Exhibit R-2, RDT&E Budget Item Justification							Date: February 2002	
APPROPRIATION/BUDGET ACTIVITY RESEARCH, DEVELOPMENT, TEST & EVALUATION, DEFENSE-WIDE, BUDGET ACTIVITY 5					R-1 ITEM NOMENCLATURE JOINT ROBOTICS PROGRAM PE 0604709D8Z			
COST ($ in Millions)	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete
Total PE Cost	14.915	15.003	13.643	13.873	14.114	14.418	14.700	Continuing
SRS	4.000	3.600	3.274	3.330	3.380	3.460	3.530	Continuing
RCSS	6.915	4.303	3.915	3.980	4.054	4.138	4.220	Continuing
MDARS-I	4.000	3.400	3.090	3.143	3.200	3.270	3.330	Continuing
MDARS-E	0.000	3.700	3.364	3.420	3.480	3.550	3.620	Continuing

A. Mission Description and Budget Item Justification. This program is a budget activity level 5 based on the successful transition of robotic technologies from Concept and Technology Development activities to System Development and Demonstration (SDD) as part of an Evolutionary Strategy. This PE was established in response to Office of the Secretary of Defense (OSD) and Service agreement at the April 1997 Joint Robotics Program General Officer Steering Committee (GOSC). The agreement was to have OSD retain oversight of DoD robotics programs through SDD formerly Engineering, Manufacturing and Development (EMD). Individual Services are responsible for requirements generation and procurement funding. Within the JRP, emphasis is on the development of robotic technologies that are usable in multi-service missions; provide capability in hazardous environments; provide improved battlefield efficiency using supervised autonomous operational capability; reduce or enhance force manpower and sustainability; and are affordable. Success has been achieved in four programs to justify SDD at this time. This PE establishes the consolidated DoD robotics program for Unmanned Ground Vehicles (UGV) and advances UGV concepts into SDD for (1) the Standardized Robotic System (SRS) – a generic, modular set of robotic systems that can be used to retrofit several different types of currently fielded vehicles to allow remote obstacle breaching operations (minefields, earthworks, bunkers, etc.), and have supported operations in Bosnia and Kosovo; (2) the Robotic Combat Support System (RCSS) – capable of neutralizing anti-personnel mines, breaching wire obstacles and delivery of smoke or obscurants with P3I upgrades such as manipulator arm, semi-autonomous/autonomous control; (3) the Mobile Detection Assessment Response System, Interior (MDARS-I) – to provide physical security inside warehouses of fixed installations and large storage facilities, protection of critical inventory items and track movement of items in warehouses and ammunition storage facilities; and (4) the Mobile Detection Assessment Response System, Exterior (MDARS-E) – to provide unmanned roving security patrols among buildings and around the perimeter of large fixed installations.

B. Program Change Summary ($ million)

	FY2001	FY2002	FY2003
FY2001Previous President's Budget	11.553	13.197	13.590
FY2002 Amended Budget	15.053	15.197	13.643
Appropriated Value			
Adjustments to Appropriated Value			
a. Congressionally Directed Appropriation Reduction			
b. Congressionally Directed Undistributed Reduction	(0.105)	(.194)	
c. OSD Directed Program Reduction/Increase	(0.033)		
Current Budget Submit/President's Budget	14.915	15.003	13.643

Exhibit R-2, RDT&E Budget Item Justification	Date: February 2002
APPROPRIATION/BUDGET ACTIVITY RESEARCH, DEVELOPMENT, TEST & EVALUATION, DEFENSE-WIDE, BUDGET ACTIVITY 5	R-1 ITEM NOMENCLATURE JOINT ROBOTICS PROGRAM PE 0604709D8Z

Change Summary Explanation:
Funding: FY 2000-2001 inflationary savings
Schedule: N/A
Technical: N/A

C. Other Program Funding Summary
Not Applicable.

D. Execution
- Science & Engineering Services, Inc. (SESI), in Radcliff, Kentucky for RCSS. (3.579 Million)
- Mesa Associates, Inc., in Huntsville, Alabama for RCSS. (1.778 Million)

Exhibit R-2a, RDT&E Project Justification							Date: February 2002	
APPROPRIATION/BUDGET ACTIVITY RDT&E, DEFENSE WIDE, BUDGET ACTIVITY 5	PROGRAM ELEMENT PE 0604709D8Z				PROJECT/THRUST NAME AND NUMBER STANDARD ROBOTICS SYSTEM (SRS)			
Cost ($ in Millions)	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete
SRS	4.000	3.600	3.274	3.330	3.380	3.460	3.530	Continuing

A. Mission Description and Budget Item Justification. The Standardized Robotic System (SRS) program is a generic and modular robotic system that can be retrofitted to many different military applications and vehicles. Currently, the SRS system is being built for three different engineer dozers (D7G, T3 and DEUCE) to allow remote obstacle breeching operations (minefields, earthworks, bunkers and obstacles such as clearing of rubble in a MOUT environment or a man-made obstacle covered by enemy fire). The Joint Project Office continues to support six Panther (contingency systems) in Bosnia and Kosovo that have cleared over 500 mines and submunitions. Panther is a M60 tank chassis with SRS system and mine rollers used to proof roads or fields for mines. The U.S. Army approved the Operational Requirements Document (ORD) in September 1997.

(U) FY 2001 Accomplishments

- Continued support for the M60 Panther in the Balkans.
- Finalized design and completed most testing of the SRS system for the Abrams Panther (M1A1).
- Conducted engineering and program management support for SRS system development.
- Began development of government SRS engineering support and depot repair capability.

(U) FY 2002 Plans

- Continue support of the M60 Panthers and develop strategy to replace the M60 Panther with the Abrams Panther in Bosnia and Kosovo.
- Field Abrams Panthers in the Balkans and complete production of spare systems.
- Finalize government engineering, software and depot support capability.
- Begin development of robotic capability for the USMC Assault Breacher Vehicle (ABU), M56 Coyote Smoke Obscuration System, and Ground Standoff Mine Detection System Block 0 (GSTAMIDS0).
- Develop new SRS acquisition strategy and begin execution.
- Start SRS SDD activity for the design, manufacture, and delivery of engineering prototypes for DEUCE.
- Begin planning for DT/OT.

(U) FY 2003 Plans

- Engineering and program management support for SRS system development.
- Continue SRS SDD activity for the design, manufacture, and deliver of engineering prototypes for DEUCE.
- Begin Developmental Test for SDD.
- Begin Production of SRS contingency kits for GSTAMIDS0.

B. Other Program Funding Summary

Exhibit R-2a, RDT&E Project Justification	Date: February 2002
Not Applicable.	

Exhibit R-3 Cost Analysis (page 1)							Date:	February-2002				
DEFENSE-WIDE BUDGET ACTIVITY 5		Program Element PE 0604709D8Z					SRS					
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total 2001 Cost	2002 Cost	2002 Award Date	2003 Cost	2003 Award Date	2004 Cost	2004 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development			2.500	1.800		2.339		2.461				
Ancilliary Hardware Development												
Systems Engineering			0.500	0.600		0.390		0.362				
Licenses												
Tooling												
GFE												
Award Fees												
Subtotal Product Development			3.000	2.400		2.729		2.823				
Remarks:												
Development Support			0.200	0.240		0.156		0.145				
Software Development			0.500	0.600		0.233		0.218				
Training Development												
Integrated Logistics Support			0.150	0.180		0.078		0.072				
Configuration Management			0.150	0.180		0.078		0.072				
Technical Data												
GFE												
Subtotal Support			1.000	1.200		0.545		0.507				
Remarks:												

Exhibit R-3 Cost Analysis (page 2)							Date:	February-2002				
DEFENSE-WIDE BUDGET ACTIVITY 5		Program Element PE 0604709D8Z					SRS					
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total 2001 Cost	2002 Cost	2002 Award Date	2003 Cost	2003 Award Date	2004 Cost	2004 Award Date	Cost To Complete	Total Cost	Target Value of Contract
DT												
IOT&E												
Subtotal T&E			0.000	0.000		0.000		0.000				
Remarks:												
Contractor Engineering Support												
Government Engineering Support												
Program Management Support												
Program Management Personnel												
Travel												
Labor (Research Personnel)												
Miscellaneous												
Subtotal Management			0.000	0.000		0.000		0.000				
Remarks:												
Total Cost			4.000	3.600		3.274		3.330				
Remarks:												

Exhibit R-2a, RDT&E Project Justification							Date: February 2002	
APPROPRIATION/BUDGET ACTIVITY RDT&E, DEFENSE WIDE, BUDGET ACTIVITY 5	PROGRAM ELEMENT PE 0604709D8Z				PROJECT/THRUST NAME AND NUMBER ROBOTIC COMBAT SUPPORT SYSTEM (RCSS)			
Cost ($ in Millions)	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete
RCSS	6.915	4.303	3.915	3.980	4.054	4.138	4.220	Continuing

A. Mission Description and Budget Item Justification. The Robotic Combat Support System (RCSS) Program is an upgrade approach from the Product Improved Mini-Flail (PIMF). The PIMF has proven effective in Bosnia and Kosovo as a contingency asset. RCSS threshold requirements include anti-personnel mine clearing and neutralization, improved reliability and human-machine interface, Anti-Personnel wire obstacle breaching, remotely deployed smoke and obscurants, and the capability to carry soldier loads. P3I requirements include advanced controls, remotely delivered special munitions to support dismounted operations, hands-free control using dismounted soldier leader-follower technology, and mechanical devices that will be used to emplace demolitions and special breeching systems. A Mission Need Statement (MNS) and an Operational Requirements Document (ORD) have been approved by Army Training and Doctrine Command (TRADOC).

(U) FY 2001 Accomplishments
- Completed Milestone I for RCSS.
- Issued Request for Proposal (RFP) for competitive procurement.
- Established Source Selection Evaluation Board for competitive procurement.
- Received solicitations in response to RFP.
- Evaluated contractors' proposals.
- Executed Concept and Technology Development contract.

(U) FY 2002 Plans
- Start Initial Verification Testing (IVT) on systems delivered under Concept and Technology Development phase.
- Complete Milestone B.

(U) FY 2003 Plans
- Award SDD contract.
- Begin developmental testing on RCSS systems developed under SDD contract.

B. Other Program Funding Summary
Not Applicable.

Exhibit R-3 Cost Analysis (page 1)							Date:	February-2002				
DEFENSE-WIDE BUDGET ACTIVITY 5		Program Element PE 0604709D8Z					RCSS					
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total 2001 Cost	2002 Cost	2002 Award Date	2003 Cost	2003 Award Date	2004 Cost	2004 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development	CPFF		4.648			1.012		0.729				
Ancilliary Hardware Development												
Systems Engineering			1.000	2.289		0.225		0.252				
Licenses												
Tooling			0.100			0.225		0.252				
GFE												
Award Fees												
Subtotal Product Development			5.748	2.289		1.462		1.233				
Remarks:												
Development Support			0.100	0.513		0.225		0.252				
Software Development			0.100	0.126		0.112		0.126				
Training Development			0.100			0.225		0.252				
Integrated Logistics Support			0.100			0.225		0.252				
Configuration Management			0.100			0.225		0.252				
Technical Data												
GFE												
Subtotal Support			0.500	0.639		1.012		1.134				
Remarks:												

Exhibit R-3 Cost Analysis (page 2)							Date:	February-2002				
DEFENSE-WIDE BUDGET ACTIVITY 5			Program Element PE 0604709D8Z				RCSS					
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total 2001 Cost	2002 Cost	2002 Award Date	2003 Cost	2003 Award Date	2004 Cost	2004 Award Date	Cost To Complete	Total Cost	Target Value of Contract
DT						0.394		0.441				
IOT&E												
Initial Verification Testing			0.267	0.274								
Subtotal T&E			0.267	0.274		0.394		0.441				
Remarks:												
Contractor Engineering Support			0.100	0.076		0.337		0.378				
Government Engineering Support			0.100	1.025		0.337		0.378				
Program Management Support			0.200			0.373		0.416				
Program Management Personnel												
Travel												
Labor (Research Personnel)												
Miscellaneous												
Subtotal Management			0.400	1.101		1.047		1.172				
Remarks:												
Total Cost			6.915	4.303		3.915		3.980				
Remarks:												

Exhibit R-2a, RDT&E Project Justification							Date: February 2002	
APPROPRIATION/BUDGET ACTIVITY RDT&E, DEFENSE WIDE, BUDGET ACTIVITY 5	PROGRAM ELEMENT PE 0604709D8Z				PROJECT/THRUST NAME AND NUMBER MOBILE DETECTION ASSESSMENT RESPONSE SYSTEM – INTERIOR (MDARS-I)			
Cost ($ in Millions)	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete
MDARS-I	4.000	3.400	3.090	3.143	3.200	3.270	3.330	Continuing

A. Mission Description and Budget Item Justification. The Mobile Detection Assessment Response System – Interior (MDARS-I) will provide commanders at Army, Air Force, Navy, and Defense Logistics Agency (DLA) facilities with an electro-mechanical capability to conduct semi-autonomous, random patrols and surveillance activities, including product assessment and theft detection fuctions. MDARS-I can be used in a variety of U.S. Army Installations: warehouses, office buildings, and hospitals. This system will randomly navigate building interiors, perform intrusion detection, inventory assessment, visual assessment, and audio response. Enhanced capabilities include detection on the move and the employment of response delay devices and the integration of fixed sensors and mobile platforms into a single system.

(U) FY 2001 Accomplishments
- Conducted Production Qualification Testing (PQT) II.
- Conducted Limited User Test (LUT).
- Conducted Logistics Demonstration.

(U) FY 2002 Plans
- Conduct Milestone C IPR for Low Rate Initial Production (LRIP) decision.
- Exercise Contract Option for LRIP.
- Initiate Pre-Planned Product Improvement (P3I) effort.

(U) FY 2003 Plans
- Continue P3I effort.

B. Other Program Funding Summary
Not Applicable.

Exhibit R-3 Cost Analysis (page 1)							Date:	February-2002				
DEFENSE-WIDE		Program Element					MDARS-I					
BUDGET ACTIVITY 5		PE 0604709D8Z										
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total 2001 Cost	2002 Cost	2002 Award Date	2003 Cost	2003 Award Date	2004 Cost	2004 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development			1.000	0.680								
Ancilliary Hardware Development			0.200									
Systems Engineering			0.200	0.453		1.340		1.347				
Licenses												
Tooling												
GFE												
Award Fees												
Subtotal Product Development			1.400	1.133		1.340		1.347				
Remarks:												
Development Support			0.100	0.289								
Software Development			0.150	0.227		0.436		0.633				
Training Development			0.100	0.170								
Integrated Logistics Support			0.100	0.334								
Configuration Management			0.200	0.397								
Technical Data			0.100									
GFE												
Subtotal Support			0.750	1.417		0.436		0.633				
Remarks:												

Exhibit R-3 Cost Analysis (page 2)							Date:	February-2002				
DEFENSE-WIDE BUDGET ACTIVITY 5			Program Element PE 0604709D8Z				MDARS-I					
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total 2001 Cost	2002 Cost	2002 Award Date	2003 Cost	2003 Award Date	2004 Cost	2004 Award Date	Cost To Complete	Total Cost	Target Value of Contract
DT			0.650	0.340		0.412						
IOT&E			0.750					0.449				
Subtotal T&E			1.400	0.340		0.412		0.449				
Remarks:												
Contractor Engineering Support			0.100	0.170								
Government Engineering Support			0.150	0.170		0.902		0.714				
Program Management Support			0.200	0.170								
Program Management Personnel												
Travel												
Labor (Research Personnel)												
Miscellaneous												
Subtotal Management			0.450	0.510		0.902		0.714				
Remarks:												
Total Cost			4.000	3.400		3.090		3.143				

Exhibit R-2a, RDT&E Project Justification							Date: February 2002	
APPROPRIATION/BUDGET ACTIVITY RDT&E, DEFENSE WIDE, BUDGET ACTIVITY 5	PROGRAM ELEMENT PE 0604709D8Z				PROJECT/THRUST NAME AND NUMBER MOBILE DETECTION ASSESSMENT RESPONSE SYSTEM – EXTERIOR (MDARS-E)			
Cost ($ in Millions)	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete
MDARS-E	0.000	3.700	3.364	3.420	3.480	3.550	3.620	Continuing

A. Mission Description and Budget Item Justification. The Mobile Detection Assessment Response System – Exterior (MDARS-E) will provide commanders at Army, Air Force, Navy, and Defense Logistics Agency (DLA) facilities with the capability to conduct semi-autonomous, random patrols and surveillance activities, including barrier assessment and theft detection functions. MDARS-E can be used in a variety of applications: general storage yards; depots; Arms, Ammunition, and Explosives (AA&E) storage areas; air fields; railyards; and port facilities. The MDARS-E will autonomously conduct surveillance activities checking for intruders, conducting lock interrogations, and assessing the status of facility barriers, such as doors of AA&E storage bunkers. Uses include the detection of unauthorized personnel, verification of barrier and product status, and the remote investigation of an alarm source.

(U) FY 2001 Accomplishments
- No System Development and Demonstration (SDD) funding this fiscal year.

(U) FY 2002 Plans
- Award SDD Contract.
- Conduct Customer Test (DT).
- Monitor the SDD Hardware Contract.

(U) FY 2003 Plans
- Continue to monitor SDD Hardware Contract.

B. Other Program Funding Summary
Not Applicable.

Exhibit R-3 Cost Analysis (page 1)							Date:	February-2002				
DEFENSE-WIDE BUDGET ACTIVITY 5		Program Element PE 0604709D8Z					MDARS-E					
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total 2001 Cost	2002 Cost	2002 Award Date	2003 Cost	2003 Award Date	2004 Cost	2004 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development				0.863								
Ancilliary Hardware Development				0.123								
Systems Engineering				0.493		1.458		1.252				
Licenses												
Tooling												
GFE												
Award Fees												
Subtotal Product Development				1.479		1.458		1.252				
Remarks:												
Development Support				0.062				0.083				
Software Development				0.555		0.474		0.520				
Training Development				0.123				0.083				
Integrated Logistics Support				0.247				0.167				
Configuration Management				0.123				0.083				
Technical Data												
GFE												
Subtotal Support				1.110		0.474		0.936				
Remarks:												

Exhibit R-3 Cost Analysis (page 2)							Date:	February-2002				
DEFENSE-WIDE BUDGET ACTIVITY 5		Program Element PE 0604709D8Z					MDARS-E					
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total 2001 Cost	2002 Cost	2002 Award Date	2003 Cost	2003 Award Date	2004 Cost	2004 Award Date	Cost To Complete	Total Cost	Target Value of Contract
DT						0.617						
IOT&E								0.500				
Customer Test				0.493								
Subtotal T&E				0.493		0.617		0.500				
Remarks:												
Contractor Engineering Support				0.247								
Government Engineering Support				0.124		0.815		0.732				
Program Management Support				0.247								
Program Management Personnel												
Travel												
Labor (Research Personnel)												
Miscellaneous												
Subtotal Management				0.618		0.815		0.732				
Remarks:												
Total Cost				3.700		3.364		3.420				
Remarks:												