412		2176		Continue	Continue	Continue
III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Test support GSTAMIDS Blk 0	MIPR	ATEC, Alexandria, VA	3082	1599	2Q	0		0		0	4681	4793
b . Test support HSTAMIDS	MIPR	ATEC, Alexandria, VA	1793	1025	1Q	309	1Q	103	1Q	0	3230	5734
c . Test Support ESMC	MIPR	ATEC, Alexandria, VA	597	886	1Q	1300	1Q	0		Continue	2783	Continue
d . Test support GSTAMIDS Blk 1	MIPR	ATEC, Alexandria, VA	0	40	2Q	300	2Q	300	2Q	0	640	640
Subtotal:			5472	3550		1909		403		Continue	11334	Continue

ARMY RDT&E COST ANALYSIS(R-3)									February 2003			
BUDGET ACTIVITY <b>5 - System Development and Demonstration</b>					PE NUMBER AND TITLE <b>0604808A - Landmine Warfare/Barrier - Eng Dev</b>					PROJECT <b>415</b>		
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program management	In-House	PM-CCS, Picatinny Arsenal, NJ	2799	1171	1-4Q	976	1-4Q	449	1-4Q	Continue	5395	Continue
b . Program management Contractor support	Various	Various	2737	1638	1-4Q	900	1-4Q	448	1-4Q	Continue	5723	Continue
Subtotal:			5536	2809		1876		897		Continue	11118	Continue
Project Total Cost:			92064	44185		33706		13234		Continue	Continue	Continue

Schedule Profile Detail (R-4a Exhibit)							February 2003	
BUDGET ACTIVITY <b>5 - System Development and Demonstration</b>				PE NUMBER AND TITLE <b>0604808A - Landmine Warfare/Barrier - Eng Dev</b>			PROJECT <b>415</b>	
<u>Schedule Detail</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>FY 2008</u>	<u>FY 2009</u>
GSTAMIDS Block 0 MS C			2Q					
GSTAMIDS Block 1 MS B		4Q						
GSTAMIDS Block I MS C						4Q		
HSTAMIDS MS B								
HSTAMIDS MS C		4Q						
ESMC MS B								
ESMC (BCT) MS C				2Q				



ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)								February 2003			
BUDGET ACTIVITY 5 - System Development and Demonstration				PE NUMBER AND TITLE 0604808A - Landmine Warfare/Barrier - Eng Dev				PROJECT 434			
COST (In Thousands)		FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
434	ANTI-PERSONNEL LANDMINE ALTERNATIVES (NSD)	1114	27055	22522	9833	0	0	0	0	0	96612
<p><b>A. Mission Description and Budget Item Justification:</b> This program provides for development of alternative systems for Non Self-Destruct (NSD) Anti-Personnel Landmines (APLs), particularly in Korea. This System supports the Objective transition path of the Transformation Campaign Plan (TCP).</p>											
<b>Accomplishments/Planned Program</b>							<b>FY 2002</b>	<b>FY 2003</b>	<b>FY 2004</b>	<b>FY 2005</b>	
Contractor team design/development for SD&D Phase							0	23098	9622	4613	
Risk Reduction Contract							0	50	0	0	
Provide general engineering support, program management and risk reduction efforts for SD&D.							1114	3110	6200	4320	
Perform modeling and simulation.							0	405	700	400	
Government test and evaluation facility and facility support activities							0	392	6000	500	
Totals							1114	27055	22522	9833	

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)							February 2003			
BUDGET ACTIVITY 5 - System Development and Demonstration				PE NUMBER AND TITLE 0604808A - Landmine Warfare/Barrier - Eng Dev					PROJECT 434	
B. Other Program Funding Summary	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl	Total Cost
Ammo E91700	0	0	0	34863	91368	127966	132492	126867	0	513556
<p>C. Acquisition Strategy: USD(AT&amp;L)) approved the NSD-A plan to have Alliant Tech Systems and Textron Systems Corporation form a joint venture for the System Development &amp; Demonstration (SDD) and Production &amp; Deployment (P&amp;D) efforts of this program.</p>										

ARMY RDT&E COST ANALYSIS(R-3)									February 2003			
BUDGET ACTIVITY <b>5 - System Development and Demonstration</b>					PE NUMBER AND TITLE <b>0604808A - Landmine Warfare/Barrier - Eng Dev</b>					PROJECT <b>434</b>		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . NSD-A SDD	C-CPIF	Alliant Tech Systems, Plymouth, MN/TEXTRON, Wilmington, MA	16558	23098	1-3Q	9622	1Q	4613	1Q	0	53891	54662
b . RCU with embedded GPS	FFP	TALLA Tech	0	50	2Q	0		0		0	50	50
Subtotal:			16558	23148		9622		4613		0	53941	54712
II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Eng support NSD-A	MIPR	TACOM/ARDEC, Picatinny Arsenal, NJ	3260	1015	2Q	2550	2Q	1798	2Q	0	8623	7615
b . Eng support NSD-A	MIPR	Various	1908	750	2Q	1460	2Q	996	2Q	0	5114	5114
c . Engr Support	Various	BRTRC, CORBETT, MITRE, Various	0	645	2-4Q	1260	2Q	856	2Q	0	2761	2761
Subtotal:			5168	2410		5270		3650		0	16498	15490

ARMY RDT&E COST ANALYSIS(R-3)									February 2003			
BUDGET ACTIVITY 5 - System Development and Demonstration					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 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . T&E	MIPR	Army Evaluation Center, MD, FT Benning, GA, YUMA, AZ	2000	392	2Q	6000	2Q	500	2Q	0	8892	8892
Subtotal:			2000	392		6000		500		0	8892	8892
Remarks: Not Applicable												
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program Mgmt NSD-A	In-House	PM-CCS, Picatinny Arsenal, NJ	456	1105	1-4Q	1630	1-4Q	1070	1-4Q	0	4261	4155
Subtotal:			456	1105		1630		1070		0	4261	4155
Project Total Cost:			24182	27055		22522		9833		0	83592	83249

Schedule Profile Detail (R-4a Exhibit)							February 2003	
BUDGET ACTIVITY <b>5 - System Development and Demonstration</b>				PE NUMBER AND TITLE <b>0604808A - Landmine Warfare/Barrier - Eng Dev</b>			PROJECT <b>434</b>	
<u>Schedule Detail</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>FY 2008</u>	<u>FY 2009</u>
NSD-A MS-C				3Q				
Production Qualification Test			3Q					
Initial Operational Test				1Q				
Material Release						3Q		
First Unit Equipped							1Q	
Initial Operational Capability							4Q	

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)							February 2003				
BUDGET ACTIVITY 5 - System Development and Demonstration				PE NUMBER AND TITLE 0604808A - Landmine Warfare/Barrier - Eng Dev				PROJECT 443			
COST (In Thousands)		FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
443	APL-A (MIXED SYSTEMS)	13538	30591	31471	67059	98042	99742	0	0	0	363322
<p><b>A. Mission Description and Budget Item Justification:</b> This project provides alternatives to the anti-personnel submunitions used within mixed anti-tank (AT)/anti-personnel (AP) munition systems or the entire mixed AT/AP system. Alternative systems may include but are not limited to surveillance, command and control (AT/AP munitions), remote control, remote delivery, and overwatch effects that will be developed and evaluated in parallel assuring an equivalent or enhanced capability to that currently provided by mixed AT/AP systems. Modeling and simulation will be used to evaluate system alternatives and develop/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 systems that maintain or enhance current capabilities while supporting the transition path to the objective force.</p>											
<b>Accomplishments/Planned Program</b>							<b>FY 2002</b>	<b>FY 2003</b>	<b>FY 2004</b>	<b>FY 2005</b>	
Component Advanced Development (CAD) for mixed system alternatives							5033	21291	22171	46309	
Pre CAD Phase Risk Reduction effort for Mixed System Landmine Alternative (MSLA).							4400	0	0	0	
Provide efforts for horizontal command, control, communication, computer integration.							405	300	300	425	
Evaluate/Improve Track III alternative concepts by potential transition of Track II concept Development into MLSA.							0	375	550	4700	
Conduct distributed modeling and simulation.							3000	2000	1500	3200	
Develop universal munition controller system.							700	725	650	1975	
Perform CAD phase development evaluation and prepare assessment.							0	0	0	625	
System Development and Demonstration Phase Preparation.							0	0	0	325	
Prepare for CAD phase test and evaluation.							0	100	500	2500	
Perform CAD phase risk reduction studie (Long range conops).							0	550	550	550	
Perform CAD phase risk reduction studie (Long range communications).							0	1050	1050	1050	
Perform CAD phase risk reduction study (Logistics).							0	300	300	300	
Perform CAD phase risk reduction study (Target discrimination (sensors)).							0	745	745	745	
Perform CAD phase risk reduction study (Long Range deployment).							0	1023	1023	1023	
Perform CAD phase risk reduction study (Enhanced system remote control capabilities).							0	632	632	832	
Perform CAD phase risk reduction study (BAA for component technology to fill technological gaps).							0	1500	1500	2500	

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)								February 2003			
BUDGET ACTIVITY <b>5 - System Development and Demonstration</b>					PE NUMBER AND TITLE <b>0604808A - Landmine Warfare/Barrier - Eng Dev</b>				PROJECT <b>443</b>		
<u>Accomplishments/Planned Program (continued)</u>								FY 2002	FY 2003	FY 2004	FY 2005
Totals								13538	30591	31471	67059
<b>B. Other Program Funding Summary</b>	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl	Total Cost	
PAA SSN: E91701	0	0	0	0	0	0	0	0	0	0	
<p><b>C. Acquisition Strategy:</b> Continue system alternative development efforts by entering into block Component Advanced Development(CAD) with two system contractors. The program will pursue parallel risk reduction studies and component technology development with the intent of technology insertion into the program. Studies, technology development, and CAD phase efforts (development, test, and evaluation) will lead to selection of System development and Demonstration (SDD) contractor.</p>											

ARMY RDT&E COST ANALYSIS(R-3)									February 2003			
BUDGET ACTIVITY 5 - System Development and Demonstration					PE NUMBER AND TITLE 0604808A - Landmine Warfare/Barrier - Eng Dev					PROJECT 443		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . APL-A Component advanced Development	C-CPIF	Textron Systems, Wilmington, MA; and ATK, Hopkins, MN	6223	16791	2-3Q	17671	2Q	40134	1Q	0	80819	80819
b . APL-A Component Technology Development	C-CPIF	Various contractors	1487	1500	2-3Q	1500	1-4Q	2000	1-4Q	0	6487	6487
c . APL-A Support		Various contractors	4830	2600	2-3Q	2600	1-4Q	3200	1-4Q	0	13230	13230
d . APL-A UMCS	MIPR	CECOM, Ft. Monmouth	700	725	2-3Q	650	1Q	1975	1Q	0	4050	4050
e . APL-A Risk Reduction Studies	C-CPFF	TBD	0	4300	2-3Q	4300	1-2Q	5000	1-2Q	0	13600	13600
f . APL-A Product Improvement Efforts	TBD	TBD	0	375	2-3Q	550	1Q	4700		0	5625	5625
g . APL-A System Concept Exploration	C-CPIF	Various contractors	9311	0		0		0		0	9311	6223
Subtotal:			22551	26291		27271		57009		0	133122	130034



ARMY RDT&E COST ANALYSIS(R-3)									February 2003			
BUDGET ACTIVITY <b>5 - System Development and Demonstration</b>					PE NUMBER AND TITLE <b>0604808A - Landmine Warfare/Barrier - Eng Dev</b>					PROJECT <b>443</b>		
II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Engineering Support	MIPR	TACOM/ARDEC, Picatinny Arsenal, NJ	3456	1400	2-4Q	1400	1Q	2600	1Q	0	8856	8556
b . Engineering Support	MIPR	Night Vision Labs, Ft. Belvoir, VA	1237	300	2-4Q	300	1Q	750	1Q	0	2587	2587
c . Concepts & Component Analysis & Evaluation	MIPR	Various	8251	1800	2-4Q	1300	1-4Q	3500	1Q	0	14851	14851
Subtotal:			12944	3500		3000		6850		0	26294	25994
III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . T&E Support	MIPR	Army Evaluation Center, MD	1210	50	2-4Q	150	1Q	500	1Q	0	1910	773
b . Test Facilities and T&E Support	MIPR	TBD	0	50	2-4Q	350	1Q	2000	1Q	0	2400	2400
Subtotal:			1210	100		500		2500		0	4310	3173

<b>ARMY RDT&amp;E COST ANALYSIS(R-3)</b>								<b>February 2003</b>				
BUDGET ACTIVITY <b>5 - System Development and Demonstration</b>				PE NUMBER AND TITLE <b>0604808A - Landmine Warfare/Barrier - Eng Dev</b>						PROJECT <b>443</b>		
Remarks: Not Applicable												
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program Management	MIPR	PM-CCS. Picatinny Arsenal, NJ	1210	700	2-4Q	700	1-4Q	700	1-4Q	0	3310	3310
Subtotal:			1210	700		700		700		0	3310	3310
Project Total Cost:			37915	30591		31471		67059		0	167036	162511

<b>Schedule Profile Detail (R-4a Exhibit)</b>						<b>February 2003</b>		
BUDGET ACTIVITY <b>5 - System Development and Demonstration</b>				PE NUMBER AND TITLE <b>0604808A - Landmine Warfare/Barrier - Eng Dev</b>			PROJECT <b>443</b>	
<u>Schedule Detail</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>FY 2008</u>	<u>FY 2009</u>
Track III MS B				4Q				
Track III MS C							1Q	
IOC								