Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Army

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

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R-1 ITEM NOMENCLATURE

2040: Research, Development, Test & Evaluation, Army

PE 0604827A: Soldier Systems - Warrior Dem/Val

BA 5: Development & Demonstration (SDD)

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	20.086	19.683	20.886	0.000	20.886	22.905	15.421	10.738	15.771	Continuing	Continuing
S56: MOUNTED SOLDIER	15.297	19.683	20.886	0.000	20.886	22.905	15.421	10.738	15.771	Continuing	Continuing
S65: SOLDIER POWER	4.789	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

This program element contains Project S56 for Mounted Warrior Soldier System (MWSS). MWSS provides combat crewmembers and vehicle commanders in the Current and Future force with increased mission effectiveness on the network centric battlefield in the areas of lethality, command and control, communications, survivability, mobility, and sustainability. MWSS provides the dismounted and mounted combat crewmembers increased capabilities to conduct offensive and defensive operations by providing uninterrupted viewing of their platform and dismounted Soldiers. MWSS Helmet Mounted Display extends fire control information to vehicle crewmembers while they are standing up in, or viewing out of the hatch allowing them to maintain immediate situational awareness of their direct battle space, while simultaneously controlling inter-netted fires, vehicle, or dismounted Soldiers.

B. Program Change Summary (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Previous President's Budget	17.730	19.786	21.036	0.000	21.036
Current President's Budget	20.086	19.683	20.886	0.000	20.886
Total Adjustments	2.356	-0.103	-0.150	0.000	-0.150
 Congressional General Reductions 		-0.103			
 Congressional Directed Reductions 		0.000			
 Congressional Rescissions 	0.000	0.000			
 Congressional Adds 		0.000			
 Congressional Directed Transfers 		0.000			
 Reprogrammings 	2.356	0.000			
 SBIR/STTR Transfer 	0.000	0.000			
 Adjustments to Budget Years 	0.000	0.000	-0.150	0.000	-0.150

Change Summary Explanation

FY2009-Reprogramming to properly align Congressional Add for Acid Alkaline Direct Methanol Fuel Technology in project S56.

DATE: Fobruary 2010

Exhibit R-2A, KD1 &E Project Justin	ication: PB 20	J11 Army							DATE: Febr	uary 2010	
APPROPRIATION/BUDGET ACTIV 2040: Research, Development, Test & E BA 5: Development & Demonstration (NOMENCLA A: Soldier Sys		or Dem/Val	PROJECT S56: MOUNTED SOLDIER						
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
S56: MOUNTED SOLDIER	15.297	19.683	20.886	0.000	20.886	22.905	15.421	10.738	15.771	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

Exhibit D 24 DDT&F Project Justification, DR 2011 Army

Mounted Soldier System (MSS) provides an integrated suite of enhancements to the combat vehicle crew member and commander to address identified capability gaps in their ability to fight, communicate, and maneuver across the full spectrum of operations. The MSS consists of lightweight, modular, and mission tailorable equipment and Command, Control, Communications and Computer (C4) devices worn, carried, or used by mounted crew members in performance of their missions. Major components include an improved Combat Vehicle Crewmember Helmet (CVCH) with heads up display, an untethered (wireless) communications system, and a microclimate cooling system. Other integral components include a Mounted Soldier over-garment and cold weather gloves, Chemical/Biological/Radiological/Nuclear (CBRN) protection, multi-threat eye protection, ballistic protection, flash/flame protection, and individual weapon holster. The MSS increases mission effectiveness by improving Command and Control and Situational Awareness while increasing crewmember survivability, endurance, and comfort.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Program #1	14.934	0.000	0.000	0.000	0.000
FY09: Began developmental engineering, prototyping, manufacturing, and systems engineering, assessment, contractor testing and program management support for Mounted Soldier System (MSS) use in Heavy Brigades.					
FY 2009 Accomplishments: FY 2009					
FY 2010 Plans: FY 2010					
FY 2011 Base Plans: FY 2011 Base					

Exhibit R-2A, RDT&E Project Justification: PB 2011 Army			DATE: Febr	ruary 2010			
APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 5: Development & Demonstration (SDD)	R-1 ITEM NOMENCLATURE PE 0604827A: Soldier Systems - Warrior Dem/V		PROJECT S56: MOUNTED SOLDIER				
B. Accomplishments/Planned Program (\$ in Millions)							
	FY 200	9 FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total		
FY 2011 OCO Plans: FY 2011 OCO							
Program #2	0.	000 16.52	17.443	0.000	17.443		
FY10 and FY11: Continue developmental engineering, prototyping, man assessment, contractor testing and program management support for MSS Combat Teams. FY 2009 Accomplishments: FY 2010 Plans: FY 2010 Base Plans: FY 2011 Base FY 2011 OCO Plans: FY 2011 OCO							
Program #3	0	663 0.00	0.000	0.000	0.000		
FY09: Began Governmental Test and Evaluation (T&E) activities	0.	0.00	0.000	0.000	0.000		
FY 2009 Accomplishments: FY 2009							
FY 2010 Plans: FY 2010							

Exhibit R-2A, RDT&E Project Justification: PB 2011 Army			DATE: Febr	ruary 2010				
APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 5: Development & Demonstration (SDD)	R-1 ITEM NOMENCLATURE PE 0604827A: Soldier Systems - Warrior Dem/Val	PROJECT S56: MOUN	PROJECT S56: MOUNTED SOLDIER					
B. Accomplishments/Planned Program (\$ in Millions)	,	ı						
	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total			
FY 2011 Base Plans: FY 2011 Base								
FY 2011 OCO Plans: FY 2011 OCO								
Program #4 FY10 and FY11: Continue Governmental Test and Evaluation (T&E)ac Limited User Tests, and Operational Tests. FY 2009 Accomplishments: FY 2009 FY 2010 Plans: FY 2010 FY 2011 Base Plans: FY 2011 OCO Plans: FY 2011 OCO	otivities including Developmental Tests,	2.500	3.443	0.000	3.443			
Program #5 Small Business Innovative Research/Small Business Technology Trans: FY 2009 Accomplishments: FY 2009	fer Programs	0.654	0.000	0.000	0.000			

Exhibit R-2A, RDT&E Project Justification: PB 2011 Army	DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT	
2040: Research, Development, Test & Evaluation, Army	PE 0604827A: Soldier Systems - Warrior Dem/Val	S56: <i>MOUN</i>	TED SOLDIER
BA 5: Development & Demonstration (SDD)			

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2	2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
FY 2010 Plans: FY 2010						
FY 2011 Base Plans: FY 2011 Base						
FY 2011 OCO Plans: FY 2011 OCO						
	Accomplishments/Planned Programs Subtotals 1	15.297	19.683	20.886	0.000	20.886

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

		-	FY 2011	FY 2011	FY 2011					Cost To	
<u>Line Item</u>	FY 2009	FY 2010	Base	<u>oco</u>	Total	FY 2012	FY 2013	FY 2014	FY 2015	Complete	Total Cost
• Ord. #1: MS OPA3 M80600000	0.000	1.082	38.872	0.000	38.872	58.505	124.797	16.717	0.000	0	239.973

D. Acquisition Strategy

The MSS acquisition roadmap is comprised of two increments. Increment I is documented in the Mounted Warrior Soldier System (MWSS) Capability Production Document (CPD) and was equipped to the 4/9 IN BN of the 4th SBCT during FY07/08 to maintain tethered voice communications, tethered access to host platform displays, sensors, and sights via a tethered helmet mounted display (HMD). Increment II is documented in the Mounted Soldier System (MSS) Capability Development Document (CDD). Increment II (MSS) implements a strategy of time-phased development driven by technology maturity, vehicle availability, and user prioritization. Increment II adds wireless voice communitions and Micro-Climate cooling. The acquisition approach is centered around vehicle kit development and integration since the planned MSS subsystems are using relatively mature technology. The MSS program takes advantage of components available from other Government agencies, and Commercial-Off-the-Shelf (COTS) components and technologies as available.

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.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Army

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

R-1 ITEM NOMENCLATURE

PROJECT

2040: Research, Development, Test & Evaluation, Army BA 5: Development & Demonstration (SDD)

PE 0604827A: Soldier Systems - Warrior Dem/Val

S56: MOUNTED SOLDIER

Product Development (\$ in Millions)

			_										
				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 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
Develop and Engineer Mounted Soldier System Wireless Comms	C/FFP	Thales Communications Inc., Clarksburg, MD	0.000	0.100		0.000		0.000		0.000	Continuing	Continuing	0
Develop and Engineer Mounted Soldier System Microclimate Cooling	C/FFP	Carleton Technologies Inc.	0.000	0.100		0.000		0.000		0.000	Continuing	Continuing	0
Develop and Engineer Mounted Soldier System Display	C/FFP	Rockwell Collins Carlsbad, CA	0.000	0.100		0.000		0.000		0.000	Continuing	Continuing	0
Develop and Engineer Mounted Soldier System	C/Various	Various Location could not be determined.	23.409	0.000		0.000		0.000		0.000	Continuing	Continuing	0
		Subtotal	23.409	0.300		0.000		0.000		0.000			0.000

Remarks

Support (\$ in Millions)

2 a F F 2 - 1 (+ == = = = = = = = = = = = = = = = =	,				,								
						FY 2011		FY 2011		FY 2011			
				FY 2010		Base		осо		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
Mounted Soldier Support	С	Various Location could not be determined.	0.601	11.547		10.005		0.000		10.005	Continuing	Continuing	0

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Army

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

R-1 ITEM NOMENCLATURE

PROJECT

2040: Research, Development, Test & Evaluation, Army BA 5: Development & Demonstration (SDD)

PE 0604827A: Soldier Systems - Warrior Dem/Val

S56: MOUNTED SOLDIER

Support (\$ in Millions)

Support (φ in minons	"		_										
						FY	2011	FY	2011	FY 2011			
				FY 2010		Base		осо		Total			
	Contract Method	Performing Activity &	Total Prior								Cost To		Target Value of
Cost Category Item	& Type	Location	Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Complete	Total Cost	Contract
		Subtotal	0.601	11.547		10.005		0.000		10.005			0.000

Remarks

Test and Evaluation (\$ in Millions)

				FY 2	2010	FY 2 Ba	2011 ase	FY 2	2011 CO	FY 2011 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
Various Testing Organizations	С	ATEC TTC/YPG/DTC/ EPG/ARL-SLAD, etc.	2.000	2.500		3.443		0.000		3.443	Continuing	Continuing	0
		Subtotal	2.000	2.500		3.443		0.000		3.443			0.000

Remarks

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Army

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

R-1 ITEM NOMENCLATURE

PROJECT

2040: Research, Development, Test & Evaluation, Army BA 5: Development & Demonstration (SDD)

PE 0604827A: Soldier Systems - Warrior Dem/Val

S56: MOUNTED SOLDIER

Management Services (\$ in Millions)

				FY	2010		2011 ase		2011 CO	FY 2011 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
PM Soldier Warrior Management/Support of MSSprogram	С	PM Soldier Warrior Ft. Belvoir, VA	0.000	4.682		7.438		0.000		7.438	Continuing	Continuing	0
SBIR/SBTTR	С	Nothing entered for Activity and Location. Location could not be determined.	0.000	0.654		0.000		0.000		0.000	Continuing	Continuing	0
	-	Subtotal	0.000	5.336		7.438		0.000		7.438			0.000

Remarks

	Total Prior Years Cost	FY 2	2010	FY 2	2011 FY	2011 CO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	26.010	19.683		20.886	0.000		20.886			0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Army **DATE:** February 2010 PROJECT

APPROPRIATION/BUDGET ACTIVITY **R-1 ITEM NOMENCLATURE**

2040: Research, Development, Test & Evaluation, Army PE 0604827A: Soldier Systems - Warrior Dem/Val S56: MOUNTED SOLDIER BA 5: Development & Demonstration (SDD)

]	FY:	200	9	J	FY 2	201	0	F	Y 2	201	1	I	FY 2	201	2	I	FY 2	201.	3	I	Y 2	201	4	I	Y 2	201	5
	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
MSS Increment II - Milestone C										#																		
MSS Increment II - LRIP											#	#	#	#														
Independent Operational Test and Evaluation (IOTE)												#	#	#														
MSS Increment II - Production															#	#	#	#	#	#	#	#	#	#	#	#	#	
MSS Increment II - EMD Improvements																	#	#	#	#	#	#	#	#	#	#	#	

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Army			DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT	
2040: Research, Development, Test & Evaluation, Army	PE 0604827A: Soldier Systems - Warrior Dem/Val	S56: <i>MOUN</i>	TED SOLDIER
BA 5: Development & Demonstration (SDD)			

Schedule Details

	Sta	art	E	nd
Event	Quarter	Year	Quarter	Year
MSS Increment II - Milestone C	2	2011	2	2011
MSS Increment II - LRIP	3	2011	2	2012
Independent Operational Test and Evaluation (IOTE)	4	2011	2	2012
MSS Increment II - Production	3	2012	3	2015
MSS Increment II - EMD Improvements	1	2013	3	2015

DATE: February 2010

Exhibit K-2A, KDT&E TTOJECT Sustifi	ication. 1 D 2	O11 Ailily							DATE. I COI	uary 2010		
APPROPRIATION/BUDGET ACTI	VITY			R-1 ITEM N	NOMENCLA	TURE		PROJECT				
2040: Research, Development, Test & E	Evaluation, Ar	ту		PE 0604827	A: Soldier Sys	stems - Warrio	or Dem/Val	S65: SOLDI	ER POWER			
BA 5: Development & Demonstration (SDD)											
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate					
S65: SOLDIER POWER	4.789	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing	
Quantity of RDT&E Articles												

A. Mission Description and Budget Item Justification

Exhibit R-2A RDT&E Project Justification: PR 2011 Army

Congressional add FY09 support the M-25 Defense Acquisition Challenge Program Fuel Cell by focusing on solutions that reduce the M-25 system weight and complexity, and increase energy density to accomplish the most lightweight and compact power source possible. Soldier Fuel Cells will provide more power in a smaller, lighter weight package compared to batteries thereby lightening the Soldiers' carried load.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Program #1	4.789	0.000	0.000	0.000	0.000
Congressional adds are combined to provide developmental and system improvement efforts to the M-25 and Acid Alkaline Soldier Fuel Cell Systems.					
FY 2009 Accomplishments: FY 2009					
FY 2010 Plans: FY 2010					
FY 2011 Base Plans: FY 2011 Base					
FY 2011 OCO Plans: FY 2011 OCO					

Exhibit R-2A, RDT&E Project Justification: PB 2011 Army			DATE: February 2010	
APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT		
2040: Research, Development, Test & Evaluation, Army	PE 0604827A: Soldier Systems - Warrior Dem/Val	S65: SOLDI	ER POWER	
BA 5: Development & Demonstration (SDD)				

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Accomplishments/Planned Programs Subtotals	4.789	0.000	0.000	0.000	0.000

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

N/A

D. Acquisition Strategy

N/A

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.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Army

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

R-1 ITEM NOMENCLATURE

PROJECT

2040: Research, Development, Test & Evaluation, Army

PE 0604827A: Soldier Systems - Warrior Dem/Val

S65: SOLDIER POWER

BA 5: Development & Demonstration (SDD)

Product Development (\$ in Millions)

				FY 2	2010	FY :	2011 ase	FY 2	2011 CO	FY 2011 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
Development and System Improvements to M-25 and Acid Alkaline	С	Wilmington DE	1.545	4.282		0.000		0.000		0.000	0	3.485	0
		Subtotal	1.545	4.282		0.000		0.000		0.000	0.000	3.485	0.000

Remarks

Support (\$ in Millions)

				FY	2010	FY :	2011 ase	FY:	2011 CO	FY 2011 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
PM Ground Soldier and Power support	С	Various Location could not be determined.	0.000	0.374		0.000		0.000		0.000	0	0	0
		Subtotal	0.000	0.374		0.000		0.000		0.000	0.000	0.000	0.000

Remarks

	Total Prior Years Cost	FY 2010	FY :	FY:	2011 CO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	1.545	4.656	0.000	0.000		0.000	0.000	3.485	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Army DATE: February 2010												
APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 5: Development & Demonstration (SDD)			R-1 ITEM NOMENCLATURE PE 0604827A: Soldier Systems - Warrior Dem/Val				PROJECT S65: SOLDIER POWER					
	Total Prior Years Cost	FY 20)10	FY 2011 Base	FY 2011 OCO	FY 2011 Total		Cost To Complete	Total Cost	Target Value of Contract		
Remarks												