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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Army **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>				R-1 ITEM NOMENCLATURE PE 0604808A: <i>Landmine Warfare/Barrier - Eng Dev</i>							
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	89.064	95.577	87.426	-	87.426	65.155	47.418	30.442	45.094	Continuing	Continuing
016: <i>Close Combat Capabilities ENG DEV</i>	57.112	59.305	0.012	-	0.012	0.012	0.012	0.013	0.013	Continuing	Continuing
415: <i>MINE NEUTRAL/DETECTION</i>	31.952	36.272	78.446	-	78.446	51.185	32.527	23.542	45.081	Continuing	Continuing
434: <i>ANTI-PERSONNEL LANDMINE ALTERNATIVES (NSD)</i>	-	-	8.968	-	8.968	13.958	14.879	6.887	-	0.000	44.692

Note

Change Summary Explanation:

FY 2012: Increase of \$30.020 million for HUSKY mine detection system development and Explosive Hazard Pre-Detonation (EHP) Roller capability. Funding was transferred from Ground Standoff Mine Detection System (GSTAMIDS) Block 1, and Handheld Standoff Minefield Detection System (HSTAMIDS).

A. Mission Description and Budget Item Justification

This program element (PE) provides for System Development and Demonstration of networked munitions and countermines systems. This PE implements the National Landmine Policy to develop alternatives to the non-self-destructing anti-vehicle and anti-personnel landmine systems.

Project 016, Close Combat Capabilities Engineering Development, provides for the development of the anti vehicle mine replacement, Scorpion (previously the Intelligent Munitions System (IMS)) supports the current force in accordance with the landmine policy.

Project 415, Mine Neutralization/Detection provides for development of next generation standoff detection capability programs such as the Airborne Counter Explosive Reconnaissance and Targeting System (ACERTS), Ground Vehicle Sub Surface Sensor System (GVS4), and the Autonomous Mine Detection System (AMDS). It also supports development of training devices for Military Working Dogs involved in mine/IED detection. Explosive Hazard Roller capability to neutralize/detonate a broad spectrum of improvised explosive hazards while on the move, to support the route clearance mission.

Project 434, Anti-Personnel Landmine Alternatives - Develop Spider Networked Munitions (NM) Increment 2 capabilities to provide an improved NM Controller and the ability to employ and control fielded Army common Anti-Personnel (AP) and Anti-Vehicle (AV) lethal and non-lethal munitions and effects. The Spider Increment 2 program is the recipient of the transferred anti-vehicle landmine alternative mission from the Intelligent Munitions System called Scorpion program. Scorpion is being closed out due to affordability. Spider Increment 2 will build on the existing Spider system and develop the capability to initiate existing anti-vehicle munitions from the enhanced Spider Controller.

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APPROPRIATION/BUDGET ACTIVITY		R-1 ITEM NOMENCLATURE				
2040: Research, Development, Test & Evaluation, Army		PE 0604808A: Landmine Warfare/Barrier - Eng Dev				
BA 5: Development & Demonstration (SDD)						
B. Program Change Summary (\$ in Millions)		FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget		72.380	95.577	30.460	-	30.460
Current President's Budget		89.064	95.577	87.426	-	87.426
Total Adjustments		16.684	-	56.966	-	56.966
• Congressional General Reductions			-			
• Congressional Directed Reductions			-			
• Congressional Rescissions		-	-			
• Congressional Adds			-			
• Congressional Directed Transfers			-			
• Reprogrammings		19.002	-			
• SBIR/STTR Transfer		-2.318	-			
• Adjustments to Budget Years		-	-	56.966	-	56.966

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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
016: <i>Close Combat Capabilities ENG DEV</i>	57.112	59.305	0.012	-	0.012	0.012	0.012	0.013	0.013	Continuing	Continuing
Quantity of RDT&E Articles											
A. Mission Description and Budget Item Justification											
<p>The Intelligent Munitions System (IMS) Scorpion is an anti-vehicular weapons system that provides highly responsive terrain-shaping and protection capabilities to the unit commander. Trained operators remotely control ground-emplaced munitions via a portable control station out to distances of 1.5 kilometers. The commander integrates IMS Scorpion into his scheme of maneuver and fires in order to attack the enemy's freedom of maneuver while maintaining full friendly freedom of maneuver. He directs the emplacement of the munitions on the ground in building block fashion to achieve the desired effects against mounted threats ranging from single light wheeled vehicles to large armored formations. IMS Scorpion is a full spectrum weapons system effective in offensive, defensive, and stability operations. IMS Scorpion supports the National Landmine Policy by serving as a far superior alternative to the non-self-destructing anti-vehicular mines being removed from the U.S Inventory by 31 December 2010. The Department directed the closeout of the Scorpion program in FY2011 due to affordability. A more cost effective anti-vehicular capability will be developed under a Spider Increment II program starting in FY12.</p>											
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)								FY 2010	FY 2011	FY 2012	
<p>Title: Complete IMS/Scorpion Increment-I System Development.</p> <p align="right">Articles:</p> <p>Description: This is the main effort to develop the Scorpion - Intelligent Munition System.</p> <p>FY 2010 Accomplishments: Completed software builds. Conducted system integration tests. Conducted successful live fire tests.</p> <p>FY 2011 Plans: Complete hardware and software integration.</p>								4.130 0	2.584 0	-	
<p>Title: Hardware fabrication to support Government Qualification Testing</p> <p align="right">Articles:</p> <p>Description: FY10-FY11 Hardware Fabrication to Support Government Qualification Testing.</p> <p>FY 2010 Accomplishments: Conducted Contractor Manufacturing Prove-Out (MPO) and Test Prove-Out (TPO). Fabricated system hardware for FY10 Tropics Testing, Panama, and for Penetration and Behind-Armor Debris testing</p> <p>FY 2011 Plans:</p>								21.854 0	28.426 0	-	

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APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 5: Development & Demonstration (SDD)	R-1 ITEM NOMENCLATURE PE 0604808A: Landmine Warfare/Barrier - Eng Dev	PROJECT 016: Close Combat Capabilities ENG DEV		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2010	FY 2011	FY 2012
Refine MPO/TPO, and fabricate system hardware for FY11 Government Qualification tests.				
Title: IMS/Scorpion Increment-I modeling and simulation. Articles: Description: Continue to conduct IMS/Scorpion Increment-I modeling and simulation. FY 2010 Accomplishments: Continued Verification and Validation (V&V) of Scorpion models. Conducted end-to-end System Analysis. Updated algorithms for ground sensors and for warhead. FY 2011 Plans: Completed Verification and Validation (V&V) of Scorpion models.		3.212 0	0.537 0	-
Title: Conduct IMS/Scorpion Increment-I system Contractor Development Testing. Articles: Description: Conduct IMS/Scorpion Increment-I System contractor development testing. FY 2010 Accomplishments: Completed contractor risk reduction testing. Conducted Field Integration Tests. Initiated and completed the following: Reliability, Environmental, Highly Accelerated Life testing, and Dispensing Module software testing.		11.716 0	-	-
Title: Conduct IMS/Scorpion Increment-I Government Development and Operational Testing. Articles: Description: Conduct IMS/Scorpion Inc-I Government Development and Operational Testing. FY 2010 Accomplishments: Initiated Government Qualification Testing. Conducted Tropics Testing (Panama), and Behind-Armor Debris and Penetration Testing. FY 2011 Plans: Conduct operational testing: Limited User Test.		10.545 0	24.581 0	-
Title: Work with PEO-STRI to develop an IMS Training Device Articles: Description: Develop IMS training device with PEO-STRI.		5.655 0	3.177 0	0.012

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
<i>FY 2010 Accomplishments:</i> Completed XM1101 Trainer Critical Design Review. <i>FY 2011 Plans:</i> Conduct Logistics Demonstration and User Jury. <i>FY 2012 Plans:</i> Conduct Logistics Demonstration and User Jury			
Accomplishments/Planned Programs Subtotals	57.112	59.305	0.012

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u> <u>Base</u>	<u>FY 2012</u> <u>OCO</u>	<u>FY 2012</u> <u>Total</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• PAA IMS (E96900): <i>Intelligent Munitions System (IMS)</i>	2.674	10.246								0.000	12.920
• OPA2 IMS (B55503): <i>(IMS) Remote Control Unit</i>		6.603								0.000	6.603

D. Acquisition Strategy
The IMS Scorpion was being developed as an evolutionary acquisition program utilizing an incremental approach. This strategy addressed all IMS Scorpion capabilities in the requirements document. The first increment would have supported National Landmine Policy and provided full spectrum weapons system effectiveness in offensive, defensive, and stability operations. In June 2006, a competitive Engineering and Manufacturing Development (EMD) Contract was awarded to Textron Defense Systems of Wilmington, MA. This contract will be closed out September 2011.

E. Performance Metrics
Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army										DATE: February 2011			
APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 5: Development & Demonstration (SDD)				R-1 ITEM NOMENCLATURE PE 0604808A: Landmine Warfare/Barrier - Eng Dev				PROJECT 016: Close Combat Capabilities ENG DEV					
Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
IMS	MIPR	PM CCS:Picatinny Arsenal, NJ	9.661	2.000		-		-		-	Continuing	Continuing	Continuing
IMS	SS/FP	Robbins-Goia:Alexandria, VA	3.303	-		-		-		-	Continuing	Continuing	Continuing
IMS	SS/FP	BRTRC:Alexandria, VA	2.524	0.600		-		-		-	Continuing	Continuing	Continuing
IMS TSM Spt	MIPR	MTS:Alexandria, VA	0.805	-		-		-		-	Continuing	Continuing	Continuing
LCCE	SS/FP	Tecolote:Ft Monmouth, NJ	0.152	-		-		-		-	Continuing	Continuing	Continuing
Subtotal			16.445	2.600		-		-		-			
Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Scorpion System Development & Demonstration	SS/CPIF	Textron Defense Systems,:Wilmington, MA	249.655	30.104		-		-		-	Continuing	Continuing	Continuing
Scorpion - MITRE provide C4 support	SS/FP	MITRE:McLean, VA	5.196	0.500		-		-		-	Continuing	Continuing	Continuing
Subtotal			254.851	30.604		-		-		-			
Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
IMS Engineering Support	MIPR	ARDEC:Picatinny Arsenal, NJ	33.107	5.400		-		-		-	Continuing	Continuing	Continuing
Modeling and Simulation	MIPR	NVESD:Ft Belvoir, VA	1.550	0.500		-		-		-	Continuing	Continuing	Continuing
C4ISR and IA	MIPR	CECOM:Ft Monmouth, NJ	1.049	0.200		-		-		-	Continuing	Continuing	Continuing
IMS Engineering Support	MIPR	Various:Various	8.733	0.795		-		-		-	Continuing	Continuing	Continuing

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2040: Research, Development, Test & Evaluation, Army BA 5: Development & Demonstration (SDD)				PE 0604808A: Landmine Warfare/Barrier - Eng Dev				016: Close Combat Capabilities ENG DEV					
Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Simple Key Loader (SKL)	MIPR	PEO C3T:Ft Monmouth, N	0.700	-		-		-		-	Continuing	Continuing	Continuing
PEO STRI	MIPR	PEO STRI:Orlando, FL	0.270	0.250		0.012		-		0.012	Continuing	Continuing	Continuing
IMS - PM HMS	MIPR	PM HMS:Ft Monmouth, NJ	4.144	-		-		-		-	Continuing	Continuing	Continuing
Human Engineering	MIPR	ARL HRED:Aberdeen, MD	-	-		-		-		-	Continuing	Continuing	0.000
Subtotal			49.553	7.145		0.012		-		0.012			
Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
SLAD, AMSAA, AEC, DTC, ERDEC, CRTC, TRTC, NTS, FLW	MIPR	SLAD, AMSAA, AEC, DTC, ERDEC, CRTC, TRTC, NTS, FLW:Various	5.439	5.280		-		-		-	Continuing	Continuing	Continuing
DT-G & Live Fire	MIPR	Yuma Proving Grounds:Yuma, AZ	2.915	3.550		-		-		-	Continuing	Continuing	Continuing
Risk Reduction, Environmental	MIPR	White Sands Missile Range:White Sands, NM	1.860	0.950		-		-		-	Continuing	Continuing	Continuing
Operational Test	MIPR	OTC:Ft Hood, TX	0.842	2.400		-		-		-	Continuing	Continuing	Continuing
Live Fire, Limited User Test	MIPR	TMO:Huntsville, AL	-	5.656		-		-		-	Continuing	Continuing	Continuing
Arena Frag Testing	MIPR	ARDEC:Picatinny, NJ	-	1.120		-		-		-	Continuing	Continuing	Continuing
Subtotal			11.056	18.956		-		-		-			
			Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			331.905	59.305		0.012		-		0.012			

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	Total Prior Years Cost	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract	
<u>Remarks</u>									

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APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 5: Development & Demonstration (SDD)				R-1 ITEM NOMENCLATURE PE 0604808A: Landmine Warfare/Barrier - Eng Dev				PROJECT 415: MINE NEUTRAL/DETECTION			
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
415: MINE NEUTRAL/DETECTION	31.952	36.272	78.446	-	78.446	51.185	32.527	23.542	45.081	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

This Project provides for Engineering Manufacturing and Development (EMD) for the next generation of capabilities to detect, identify and neutralize explosive hazards such as Improvised Explosive Devices (IEDs) and landmines. These capabilities are a Family of Systems (FOS) encompassing handheld, vehicle mounted, small robotic mounted, aerial platform mounted and area clearance systems operating in manned, remotely controlled, semi-autonomous or fully autonomous modes. Continued development of this FOS is necessary to support Route Clearance Platoons located both within Engineer Companies, and Brigade Combat Teams.

The Husky Mine Detection System (HMDS) provides state of the art detection (ground penetrating radar) of surface laid and shallow buried explosive hazards (IEDs and landmines), deep buried cache detection, and semi-autonomous operation in support of route clearance missions. HMDS is a mission equipment package mounted on Husky route clearance vehicles and is located within Route Clearance Platoons.

The Vehicle Optical Sensor System (VOSS) provides a telescoping, gyro-stabilized, high-resolution, triple sensor (daylight, night-vision, and thermal-imaging) surveillance system to optically detect from standoff distances: explosive hazards (IEDs and landmines) and their trigger sources. VOSS is mounted on Medium Mine Protected Vehicles (MMPV) and the Joint EOD Rapid Response Vehicle (JERRV) located within Route Clearance Platoons and EOD Companies.

The Airborne Counter Explosive Reconnaissance and Targeting System (ACERTS) uses Multi-Spectral Imaging (MSI) and visible/Near Infrared sensors mounted on manned or unmanned aerial vehicles to detect and locate explosive hazards, IEDs and other obstacles that impede maneuver forces.

The Ground Vehicle Sub Surface Sensor System (GVS4) is a payload with detection and neutralization equipment mounted and integrated on manned or unmanned platforms to support Army Heavy and Infantry BCTs. This package may include downward looking, forward looking and side-looking radars, articulating crane arms with digging attachments and standoff optical and thermal viewing capabilities.

The Military Working Dogs will fund development of training devices and a worldwide deployable kennel for transporting/housing of the animals involved in explosive hazard detection.

The Area Mine Proofing System (AMPS) will provide improved capabilities for area clearance of explosive hazards including remote control kits for the medium mine clearing flails that integrates a proofing mechanism with a prime mover.

Explosive Hazard Roller ((EHP) capability to neutralize/detonate a broad spectrum of improvised explosive hazards while on the move, to support route clearance mission.

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)			FY 2010	FY 2011	FY 2012
Title: ACERTS Initiate Support to Flight Integration & Test		Articles:	2.200	9.777	-
			0	0	
Description: FY 10-11: ACERTS Initiate Support to Flight Integration & Test					
FY 2010 Accomplishments: FY 2010 ACERTS Initiate Support to Flight Integration & Test					
FY 2011 Plans: FY 2011 ACERTS Retroactive Contract Rate					
Title: ACERTS Alogorithm Development		Articles:	3.900	1.661	-
			0	0	
Description: ACERTS Initiate Algorithm Detection Enhancement Development					
FY 2010 Accomplishments: ACERTS Initiate Algorithm Detection Enhancement Development					
FY 2011 Plans: ACERTS Initiate Algorithm Detection Enhancement Development					
Title: ACERTS Development		Articles:	4.012	0.500	-
			0	0	
Description: FY10-11: ACERTS - Initiate Algorithm False Alarm Reduction Development					
FY 2010 Accomplishments: FY10-11: ACERTS - Initiate Algorithm False Alarm Reduction Development					
FY 2011 Plans: FY10-11: ACERTS - Initiate Algorithm False Alarm Reduction Development					
Title: ACERTS Detection		Articles:	3.014	-	-
			0		
Description: FY10-11: ACERTS - Initiate Change Detection Algorithm Development					
FY 2010 Accomplishments:					

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2010	FY 2011	FY 2012
FY10-11: ACERTS - Initiate Change Detection Algorithm Development				
Title: ACERTS Workstation Description: FY10-11: ACERTS - Initiate Next Generation Workstation (NGWS) FY 2010 Accomplishments: Initiate Next Generation Workstation (NGWS)		Articles: 1.055 0	-	-
Title: GVS4 Development Description: GVS4 Product Development FY 2010 Accomplishments: GVS4 Product Development FY 2011 Plans: Retroactive Contract Rate Adjustment		Articles: 11.044 0	15.667 0	-
Title: GVS4 Support Description: GVS4 Program Support FY 2010 Accomplishments: GVS4 Program Support FY 2011 Plans: GVS4 Program Support		Articles: 4.067 0	4.731 0	-
Title: GVS4 Testing and Evaluation Description: FY 2010- 2011 GVS4 Testing and Evaluation FY 2010 Accomplishments:		Articles: 1.030 0	0.605 0	-

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2010	FY 2011	FY 2012
FY 2010 GVS4 Test and Evaluation FY 2011 Plans: FY 2011 GVS4 Test and Evaluation				
Title: GVS4 Program Management Description: FY 2010 - 2011 GVS4 Program Management FY 2010 Accomplishments: FY 2010 GVS4 Program Management FY 2011 Plans: FY 2011 GVS4 Program Management		Articles: 1.630 0	1.631 0	-
Title: Military Working Dog Kit Development Description: FY 2011 Military Working Dog Kit Development FY 2011 Plans: FY 2011 Military Working Dog Kit Development FY 2012 Plans: FY 2012 Military Working Dog Kit Development		Articles: -	1.300 0	1.260
Title: Military Working Dog Program Management Description: FY 2011 Military Working Dog Program Management FY 2011 Plans: FY 2011 Military Working Dog Program Management FY 2012 Plans: FY 2012 Military Working Dog Program Management		Articles: -	0.250 0	0.250
Title: Military Working Dog Contractor Support		Articles: -	0.150 0	0.150

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2010	FY 2011	FY 2012
Description: FY2011: Military Working Dog Contractor Support FY 2011 Plans: FY2011: Military Working Dog Contractor Support FY 2012 Plans: FY2012: Military Working Dog Contractor Support				
Title: HMDS Contract Award Description: FY 2012 HMDS EMD Contract Award FY 2012 Plans: HMDS Source Selection and Contract Award		-	-	38.223
Title: VOSS MDD & Milestone C Description: VOSS MDD & Milestone C Preparation FY 2012 Plans: VOSS MDD & Milestone C		-	-	4.360
Title: EHP Description: FY 2012: EHP Roller Technology Insertion Contract Award FY 2012 Plans: EHP Roller Technology Insertion Contract Award		-	-	21.120
Title: RCIS Description: FY 2012: RCIS MDD, MS C Preparation FY 2012 Plans: RCIS MDD, MS C Preparation		-	-	5.364
Title: AMPS MDD and MS B Preparation Description: FY 2012: AMPS MDD and MS B Preparation FY 2012 Plans:		-	-	7.719

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)							FY 2010	FY 2011	FY 2012
AMPS MDD and MS B Preparation									
Accomplishments/Planned Programs Subtotals							31.952	36.272	78.446

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• PE 0603619A, Project 606: <i>Countermines/Barrier Advanced Dev</i>	29.399	15.596	35.383		35.383		26.067	29.219	26.504	Continuing	Continuing
• R68102: <i>GSTAMIDS</i>	318.968	35.002	20.678		20.678		31.810	26.442	28.250	Continuing	Continuing
• S11500: <i>ACERTS</i>	0.199									Continuing	Continuing
• MA7700: <i>Countermines Equipment, Less than \$5 Million</i>	4.008	3.655	7.352		7.352		7.613	7.261	6.500	Continuing	Continuing

D. Acquisition Strategy

The ACERTS competitively selected Prime System contractor was awarded Cost Plus Incentive Fee (CPIF) System Development and Demonstration (SDD) in FY03 after MDA Milestone B approval. GSV4 entered the SDD Phase in June 2004 with MDA approval of MS B and competitively awarded a SDD Cost Plus Fixed Fee (CPFF) contract. AMDS, HMDS, VOSS, RCIS, AMPS and MWD will all be competitively solicited and contract awards projected in FY 2012-2014. EHP Rollers technology insertion effort is intended to meet the Explosive Hazards Pre-detonation KSA and KPP requirements.

E. Performance Metrics

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army											DATE: February 2011		
APPROPRIATION/BUDGET ACTIVITY				R-1 ITEM NOMENCLATURE				PROJECT					
2040: Research, Development, Test & Evaluation, Army BA 5: Development & Demonstration (SDD)				PE 0604808A: Landmine Warfare/Barrier - Eng Dev				415: MINE NEUTRAL/DETECTION					
Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	Various	PM-CCS:Picatinny Arsenal, NJ	5.010	1.617		3.472		-		3.472	Continuing	Continuing	0.000
Program Management Contractor Support	PO	USFALCON:Fairfax, VA	8.374	1.600		2.010		-		2.010	Continuing	Continuing	0.000
Program Management Contractor Support	PO	TBD:TBD	-	-		1.106		-		1.106	Continuing	Continuing	0.000
Subtotal			13.384	3.217		6.588		-		6.588			0.000
Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
GSTAMIDS (GSV4)	C/CPFF	BAE Systems:Austin, TX	89.643	15.982		-		-		-	Continuing	Continuing	Continuing
ACERTS	C/CPIF	Northrop Grumman:Northrop Grumman	82.480	4.500		-		-		-	Continuing	Continuing	Continuing
MWD	TBD	TBD:TBD	-	1.300		-		-		-	Continuing	Continuing	Continuing
HMDS	TBD	TBD:TBD	-	-		31.123		-		31.123	Continuing	Continuing	Continuing
EHP Roller	TBD	TBD:TBD	-	-		17.120		-		17.120	Continuing	Continuing	Continuing
RCIS	TBD	TBD:TBD	-	-		4.675		-		4.675	Continuing	Continuing	Continuing
AMPS	TBD	TBD:TBD	-	-		6.017		-		6.017	Continuing	Continuing	Continuing
Subtotal			172.123	21.782		58.935		-		58.935			
Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
GSTAMIDS (GSV4)	MIPR	Various OGAs:Various OGAs	5.253	1.651		-		-		-	Continuing	Continuing	0.000

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army										DATE: February 2011			
APPROPRIATION/BUDGET ACTIVITY				R-1 ITEM NOMENCLATURE				PROJECT					
2040: Research, Development, Test & Evaluation, Army BA 5: Development & Demonstration (SDD)				PE 0604808A: Landmine Warfare/Barrier - Eng Dev				415: MINE NEUTRAL/DETECTION					
Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
GSTAMIDS (GSV4) Engineering Support	MIPR	NVESD/CECOM:FT Belvoir, VA	8.634	2.705		-		-		-	Continuing	Continuing	0.000
GSTAMIDS (GSV4) Support	PO	Various Contractors:Various Contractors	1.645	0.375		-		-		-	Continuing	Continuing	0.000
ACERTS Engineering Support	MIPR	NVESD/CECOM:Fort Belvoir, VA	6.687	1.887		-		-		-	Continuing	Continuing	0.000
ACERTS (Change Detection)	MIPR	NVESD/CECOM:Fort Belvoir, VA	-	2.000		-		-		-	Continuing	Continuing	0.000
ACERTS Support	Various	Various Contractors:Various Contractors	0.903	1.500		-		-		-	Continuing	Continuing	0.000
HMDS	MIPR	NVESD/CECOM:Fort Belvoir, VA	-	-		2.600		-		2.600	Continuing	Continuing	0.000
EHP Roller	MIPR	ARDEC:Picatinny Arsenal, NJ	-	-		2.500		-		2.500	Continuing	Continuing	0.000
VOSS	MIPR	NVESD/CECOM:Fort Belvoir, VA	-	-		3.690		-		3.690	Continuing	Continuing	0.000
RCIS	MIPR	Various OGAs:Various OGAs	-	-		0.350		-		0.350	Continuing	Continuing	0.000
AMPS	MIPR	Various OGAs:Various OGAs	-	-		0.772		-		0.772	Continuing	Continuing	0.000
Subtotal			23.122	10.118		9.912		-		9.912			0.000
Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
GSV4 Test Support	MIPR	ATEC:Alexandria, VA	2.277	0.605		-		-		-	Continuing	Continuing	0.000
ACERTS	MIPR	ATEC:Alexandria, VA	5.224	0.500		-		-		-	Continuing	Continuing	0.000
MWD	MIPR	ATEC:Alexandria, VA	-	0.050		-		-		-	0.000	0.050	0.000

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army										DATE: February 2011			
APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 5: Development & Demonstration (SDD)				R-1 ITEM NOMENCLATURE PE 0604808A: Landmine Warfare/Barrier - Eng Dev				PROJECT 415: MINE NEUTRAL/DETECTION					
Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
HMDS	MIPR	ATEC:Alexandria, VA	-	-		1.500		-		1.500	0.000	1.500	0.000
EHP Roller	MIPR	ATEC:Alexandria, VA	-	-		1.000		-		1.000	0.000	1.000	0.000
RCIS	MIPR	ATEC:Alexandria, VA	-	-		0.136		-		0.136	0.000	0.136	0.000
AMPS	MIPR	ATEC:Alexandria, VA	-	-		0.375		-		0.375	0.000	0.375	0.000
Subtotal			7.501	1.155		3.011		-		3.011			0.000
			Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			216.130	36.272		78.446		-		78.446			
Remarks													

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Army			DATE: February 2011		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>		R-1 ITEM NOMENCLATURE PE 0604808A: <i>Landmine Warfare/Barrier - Eng Dev</i>		PROJECT 415: <i>MINE NEUTRAL/DETECTION</i>	

	FY 2010				FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Contracting Testing																												
GSV4 Retroactive Rate Adjustment																												
ACERTS Retroactive Rate Adjustment																												
HMDS Material Development Decision (MDD)																												
HMDS Milestone C																												
HMDS Low Rate Initial Production (LRIP)																												
HMDS Full Rate Production (FRP) Decision																												
EHP Roller Material Development Decision (MDD)																												
EHP Roller Milestone C																												
EHP Roller Low Rate Initial Production (LRIP)																												
EHP Roller Full Rate Production (FRP) Decision																												
VOSS Material Development Decision (MDD)																												
VOSS Milestone C																												
VOSS Low Rate Initial Production (LRIP)																												
VOSS Full Rate Production (FRP) Decision																												
RCIS Material Development Decision (MDD)																												
RCIS Milestone C																												
RCIS Low Rate Initial Production (LRIP)																												
RCIS Full Rate Production (FRP) Decision																												
AMPS Milestone C																												
AMPS Low Rate Initial Production (LRIP)																												
AMPS Full Rate Production (FRP) Decision																												

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Army												DATE: February 2011			
APPROPRIATION/BUDGET ACTIVITY						R-1 ITEM NOMENCLATURE						PROJECT			
2040: Research, Development, Test & Evaluation, Army						PE 0604808A: Landmine Warfare/Barrier - Eng						415: MINE NEUTRAL/DETECTION			
BA 5: Development & Demonstration (SDD)						Dev									

	FY 2010				FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Milestone B																												
Critical Design Review																												
AMDS Milestone C																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604808A: <i>Landmine Warfare/Barrier - Eng</i> <i>Dev</i>	PROJECT 415: <i>MINE NEUTRAL/DETECTION</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Contracting Testing	4	2010	4	2010
GSV4 Retroactive Rate Adjustment	4	2010	3	2011
ACERTS Retroactive Rate Adjustment	4	2010	3	2011
HMDS Material Development Decision (MDD)	1	2011	1	2011
HMDS Milestone C	3	2014	3	2014
HMDS Low Rate Initial Production (LRIP)	1	2015	1	2015
HMDS Full Rate Production (FRP) Decision	1	2016	1	2016
EHP Roller Material Development Decision (MDD)	2	2011	2	2011
EHP Roller Milestone C	3	2013	3	2013
EHP Roller Low Rate Initial Production (LRIP)	3	2013	3	2014
EHP Roller Full Rate Production (FRP) Decision	2	2014	2	2014
VOSS Material Development Decision (MDD)	4	2011	4	2011
VOSS Milestone C	2	2013	2	2013
VOSS Low Rate Initial Production (LRIP)	3	2013	4	2013
VOSS Full Rate Production (FRP) Decision	1	2014	1	2014
RCIS Material Development Decision (MDD)	1	2011	1	2011
RCIS Milestone C	1	2012	1	2012
RCIS Low Rate Initial Production (LRIP)	2	2012	4	2013
RCIS Full Rate Production (FRP) Decision	4	2013	4	2013
AMPS Milestone C	3	2013	3	2013
AMPS Low Rate Initial Production (LRIP)	4	2013	1	2014
AMPS Full Rate Production (FRP) Decision	4	2014	1	2015

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604808A: <i>Landmine Warfare/Barrier - Eng</i> <i>Dev</i>	PROJECT 415: <i>MINE NEUTRAL/DETECTION</i>	

Events	Start		End	
	Quarter	Year	Quarter	Year
Milestone B	3	2012	3	2012
Critical Design Review	1	2014	1	2014
AMDS Milestone C	3	2015	3	2015

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Army								DATE: February 2011			
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>				R-1 ITEM NOMENCLATURE PE 0604808A: <i>Landmine Warfare/Barrier - Eng Dev</i>				PROJECT 434: <i>ANTI-PERSONNEL LANDMINE ALTERNATIVES (NSD)</i>			
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
434: <i>ANTI-PERSONNEL LANDMINE ALTERNATIVES (NSD)</i>	-	-	8.968	-	8.968	13.958	14.879	6.887	-	0.000	44.692
Quantity of RDT&E Articles											
A. Mission Description and Budget Item Justification											
<p>Develop Spider Networked Munitions (NM) Increment 2 capabilities to provide an improved NM Controller and the ability to employ and control fielded Army common Anti-Personnel (AP) and Anti-Vehicle (AV) lethal and non-lethal munitions and effects. The Spider Increment 2 program is the recipient of the transferred anti-vehicle landmine alternative mission from the Intelligent Munitions System called Scorpion program. Scorpion is being closed out due to affordability. Spider Increment 2 will build on the existing Spider system and develop the capability to initiate existing anti-vehicle munitions from the enhanced Spider Controller.</p> <p>Develop a field-deployable munitions control capability that provides initiation capability of legacy AP and AV lethal and non-lethal munitions against the current threat, and allows for control of either COTS/GOTS and/or future AV munitions development to utilize this controller.</p> <p>The Spider is a hand emplaced, remotely controlled, anti-personnel (Man-In-The-Loop) and anti-vehicle munition system. The system is made up of 4 subsystems: Remote Control Station (the system command and control station), Repeater (a communication link to the munitions that provides extended range), and Munition Control Units (delivers anti-personnel & anti-vehicle effects). Missions include force protection, shaping the battlefield, provide warning, delay enemy forces and attrit enemy forces. The Spider is designed to mitigate the indiscriminate engagement of the lethal mechanism. A Soldier/Marine makes a conscious decision to engage a target with the lethal and/or a non-lethal mechanism. The envisioned obstacle can be either a permanent obstacle or a temporary obstacle intended to be reused in other locations, such as forward airbases.</p>											
B. Accomplishments/Planned Programs (\$ in Millions)								FY 2010	FY 2011	FY 2012	
Title: Controller & Interface Box Development - Contract								-	-	5.750	
Description: NM Increment 2 Controller and ability to employ/control AP & AV											
FY 2012 Plans: FY12 Controller & Interface Box Development											
Title: Engineering Support								-	-	2.718	
Description: Perform engineering support.											
FY 2012 Plans:											

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Army							DATE: February 2011				
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>			R-1 ITEM NOMENCLATURE PE 0604808A: <i>Landmine Warfare/Barrier - Eng Dev</i>			PROJECT 434: <i>ANTI-PERSONNEL LANDMINE ALTERNATIVES (NSD)</i>					
B. Accomplishments/Planned Programs (\$ in Millions)							FY 2010	FY 2011	FY 2012		
Provide Spider Networked Munitions (NM) Increment 2 engineering support.											
Title: PM & Support							-	-	0.500		
Description: Program Management and support											
FY 2012 Plans: Program Management and support Spider Networked Munitions (NM) Increment 2.											
Accomplishments/Planned Programs Subtotals							-	-	8.968		
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• PAA E91700: <i>PAA Spider Basic Program</i>	48.213	24.383	43.123		43.123					0.000	129.836
• OPA2 B55501: <i>OPA2 Spider - APLA Remote Control Unit</i>	21.753	8.127	36.217		36.217		4.473	6.493	6.720	0.000	114.629
D. Acquisition Strategy											
Full and open competition will be considered for the Spider Increment 2 Networked Munitions Controller and Interface Box for the Engineering Manufacturing Development (EMD) efforts of this program. Conduct a detailed assessment that identifies the recommended path forward for the Spider Increment 2 Networked Munitions controller, software architecture, operating system, and the recommended safety approach. Develop a field-deployable munitions control capability that provides initiation capability of legacy AV munitions against the current threat, and allows for control of either COTS/GOTS and/or future AV munitions development to utilize this controller.											
E. Performance Metrics											
Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army											DATE: February 2011			
APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 5: Development & Demonstration (SDD)				R-1 ITEM NOMENCLATURE PE 0604808A: Landmine Warfare/Barrier - Eng Dev				PROJECT 434: ANTI-PERSONNEL LANDMINE ALTERNATIVES (NSD)						
Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
Spider - Program Mgmt	Various	PM-CCS:Picatinny Arsenal, NJ	2.922	-		0.500		-		0.500	Continuing	Continuing	0.000	
Subtotal			2.922	-		0.500		-		0.500			0.000	
Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
Spider SDD	C/CPIF	Alliant Tech Systems / TEXTRON:Plymouth, MN/Wilmington, MA	1.432	-		-		-		-	Continuing	Continuing	0.000	
Spider EMD	C/CPIF	TBD:TBD	-	-		5.500		-		5.500	0.000	5.500	0.000	
Mitre provide C4 support	MIPR	Mitre:McLean, VA	0.100	-		0.250		-		0.250	Continuing	Continuing	0.000	
Subtotal			1.532	-		5.750		-		5.750			0.000	
Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
Spider - Eng support	MIPR	TACOM/ ARDEC:Warren, MI/ Picatinny Arsenal, NJ	12.957	-		1.500		-		1.500	Continuing	Continuing	0.000	
Spider - Eng support	MIPR	Various:Various	5.262	-		1.018		-		1.018	Continuing	Continuing	0.000	
Spider - Eng support	Various	BRTRC, CORBETT:Various	2.352	-		0.200		-		0.200	Continuing	Continuing	0.000	
Subtotal			20.571	-		2.718		-		2.718			0.000	

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army											DATE: February 2011		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>				R-1 ITEM NOMENCLATURE PE 0604808A: <i>Landmine Warfare/Barrier - Eng Dev</i>				PROJECT 434: <i>ANTI-PERSONNEL LANDMINE ALTERNATIVES (NSD)</i>					

Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Spider -Test and Evaluation	TBD	Army Evaluation Center:FT Benning, GA/YUMA, AZ	10.406	-		-		-		-	Continuing	Continuing	0.000
Subtotal			10.406	-		-		-		-			0.000

Remarks Not Applicable													
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	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	35.431	-		8.968		-		8.968			0.000

Remarks											
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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Army			DATE: February 2011		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>		R-1 ITEM NOMENCLATURE PE 0604808A: <i>Landmine Warfare/Barrier - Eng Dev</i>		PROJECT 434: <i>ANTI-PERSONNEL LANDMINE ALTERNATIVES (NSD)</i>	

	FY 2010				FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Control Station & MCB Development																												
Contractor / Government DT																												
LUT																												
PVT																												
Initial Operational Test																												
MS C/ LRIP Decision																												
Full Rate Production Decision																												
Initial Operational Capability																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604808A: <i>Landmine Warfare/Barrier - Eng Dev</i>	PROJECT 434: <i>ANTI-PERSONNEL LANDMINE ALTERNATIVES (NSD)</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Control Station & MCB Development	2	2012	3	2014
Contractor / Government DT	4	2013	2	2014
LUT	2	2014	2	2014
PVT	4	2014	4	2014
Initial Operational Test	1	2015	1	2015
MS C/ LRIP Decision	3	2014	3	2014
Full Rate Production Decision	3	2015	3	2015
Initial Operational Capability	4	2015	4	2015