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Exhibit R-2, RDT&E Budget Item Justification							Date: June 2001			
APPROPRIATION/BUDGET ACTIVITY				R-1 ITEM NOMENCLATURE						
RESEARCH, DEVELOPMENT, TEST & EVALUATION, DEFENSE-WIDE, BUDGET ACTIVITY 5				JOINT ROBOTICS PROGRAM PE 0604709D8Z						
COST (\$ in Millions)	FY 2000	FY 2001	FY 2002						Cost to Complete	Total Cost
Total PE Cost	14.545	14.915	13.197						N/A	CONTINUING
SRS	9.545	4.000	3.000						N/A	CONTINUING
RCSS	3.000	6.915	4.197						N/A	CONTINUING
MDARS-I	2.000	4.000	3.000						N/A	CONTINUING
MDARS-E	0.000	0.000	3.000						N/A	CONTINUING
<p>A. <u>Mission Description and Budget Item Justification.</u> This program is a budget activity level 5 based on the successful transition of robotic technologies from Program Definition and Risk Reduction (PDRR) activities to Engineering, Manufacturing and Development (EMD). 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 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 EMD at this time. This PE establishes the consolidated DoD robotics program for Unmanned Ground Vehicles (UGV) and advances UGV concepts into EMD for (1) the Standardized Robotic System (SRS) - a generic, modular set of kits 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) - a mine neutralizing capability/wire breaching and smoke obscurant system with P3I upgrades such as manipulator arm, semi-autonomous/autonomous control; (3) the Mobile Detection Assessment Response System, Interior (MDARS-I) - which will 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)- which is intended to provide unmanned roving security patrols among buildings and around perimeters of large fixed installations.</p>										

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B. <u>Program Change Summary</u> (\$ million)				
	<u>FY2000</u>	<u>FY2001</u>	<u>FY2002</u>	<u>Total Cost</u>
Previous President's Budget Submit	12.004	11.553	13.123	Cont
Appropriated Value	15.004	15.053		
Adjustments to Appropriated Value				
a. Congressionally Directed Appropriation Reduction				
b. Congressionally Directed Undistributed Reduction		(0.105)		
c. Program Reduction/Increase	(0.459)	(0.033)	0.074	
Current Budget Submit/President's Budget	14.545	14.915	13.197	Cont
Change Summary Explanation:				
Funding:	FY 2000-2001 inflationary savings; FY 2000 government-wide rescission			
Schedule:	N/A			
Technical:	N/A			
C. <u>Other Program Funding Summary</u>				
D. <u>Acquisition Strategy</u>				
E. <u>Schedule Profile</u>				
Fiscal Year actual and planned events:				
	FY2000	FY2001	FY2002	
Acquisition Milestones				
MDARS-I			S-IPR	
RCSS		MS A	MS B	
MDARS-E			SDD	
Engineering Milestones				

Exhibit R-2, RDT&E Budget Item Justification		Date: June 2001		
	FY2000	FY2001	FY2002	
T&E Milestones				
MDARS-I		LUT		
MDARS-E			DT	
RCSS			IVT	
SRS			DT/OT	
Contract Milestones				
MDARS-I			LRIP	
RCSS		PDRR		

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Exhibit R-2, RDT&E Budget Item Justification	Date: June 2001

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Exhibit R-2a, RDT&E Project Justification								Date:	
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT		PROJECT NAME AND NUMBER				
RDT&E, DEFENSE WIDE, BUDGET ACTIVITY 5			PE 0604709D8Z		Standard Robotics System (SRS)				
Cost (\$ in Millions)	FY 2000	FY 2001	FY 2002					Cost to Complete	Total Cost
SRS	9.545	4.000	3.000					N/A	CONT
RDT&E Articles Qty									
<p>A. <u>Mission Description and Budget Item Justification</u> 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 MK IV SRS is being built for three different engineer dozers (D7G, T3 and DEUCE) to allow remote obstacle breaching 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 prototype systems in Bosnia and Kosovo that have cleared over 500 mines and sub munitions. The US Army approved the Operational Requirements Document (ORD) in September 1997.</p> <p>(U) <u>FY 2000 Accomplishments</u></p> <ul style="list-style-type: none"> • Executed SRS EMD contract effort for the design, manufacture and delivery of engineering prototype kits (D7G, T3 Dozer, DEUCE) for Developmental Testing (DT) and Operational Testing (OT). • Conducted engineering and program management support for the SRS kit development. • Built and started integration of the engineering prototype on the D7G dozer. • Built and integrated a SRS kit on the M1A1 chassis, which will replace the M60 Panther systems in the Balkans. • Integrated the SRS onto the T3 dozer, which participated in the Joint Contingency Force Army. Warfighting Experiment at Ft. Polk, LA, conducting an obstacle reduction mission in a MOUT environment. • Developed an SRS kit for the Interim Vehicle Mounted Mine Detector (IVMMD) program and completed user testing at Aberdeen Proving Ground, MD. <p>(U) <u>FY 2001 Plans</u></p> <ul style="list-style-type: none"> • Continue SRS EMD effort for the design, manufacture and delivery of engineering prototypes. • Engineering and program management support for the SRS kit development. • Complete testing and field the Abrams Panther prototype system (M1A1 chassis) in the Balkans to replace the M60 Panther. 									

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Exhibit R-2a, RDT&E Project Justification								Date:	
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER			
EMD, DEFENSE WIDE, BUDGET ACTIVITY 5			PE 0604709D8Z			ROBOTIC COMBAT SUPPORT SYSTEM (RCSS)			
Cost (\$ in Millions)	FY 2000	FY 2001	FY 2002					Cost to Complete	Total Cost
RCSS	3.000	6.915	4.197					N/A	CONT
<p>A. <u>Mission Description and Budget Item Justification.</u> The Robotic Combat Support System (RCSS) Program utilizes a 3 phase "Block" upgrade approach. "Block 0" is the Product Improved Mini-Flail (PIMF) which is an RCSS with the Anti-Personnel mine proofing and clearing payload. The PIMF has proven effective in Bosnia and Kosovo as a contingency asset. "Block 1" will be an anti-personnel obstacle clearing and neutralization system and will replace the PIMF, providing improved off-route stability, increased anti-personnel (AP) landmine neutralization speed, improved reliability, and improved human-machine interface. "Block 2" will add Anti-Personnel wire obstacle clearing, advanced controls, remotely deployed smoke and obscurants, and remotely delivered special munitions to support dismounted operations. "Block 3" will add the capability to carry soldier loads and provide hands-free control and dismounted soldier leader-follower technology. Mechanical devices will be added to "Block 2" that will be used to emplace demolitions and special breaching systems. A Mission Need Statement (MNS) has been developed and an Operational Requirements Document (ORD) has been approved by Army Training and Doctrine Command (TRADOC).</p> <p>(U) <u>FY 2000 Accomplishments</u></p> <ul style="list-style-type: none"> • Initiated Acquisition Documentation for Contracts Requirement Package. • Completed Operational Requirements Document. <p>(U) <u>FY 2001 Plans</u></p> <ul style="list-style-type: none"> • Complete Milestone A for RCSS. • Issue Request for Proposal (RFP) for competitive procurement. • Establish Source Selection Evaluation Board for competitive procurement. • Receive solicitations in response to RFP. • Evaluate contractors' proposals. • Execute Program Definition and Risk Reduction (PDRR) contract. 									

Exhibit R-2a, RDT&E Project Justification		Date:	
(U) <u>FY 2002 Plans</u>			
<ul style="list-style-type: none">• Start Initial Verification Testing (IVT) on kit delivered under PDRR phase.• Complete Milestone B.• Award SDD contract in FY 2003.			
B. Other Program Funding Summary			
C. Acquisition Strategy The RCSS contract will be awarded under full and open competition in FY 2001.			
D. Schedule Profile			
Fiscal Year actual and planned events:			
	FY2000	FY2001	FY2002
Acquisition Milestones			
RCSS		MS A	MS B
Engineering Milestones			
T&E Milestones			
RCSS			IVT
Contract Milestones			
RCSS		PDRR	

Exhibit R-2a, RDT&E Project Justification								Date: June 2001	
APPROPRIATION/BUDGET ACTIVITY RDT&E, DEFENSE WIDE, BUDGET ACTIVITY 5			PROGRAM ELEMENT PE 0604709D8Z		PROJECT NAME AND NUMBER MOBILE DETECTION ASSESSMENT RESPONSE SYSTEM - INTERIOR (MDARS-I)				
Cost (\$ in Millions)	FY 2000	FY 2001	FY 2002					Cost to Complete	Total Cost
MDARS-I	2.000	4.000	3.000					N/A	CONT
RDT&E Articles Qty									
<p>A. <u>Mission Description and Budget Item Justification.</u> The Mobile Detection Assessment Response System - Interior (MDARS-I) will provide unmanned physical security inside the warehouses of fixed installations and large storage facilities. In addition to security, the system will also support inventories and track movement or disturbance of critical inventory items.</p> <p>(U) <u>FY 2000 Accomplishments</u></p> <ul style="list-style-type: none"> • Monitored EMD System Development • Continued Production Qualification Testing (PQT) I <p>(U) <u>FY 2001 Plans</u></p> <ul style="list-style-type: none"> • Conduct Production Qualification Testing (PQT) II • Conduct Limited User Test (LUT) <p>(U) <u>FY 2002 Plans</u></p> <ul style="list-style-type: none"> • Conduct Special In Process Review (S-IPR) for Low Rate Initial Production (LRIP) decision • Initiate Pre-Planned Product Improvement (P3I) effort <p>B. Other Program Funding Summary</p> <p>C. Acquisition Strategy</p> <p>D. Schedule Profile</p>									

Exhibit R-2a, RDT&E Project Justification		Date: June 2001		
Fiscal Year actual and planned events:				
	FY2000	FY2001	FY2002	
Acquisition Milestones				
MDARS-I				S-IPR
T&E Milestones				
MDARS-I	PQT I	PQT II		
MDARS-I		LUT		
Contract Milestones				
MDARS-I				LRIP

Exhibit R-2a, RDT&E Project Justification								Date: June 2001	
APPROPRIATION/BUDGET ACTIVITY RDT&E, DEFENSE WIDE, BUDGET ACTIVITY 4			PROGRAM ELEMENT PE 0604709D8Z		PROJECT NAME AND NUMBER MOBILE DETECTION ASSESSMENT RESPONSE SYSTEM - EXTERIOR (MDARS-E)				
Cost (\$ in Millions)	FY 2000	FY 2001	FY 2002					Cost to Complete	Total Cost
MDARS-E	0.000	0.000	3.000					N/A	CONT
RDT&E Articles Qty									
<p>A. <u>Mission Description and Budget Item Justification.</u> The Mobile Detection Assessment Response System - Exterior (MDARS-E) will provide unmanned roving security patrols among buildings and around perimeters of large fixed installations including warehouses, large storage facilities and ammunition facilities. In addition to security, the system will also support inventories and track movement or disturbance of critical inventory items.</p> <p>(U) <u>FY 2000 Accomplishments</u></p> <ul style="list-style-type: none"> • No SDD funding this fiscal year <p>(U) <u>FY 2001 Plans</u></p> <ul style="list-style-type: none"> • No SDD funding this fiscal year <p>(U) <u>FY 2002 Plans</u></p> <ul style="list-style-type: none"> • Award SDD Contract • Conduct Customer Test (DT) • Monitor the SDD Hardware Contract <p>B. Other Program Funding Summary</p> <p>C. Acquisition Strategy</p>									

Exhibit R-2a, RDT&E Project Justification				Date:
D. Schedule Profile				
Fiscal Year actual and planned events:				
	FY2000	FY2001	FY2002	
T&E Milestones				
MDARS-E			DT	
Contract Milestones				
MDARS-E			SDD	

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Exhibit R-3 Cost Analysis (page 1)							Date:	June 2001					
DEFENSE-WIDE BUDGET ACTIVITY			Program Element PE 0604709D8Z				SRS						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total 2000 Cost	2001 Cost	2001 Award Date	2002 Cost	2002 Award Date			Cost To Complete	Total Cost	Target Value of Contract	
Primary Hardware Development			6.304	1.000		0.600							
Ancillary Hardware Development			1.150	0.100		0.100							
Systems Engineering			0.350	0.100		0.100							
Liscenses													
tooling													
GFE													
Award Fees													
Subtotal Product Development			7.804	1.200		0.800							
Remarks:													
Development Support			0.496	0.400		0.200							
Software Development				0.400		0.200							
Training Development			0.300	0.100		0.100							
Integrated Logistics Support			0.200	0.050		0.050							
Configuration Management				0.050		0.050							
Technical Data				0.150		0.150							
GFE													
Subtotal Support			0.996	1.150		0.750							
Remarks:													

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Exhibit R-3 Cost Analysis (page 1)							Date:	June 2001				
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 2000 Cost	2001 Cost	2001 Award Date	2002 Cost	2002 Award Date	2003 Cost	2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development	CPIF	OST		4.648		1.100						
Ancillary Hardware Development												
Systems Engineering			2.000	1.000		0.700						
Liscenses						0.700						
tooling		TACOM		0.100								
GFE												
Award Fees												
Subtotal Product Development			2.000	5.748		2.500						
Remarks:												
Development Support				0.100		0.500						
Software Development			0.500	0.100		0.123						
Training Development				0.100								
Integrated Logistics Support				0.100								
Configuration Management				0.100								
Technical Data												
GFE												
Subtotal Support			0.500	0.500		0.623						
Remarks:												

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Exhibit R-3 Cost Analysis (page 1)							Date:	June 2001				
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 2000 Cost	2001 Cost	2001 Award Date	2002 Cost	2002 Award Date			Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development			1.000	0.600								
Ancillary Hardware Development												
Systems Engineering				0.400		1.500						
Liscenses												
tooling												
GFE												
Award Fees												
Subtotal Product Development			1.000	1.000		1.500						
Remarks:												
Development Support				0.255								
Software Development			0.150	0.200		0.623						
Training Development				0.050								
Integrated Logistics Support			0.100	0.295								
Configuration Management				0.350								
Technical Data												
GFE												
Subtotal Support			0.250	1.150		0.623						
Remarks:												

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Exhibit R-3 Cost Analysis (page 1)							Date:	June 2001					
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 2000 Cost	2001 Cost	2001 Award Date	2002 Cost	2002 Award Date				Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development													
Ancillary Hardware Development													
Systems Engineering						1.300							
Liscenses													
tooling													
GFE													
Award Fees													
Subtotal Product Development						1.300							
Remarks:													
Development Support													
Software Development						0.423							
Training Development													
Integrated Logistics Support													
Configuration Management													
Technical Data													
GFE													
Subtotal Support						0.423							
Remarks:													

