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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Army	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY				R-1 ITEM NOMENCLATURE							
2040: <i>Research, Development, Test & Evaluation, Army</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>				PE 0603827A: <i>Soldier Systems - Advanced Development</i>							
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	51.415	18.030	32.050	-	32.050	27.115	27.001	16.118	20.759	Continuing	Continuing
S49: <i>GROUND SOLDIER SYSTEM (GSS)</i>	34.819	0.020	-	-	-	-	-	-	-	Continuing	Continuing
S51: <i>AIRCREW INTEGRATED SYS AD</i>	0.156	0.136	0.141	-	0.141	0.164	0.164	0.157	0.160	Continuing	Continuing
S52: <i>SOLDIER SUPPORT EQUIPMENT - AD</i>	4.700	6.202	5.046	-	5.046	2.714	1.770	1.113	-	Continuing	Continuing
S53: <i>CLOTHING AND EQUIPMENT</i>	6.935	5.220	7.189	-	7.189	7.222	6.944	5.144	5.143	Continuing	Continuing
S54: <i>SMALL ARMS IMPROVEMENT</i>	4.805	4.577	4.690	-	4.690	5.432	5.469	5.100	5.186	Continuing	Continuing
VS4: <i>SOLDIER PROTECTIVE EQUIPMENT</i>	-	1.875	14.984	-	14.984	11.583	12.654	4.604	10.270	Continuing	Continuing

Note

Change Summary Explanation:

Fiscal Year 2011: Program increase of \$4.700M to Project S52 for Explosive Ordinance Disposal Robotic and Dismounted Equipment.

Fiscal Year 2012: Congressional Reduction of \$1.846M to Project S53 for Project S53 transfer to Project VS4.

Fiscal Year 2013: Program Increase of \$13.100 Million to Project VS4 for Soldier Protective Equipment portfolio efforts and program increase of \$0.500 Million to Project S52 for the Gunshot Detection System (GDS) effort.

A. Mission Description and Budget Item Justification

This Program Element (PE) for Advanced Component Development and Prototypes manages the Soldier as a system in order to increase combat effectiveness, test and deliver tangible products that save Soldier's lives, and improve Soldier's quality of life. It evaluates, develops, and tests emerging technologies and critical Soldier support systems to reduce technology risk.

Project S49 funding (Ground Soldier System) integrates multiple components and leverages emerging technologies to provide overmatching operational capabilities to ground combat Soldiers.

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APPROPRIATION/BUDGET ACTIVITY

2040: *Research, Development, Test & Evaluation, Army*
BA 4: *Advanced Component Development & Prototypes (ACD&P)*

R-1 ITEM NOMENCLATURE

PE 0603827A: *Soldier Systems - Advanced Development*

Project S51 funding (Aircrew Integrated Systems) supports component development and prototyping of critical Soldier support systems and other combat service support equipment that will improve unit sustainability and combat effectiveness.

Project S52 funding (Soldier Support Equipment) supports system development and testing for the Gunshot Detection (GSD) Program of Record commencing in FY 2012. The GSD will provide passive detection, computer based signal processing, aural and visual indication to help troops locate a hostile shooter.

Project S53 funding (Clothing and Equipment) supports development of state-of-the-art technology to improve tactical and non-tactical clothing and individual equipment to enhance the lethality, survivability, and mobility of the individual Soldier.

Project S54 funding (Small Arms Improvement) provides funds to develop, demonstrate and evaluate emerging technology for integration of systems, subcomponents and prototypes designed to enhance lethality, target acquisition, fire control, training effectiveness and reliability for current and future small arms weapon systems and ammunition.

Project S55 funding (Counter-Defilade Target Engagement) provides funds to develop, demonstrate and evaluate technology for integration of systems and subcomponents to enhance hit probability to defeat defilade and point area targets at the squad level.

Project VS4 funding (Soldier Protective Equipment) supports efforts to evaluate integrated technologies and representative or prototype systems that help expedite Individual Soldier Ballistic Protection technology transition from the laboratory to operational use.

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	48.323	19.598	18.368	-	18.368
Current President's Budget	51.415	18.030	32.050	-	32.050
Total Adjustments	3.092	-1.568	13.682	-	13.682
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-1.232	-			
• Adjustments to Budget Years	-0.376	0.278	13.682	-	13.682
• Other Adjustments 1	4.700	-	-	-	-
• Other Adjustments 2	-	-1.846	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army								DATE: February 2012			
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>				R-1 ITEM NOMENCLATURE PE 0603827A: <i>Soldier Systems - Advanced Development</i>				PROJECT S49: <i>GROUND SOLDIER SYSTEM (GSS)</i>			
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
S49: <i>GROUND SOLDIER SYSTEM (GSS)</i>	34.819	0.020	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles											
Note Not applicable for this item.											
A. Mission Description and Budget Item Justification The Nett Warrior (NW) program [named in honor of Medal of Honor recipient COL Robert Nett], previously known as Ground Soldier System (GSS) program, leverages commercial smart devices and secure Army tactical radios to provide an integrated dismounted leader Mission Command (MC) and Situational Awareness (SA) system for use during combat operations. The system provides unparalleled situational awareness and understanding to the dismounted leader allowing for faster and more accurate decisions in the tactical fight. This translates into Soldiers being at the right place, at the right time, with the right information making them more effective, more lethal, and more survivable in the execution of their combat mission. The NW program focuses on the integration and evaluation of commercial smart devices for the MC/SA system, improved navigation, and reduced fratricide through the visualization of friendly forces. The development and integration process employs combat veteran for Soldier integration and feedback enhancing the human factors and fightability. NW also develops supporting power systems aimed at achieving NET ZERO power balance in the expeditionary environment.											
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)								FY 2011	FY 2012	FY 2013	
Title: Ground Soldier System (GSS). Description: Developmental Engineering, Prototyping, Systems Engineering and Program Management Support. FY 2011 Accomplishments: Continued developmental engineering and system analysis with three competing contractors on 180 Nett Warrior (NW) prototypes. Conducted test result analysis on results of FY10-11 Limited User Test (LUT) and implemented improvements to designs on 51 prototypes for contractor verification systems testing. Executed training and support of 47 deployable prototype power recharging and fuel cell devices based on output of LUT excursions. Developed smart device technology prototypes for experimentation at Network Integration Experiments at Ft. Bliss, TX. Conducted systems engineering, and program management support for Nett Warrior (NW). FY 2012 Plans: Provide program oversight for transition to Budget Activity (BA) 5.								33.975 0	0.020 0	-	
Title: Governmental Test and Evaluation (T&E) Activities								0.844	-	-	

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army							DATE: February 2012					
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>			R-1 ITEM NOMENCLATURE PE 0603827A: <i>Soldier Systems - Advanced Development</i>			PROJECT S49: <i>GROUND SOLDIER SYSTEM (GSS)</i>						
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)												
							FY 2011	FY 2012	FY 2013			
Description: Funding is provided for the following effort FY 2011 Accomplishments: Completed final reports and documentation from FY10-11 Nett Warrior Limited User Testing and Power Excursion.							Articles: 0					
Accomplishments/Planned Programs Subtotals							34.819	0.020	-			
C. Other Program Funding Summary (\$ in Millions)												
	Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
	• OPA 3: <i>OPA 3 Ground Soldier System</i>	1.685	63.500	103.317		103.317		200.855	203.547	225.251	Continuing	Continuing
	• RDT&E, PE 0604827A S75: <i>RDT&E, PE 0604827A S75 - Ground Soldier Ensemble</i>		38.547	46.797		46.797		15.716	16.976	18.402	Continuing	Continuing
D. Acquisition Strategy The Nett Warrior (NW) program provides unparalleled situational awareness and battle command to dismounted combat leaders through commercial smart device technologies and secure tactical radios. The NW program executed a MS A in FY09 and began three competing TD phase contracts leading to developmental and operational testing FY10-11. The technology development contracts have been completed. The NW MS C is executed in 2QFY12 followed by a low rate Capability Set (CS) 14 production award. The RDT&E and Production dollars in FY12-13 pay for Developmental Test and Evaluation planned for 4QFY12-1QFY13, followed by 1QFY13 Initial Operational Test & Evaluation (IOT&E) as well as hardware, software, integration and program management. The Developmental and Operational tests are validation of the system utility, supportability, and austere-environment power production and regeneration strategy-leading to the full 10 BCT set CS14 in the 2QFY13. NW also continues to reduce size, weight and power through a semi-annual integration and evaluation and test of commercial smart device technologies which evolve continuously. The development and integration process employs combat veteran for Soldier integration and feedback enhancing the human factors and fightability. NW also develops supporting power systems aimed at achieving NET ZERO power balance in the expeditionary environment.												
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 2013 Army											DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY				R-1 ITEM NOMENCLATURE				PROJECT					
2040: Research, Development, Test & Evaluation, Army BA 4: Advanced Component Development & Prototypes (ACD&P)				PE 0603827A: Soldier Systems - Advanced Development				S49: GROUND SOLDIER SYSTEM (GSS)					
Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 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 software integration of NW program	MIPR	Various:Various	16.707	-		-		-		-	0.000	16.707	0.000
PM Soldier Warrior oversight of NW program	Various	Various:Various	24.986	0.020		-		-		-	0.000	25.006	0.000
Subtotal			41.693	0.020		-		-		-	0.000	41.713	0.000
Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 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, Integrate and Prototype NW Increment I	C/CPFF	Raytheon Company:McKinney, TX 75071-2813	13.900	-		-		-		-	0.000	13.900	0.000
Develop, Integrate and Prototype NW Increment I	C/CPFF	General Dynamics C4 Systems, Inc.:Scottsdale, AZ 85257-3812	12.659	-		-		-		-	0.000	12.659	0.000
Develop, Integrate and Prototype NW Increment I	C/CPFF	Rockwell Collins, Inc.:Cedar Rapids, IA 52498-0505	13.354	-		-		-		-	0.000	13.354	0.000
Subtotal			39.913	-		-		-		-	0.000	39.913	0.000
Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 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 Nett Warrior support	MIPR	CERDEC, CECOM, TACOM, ARL, NSRDEC, etc.:Various	2.522	-		-		-		-	0.000	2.522	0.000
PM Nett Warrior support	MIPR	Engility, NCI, NSA, etc.:Various	14.649	-		-		-		-	0.000	14.649	0.000
Subtotal			17.171	-		-		-		-	0.000	17.171	0.000

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Army											DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>				R-1 ITEM NOMENCLATURE PE 0603827A: <i>Soldier Systems - Advanced Development</i>				PROJECT S49: <i>GROUND SOLDIER SYSTEM (GSS)</i>					

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 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	MIPR	ATEC, TTC/YPG/ DTC/EPT/ARL/SLAD, etc.:Various	13.255	-		-		-		-	0.000	13.255	0.000
Subtotal			13.255	-		-		-		-	0.000	13.255	0.000

	Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	112.032	0.020		-		-		-	0.000	112.052	0.000

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Army																DATE: February 2012			
APPROPRIATION/BUDGET ACTIVITY								R-1 ITEM NOMENCLATURE								PROJECT			
2040: Research, Development, Test & Evaluation, Army								PE 0603827A: Soldier Systems - Advanced Development								S49: GROUND SOLDIER SYSTEM (GSS)			
BA 4: Advanced Component Development & Prototypes (ACD&P)																			

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Army			DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603827A: <i>Soldier Systems - Advanced Development</i>	PROJECT S49: <i>GROUND SOLDIER SYSTEM (GSS)</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Army Configuration Steering Board (CSB)	4	2011	4	2011

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army								DATE: February 2012			
APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 4: Advanced Component Development & Prototypes (ACD&P)				R-1 ITEM NOMENCLATURE PE 0603827A: Soldier Systems - Advanced Development				PROJECT S51: AIRCREW INTEGRATED SYS AD			
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
S51: AIRCREW INTEGRATED SYS AD	0.156	0.136	0.141	-	0.141	0.164	0.164	0.157	0.160	Continuing	Continuing
Quantity of RDT&E Articles											
A. Mission Description and Budget Item Justification											
This project supports the Advanced Component Development and Prototyping of select Air Soldier System (Air SS) components. The Air SS provides improved safety, survivability, and human performance that amplifies the Warfighter's effectiveness and facilitates full-spectrum dominance of Army aircraft. The Air SS addresses capability gaps identified during combat operations in Iraq and Afghanistan including the effects of weight and bulk, limited situational awareness, and lack of functionally integrated aircrew member life support equipment. The Air SS follows an evolutionary acquisition approach with two sub-increments that integrate mature technologies to build to the full capability. Each sub-increment progressively reduces overall weight and bulk of aircrew equipment, increases situational awareness, and enhances aircrew mobility. This funding provides advanced development for the Air SS in technology areas supporting improved environmental cooling, integrated power, flexible display technologies, lightweight protective clothing, and miniaturized communication devices.											
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)								FY 2011	FY 2012	FY 2013	
Title: Aircrew Integrated Systems (ACIS) Advanced Development Articles: Description: Advanced Component Development and Prototyping (ACDP) of critical aircrew support systems technology improvements and Advanced Development (AD) and risk reduction effort required for transition to Engineering Manufacturing Development (EMD) phase. FY 2011 Accomplishments: Funded laboratories to monitor and influence Air SS technologies to include wearable environmental cooling, integrated wearable power, and lightweight protective clothing technologies into the EMD phase of Air SS. FY 2012 Plans: Fund laboratories to monitor and influence Air SS technologies to include flexible display technologies, and lightweight protective clothing materials into the EMD phase. FY 2013 Plans: Will fund laboratories to monitor and influence Air SS technologies to include advanced helmet mounted display technologies and miniaturized communication devices into Air SS EMD phase.								0.156	0.136	0.141	
								0	0		
Accomplishments/Planned Programs Subtotals								0.156	0.136	0.141	

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army									DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 4: Advanced Component Development & Prototypes (ACD&P)				R-1 ITEM NOMENCLATURE PE 0603827A: Soldier Systems - Advanced Development				PROJECT S51: AIRCREW INTEGRATED SYS AD			
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• ACIS Engineering Development: RDTE, A PE 0604601A PROJ S61-SDD	9.997	10.936	17.175		17.175		21.772	12.516	12.642	Continuing	Continuing
• Aircrew Integrated Systems: Aircraft Procurement, Army SSN AZ3110 - ACIS	52.125	62.746	77.381		77.381		16.347	14.080	0.008	Continuing	Continuing
D. Acquisition Strategy											
The Air SS follows an evolutionary acquisition approach with two sub-increments that build to the full capability. Through the two sub-increments, the Air Soldier System program focuses on reducing weight and bulk while integrating capabilities including optimized survival equipment, integrated Soldier-worn electronics suite, integrated wireless aircraft and survival communications capability, a digital day/night heads-up display for all Army aircraft platforms, optimized laser eye protection, and reduced clothing layers with no loss of thermal protection. These funds resource various government agencies to transition critical technologies/products from the Advanced Component Development to the Engineering Manufacturing Development phase in support of the identified Air Soldier System sub-increments.											
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-2A, RDT&E Project Justification: PB 2013 Army									DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 4: Advanced Component Development & Prototypes (ACD&P)				R-1 ITEM NOMENCLATURE PE 0603827A: Soldier Systems - Advanced Development				PROJECT S52: SOLDIER SUPPORT EQUIPMENT - AD			
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
S52: SOLDIER SUPPORT EQUIPMENT - AD	4.700	6.202	5.046	-	5.046	2.714	1.770	1.113	-	Continuing	Continuing
Quantity of RDT&E Articles											

Note

This was a new start in FY 2012

A. Mission Description and Budget Item Justification

The Gunshot Detection System (GDS) was identified by the Vice Chief of Staff of the Army for insertion into the Capabilities Development for Rapid Transition (CDRT) process. A Capabilities Production Document (CPD) was approved on 13 Feb 2009. On 3 May 2010 an Army Acquisition Objective (AAO) was approved for 13,424 systems. The system uses passive acoustic and / or another sensor modality for detection, computer-based signal processing, and both aural and visual indications to help troops locate a hostile shooter, by reporting relative shooter azimuth, range, and elevation from incoming small arms fire. The visual data is displayed on a single ruggedized display and the verbal/voice over a speaker.

FY 2011 efforts for Explosive Ordnance Disposal (EOD) Robotic and Dismounted Equipment - Design, prototype, integration and demonstration in support of the following efforts: Robotic Telescoping Pan, Tilt, Zoom (PTZ) Camera; High Fidelity Video Imaging; Bangstick; Improved Laser Sight for Pan Disrupter; Multishot Disrupter for Robot Applications; Ultra Lightweight MK2 EOD Disrupter; and Precision Disrupter Robotic Aiming System.

The FY 2013 funds will be used for the development of engineering documentation, generation of an Acquisition Requirements Package (ARP) to support conduct of Source Selection activities leading to a competitive contract award in FY2014.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2011	FY 2012	FY 2013
Title: System Characterization Study	-	3.177	-
Articles:		0	
Description: Study to be conducted to ascertain system performance, Technology Readiness Level (TRL) and Analysis of Alternatives (AoA) and associated PMO.			
FY 2012 Plans: The FY2012 funds will be used for a System Characterization study to be conducted by the Armament Research Development & Engineering Center (ARDEC) Acoustic Center of Excellence (ACoE). This study will ascertain system performance, Technology			

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APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 4: Advanced Component Development & Prototypes (ACD&P)	R-1 ITEM NOMENCLATURE PE 0603827A: Soldier Systems - Advanced Development	PROJECT S52: SOLDIER SUPPORT EQUIPMENT - AD		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
Readiness Level (TRL) and Analysis of Alternatives (AoA). This information will be used in development mature Engineering Documentation.				
<p>Title: Explosive Ordinance Disposal (EOD) Robotic and Dismounted Equipment</p> <p>Articles:</p> <p>Description: EOD Robotic and Dismounted Equipment - Design, prototype, integration and demonstration in support of the following efforts: Robotic Telescoping Pan Tilt Zoom (PTZ) Camera; High Fidelity Video Imaging; Bangstick; Improved Laser Sight for Pan Disrupter; Multishot Disrupter for Robot Applications; Ultra Lightweight MK2 EOD Disrupter; and Precision Disrupter Robotic Aiming System.</p> <p>FY 2011 Accomplishments: Designed, developed prototypes, integrated and demonstrated most systems on an EOD robotic platform or prototype hardware ready for user assessment. For the Multishot Disrupter project, developed subsystem prototypes (recoil mitigation system, fluidic filling and sealing system, magnetic chambering and extraction system, receiver and lock mechanism, and an operator control unit interface) for testing. For the Ultra Lightweight Mk2 dearmer project conducted modeling and simulation for strength/weight optimization; produced a TDP drawing package and a live fire test report.</p>		4.700 0	-	-
<p>Title: Engineering Documentation</p> <p>Articles:</p> <p>Description: Development of required engineering documentation for this Program of Record (POR) and associated Program Management Office (PMO)support.</p> <p>FY 2012 Plans: The FY2012 funds will be used for the development of a Performance Specification, Interface Control Document (ICD) and Performance Work Statement (PWS).</p> <p>FY 2013 Plans: This will provide for Performance Specification and Interface Control Documentation.</p>		-	1.749 0	1.521
<p>Title: Engineering Services and Test Support</p> <p>Articles:</p> <p>Description: Perform engineering analysis and provide test support to Technology Readiness Assessment (TRA); support Bid Sample testing and associated PMO.</p>		-	1.276 0	1.439

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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>		R-1 ITEM NOMENCLATURE PE 0603827A: <i>Soldier Systems - Advanced Development</i>	PROJECT S52: <i>SOLDIER SUPPORT EQUIPMENT - AD</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
FY 2012 Plans: The FY2012 funds will be used to support the System Characterization Study. Additionally, the funds will support Subject Matter Experts (SME) in RADAR, IR and Acoustic technologies to provide analysis and support to the System Characterization.			
FY 2013 Plans: The FY2013 funds will be used for Program Management Office Services, Engineering and Test support.			
Title: Source Selection Activities Description: Conduct of source selection to support 1QFY2014 contract award. FY 2013 Plans: FY2013 funds will be used for source selection and to support a full and open contract award for a 5 year production contract in 1QFY2014.	-	-	2.086
Accomplishments/Planned Programs Subtotals	4.700	6.202	5.046

C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• SSN: BA3301 Gunshot Detection		11.100	2.332		2.332		26.970	73.719	53.431	384.740	576.452
Syste: SSN: BA3301 Gunshot Detection System (GDS) Program of Record											

D. Acquisition Strategy
The FY 2013 funds will be used for the development of engineering documentation, generation of the Acquisition Requirements Package (ARP), and conduct of Source Selection activities leading to a competitive Contract Award in FY 2014. Upon Milestone Decision Approval, future enhancements are planned to be initiated for an Variant 2 solution to meet the requirements of Tracked/Combat Vehicles as specified in the CPD.

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 2013 Army										DATE: February 2012			
APPROPRIATION/BUDGET ACTIVITY				R-1 ITEM NOMENCLATURE				PROJECT					
2040: Research, Development, Test & Evaluation, Army BA 4: Advanced Component Development & Prototypes (ACD&P)				PE 0603827A: Soldier Systems - Advanced Development				S52: SOLDIER SUPPORT EQUIPMENT - AD					
Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 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 Office Support Services	Various	PM FLIR:Ft. Belvoir, VA	-	0.947		0.449		-		0.449	Continuing	Continuing	Continuing
Subtotal			-	0.947		0.449		-		0.449			
Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 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
Engineering Documentation	MIPR	TBD:TBD	-	-		1.521		-		1.521	Continuing	Continuing	Continuing
System Characterization Study	MIPR	ARDEC Acoustic Center of Excellence:Picatinny, NJ	-	2.230		-		-		-	Continuing	Continuing	Continuing
Subtotal			-	2.230		1.521		-		1.521			
Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 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
Engineering Services	Various	TBD:TBD	-	1.276		0.740		-		0.740	Continuing	Continuing	Continuing
Source Selection Support	Various	TBD:TBD	-	-		2.086		-		2.086	Continuing	Continuing	Continuing
Subtotal			-	1.276		2.826		-		2.826			
Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 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
EOD Robotic Dismounted Equipment	C/TBD	Various:Various	4.700	1.749		-		-		-	0.000	6.449	4.700
GDS Test Support	MIPR	TBD:TBD	-	-		0.250		-		0.250	0.000	0.250	0.250

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Army											DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>				R-1 ITEM NOMENCLATURE PE 0603827A: <i>Soldier Systems - Advanced Development</i>				PROJECT S52: <i>SOLDIER SUPPORT EQUIPMENT - AD</i>					

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 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
Subtotal			4.700	1.749		0.250		-		0.250	0.000	6.699	4.950

	Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	4.700	6.202		5.046		-		5.046			

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Army			DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>		R-1 ITEM NOMENCLATURE PE 0603827A: <i>Soldier Systems - Advanced Development</i>		PROJECT S52: <i>SOLDIER SUPPORT EQUIPMENT - AD</i>	

	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	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
Design, Prototype, Integrate and Demonstrate																												
System Characterization Study																												
Engineering Documentation																												
Engineering Services and Test Support																												
Variant 1 Milestone C																												
GDS - Variant 1 RFP Release																												
GDS - Variant 1 Contract Award																												
Variant 2 Milestone B																												
Variant 2 Engineering, Manufacturing and Development																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Army			DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603827A: <i>Soldier Systems - Advanced Development</i>	PROJECT S52: <i>SOLDIER SUPPORT EQUIPMENT - AD</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Design, Prototype, Integrate and Demonstrate	2	2012	4	2013
System Characterization Study	2	2012	2	2013
Engineering Documentation	1	2013	4	2013
Engineering Services and Test Support	1	2012	4	2014
Variant 1 Milestone C	2	2013	2	2013
GDS - Variant 1 RFP Release	3	2013	3	2013
GDS - Variant 1 Contract Award	1	2014	1	2014
Variant 2 Milestone B	2	2014	2	2014
Variant 2 Engineering, Manufacturing and Development	2	2014	4	2016

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army									DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY				R-1 ITEM NOMENCLATURE				PROJECT			
2040: Research, Development, Test & Evaluation, Army BA 4: Advanced Component Development & Prototypes (ACD&P)				PE 0603827A: Soldier Systems - Advanced Development				S53: CLOTHING AND EQUIPMENT			
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
S53: CLOTHING AND EQUIPMENT	6.935	5.220	7.189	-	7.189	7.222	6.944	5.144	5.143	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

This funding supports efforts to evaluate and integrate technologies and representative or prototype systems that help expedite Soldier uniform and clothing technology transition from the laboratory to operational use. Efforts focus on proving out commonality across as broad a spectrum of users as possible to provide a modular, integrated uniform/clothing system from skin out and head-to-toe. It funds efforts to investigate new technologies and domestically available fabrics with Flame Resistance, moisture wicking and insect protection technologies. New technologies are investigated to monitor health and improve Soldier lethality, survivability, reduce weight, and improve affordability, mobility and comfort in combat and training/admin environments.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2011	FY 2012	FY 2013
Title: Individual Soldier Ballistic Protection (Moves to Program Element 0603827 VS4 in FY12) Articles: Description: Increase the Warfighter lethality and mobility by optimizing Soldier protection while effectively managing all life cycle aspects of Personal Protective Equipment (PPE). FY 2011 Accomplishments: Awarded seven contracts against Broad Agency Announcement (BAA) to develop, design, test and evaluate hard and soft armor component characteristics and identify potential solutions for mission tailorable Personal Protective Equipment (PPE). Integrated emerging data and lessons learned into the Soldier Protection System (SPS) Capability Development Document (CDD), a requirement for a fully integrated head, torso and extremity protection system. Completed market surveys and prototype evaluations to develop acquisition and contracting strategy to support 3Q FY11 Milestone B decision for the Family of Concealable Body Armor (FoCBA) and transitioned to Engineering and Manufacturing Development (EMD). Awarded contract to integrate self-diagnostic Smart Sensor Systems into hard armor plates. Continued efforts to characterize and synchronize the sensitivity, accuracy, repeatability, and reliability of the Smart Sensors for transition to EMD, (0604601/VS5) in FY12. Initiated blast testing and other characterization studies of potential solutions to provide improved extremity protection (including inner thigh and pelvic region) for blast threats. Awarded contracts to characterize critical performance attributes and manufacturing processes for the Enhanced Combat Helmet (ECH).	5.198 0	-	-
Title: Soldier Uniforms and Clothing Articles:	1.237 0	3.000 0	4.000

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army			DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 4: Advanced Component Development & Prototypes (ACD&P)		R-1 ITEM NOMENCLATURE PE 0603827A: Soldier Systems - Advanced Development		PROJECT S53: CLOTHING AND EQUIPMENT	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)			FY 2011	FY 2012	FY 2013
Description: Develop and provide superior and sustainable integrated clothing for the Soldier in a rapidly changing global environment. FY 2011 Accomplishments: Investigated and tested new technologies and domestically available fabrics relevant to flame resistance, Fire Resistant Environmental Ensemble (FREE) improvements, and T-shirts. Testing included laboratory and physical properties testing on over 60 different fabrics for use in military uniforms and equipment. Testing resulted in additional qualified rip-stop and twill fabrics being authorized for use in military uniforms. Investigated new technologies to improve Soldier lethality, survivability, reduce weight and improve affordability, mobility and comfort in combat and training/admin environments. Performed Flame Resistant (FR) and Permethrin testing on combat uniforms which verified adequate levels of FR protection and permetherin efficacy. FY 2012 Plans: Continue to mature new technology to reduce Soldier load and weight. Pursue and integrate Science & Technology efforts on fine gauge domestic wool to provide a natural Flame Resistant (FR) and no melt, no drip fabric that provides warmth when wet. Improve infrared performance and colorfastness of clothing to improve signature management. Test Permethrin treatment for use in the Improved Combat Vehicle Crewman Coverall (iCVC) and non-FR Army Combat Uniforms. FY 2013 Plans: Will continue to mature new technology to reduce Soldier load and weight. Will pursue improvement in concealment through integration of new fabric technologies to manage infrared signature. Continue to test improvements in Permethrin treatment and Flame Resistant (FR) capabilities for use in combat uniforms. Will integrate new technologies for environmental protection for Military Free Fall (MFF) parachutists.					
Title: Individual Equipment Articles:			0.500 0	2.220 0	3.189
Description: Develop and provide superior and sustainable integrated individual equipment for the Soldier in a rapidly changing global environment. FY 2011 Accomplishments: Investigated new technologies and fabrics relative to Soldier equipment such as load bearing equipment, gloves, and Nuclear, Biological, and Chemical (NBC) gear. Integrated printing and dying into the Tactical Assault Panel (TAP) allowing the TAP to be utilized with varying camouflage patterns and colors. FY 2012 Plans:					

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army							DATE: February 2012				
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>				R-1 ITEM NOMENCLATURE PE 0603827A: <i>Soldier Systems - Advanced Development</i>			PROJECT S53: <i>CLOTHING AND EQUIPMENT</i>				
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)											
Pursue an improvement in the universal parachutist's kit to accommodate the larger T-11 parachute. Pursue development of Knee and Elbow pads with improved durability, fit and comfort while reducing weight. Improve concealment through the integration of new technologies to manage infrared signature of fabrics, including nylon used in existing individual equipment. Initiate testing of the Individual Water Treatment Device (IWTD) Increment II (desalinization of sea water or salt water). FY 2013 Plans: Will evaluate, integrate and test the following Personnel Airdrop items: deconfliction tool for Military Free Fall (MFF) operations, enhanced Navigational Aid technology, MFF Droque System, a new universal harness and container for parachutists, T-11 connector links, Advanced Tactical Parachute System (ATPS) canopy cloth, and the Electronic Automatic Activation Device (EAAD). Will integrate new technologies to include FR face gel, high fidelity height sensor, and environmental protection for MFF parachutists. Will complete Individual Water Treatment Device Incr I (water filtration) and Incr II transition to EMD by 1QFY14 (0604601A/S60).							FY 2011	FY 2012	FY 2013		
Accomplishments/Planned Programs Subtotals							6.935	5.220	7.189		
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• 0604601A S60: <i>RDTE, 0604601A.S60, Clothing and Equipment</i>	9.711	6.322	5.478		5.478		1.967	2.057	2.092	Continuing	Continuing
• 121017 CFF OMA: <i>OMA, 121017, Central Funding and Fielding</i>	71.429	72.171	75.961		75.961		124.365	125.670	127.008	Continuing	Continuing
• MA7801 OPA: <i>OPA, MA7801, Advanced Tactical Parachute System</i>	41.591	52.185	45.497		45.497		44.234	42.016	40.234	Continuing	Continuing
D. Acquisition Strategy Programs pursue normal transition to Engineering and Manufacturing Development (EMD) and production. This Project continues to exercise competitively awarded contracts using best value source selection procedures.											
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 2013 Army											DATE: February 2012			
APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 4: Advanced Component Development & Prototypes (ACD&P)				R-1 ITEM NOMENCLATURE PE 0603827A: Soldier Systems - Advanced Development				PROJECT S53: CLOTHING AND EQUIPMENT						
Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 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	
In-House Support	TBD	PM SPIE:Ft. Belvoir, VA	11.134	1.150		1.000		-		1.000	Continuing	Continuing	Continuing	
Subtotal			11.134	1.150		1.000		-		1.000				
Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 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	
Engineering Support	MIPR	NSRDEC:Natick, MA	11.353	0.925		1.034		-		1.034	Continuing	Continuing	Continuing	
Development Contracts	C/Various	Various:Various	19.917	2.000		3.155		-		3.155	Continuing	Continuing	Continuing	
Subtotal			31.270	2.925		4.189		-		4.189				
Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 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	
Misc Support Costs	MIPR	Various:Various	6.177	-		0.500		-		0.500	Continuing	Continuing	Continuing	
Subtotal			6.177	-		0.500		-		0.500				
Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 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	
Testing Costs	TBD	various:Various	11.668	1.145		1.500		-		1.500	Continuing	Continuing	Continuing	
Subtotal			11.668	1.145		1.500		-		1.500				
			Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract	
Project Cost Totals			60.249	5.220		7.189		-		7.189				
Remarks														

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Army			DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>		R-1 ITEM NOMENCLATURE PE 0603827A: <i>Soldier Systems - Advanced Development</i>		PROJECT S53: <i>CLOTHING AND EQUIPMENT</i>	

	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	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
FoCBA Milestone B																												
Initiate Blast Testing for Extremity Protection (Pelvic Region)																												
Test & Evaluate MFF Environmental Clothing																												
Transition MFF Environmental clothing to EMD																												
Materiel Change to Soldier Knee & Elbow Protection System (SKEPS)																												
Improve Signature Mgmt (IR) Evaluation in Clothing & Equipment																												
IWTD - Desalinization/Filtration Testing																												
IWTD - transition to EMD																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Army			DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603827A: <i>Soldier Systems - Advanced Development</i>	PROJECT S53: <i>CLOTHING AND EQUIPMENT</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
FoCBA Milestone B	3	2011	3	2011
Initiate Blast Testing for Extremity Protection (Pelvic Region)	3	2011	4	2011
Test & Evaluate MFF Environmental Clothing	1	2013	2	2014
Transition MFF Environmental clothing to EMD	4	2014	4	2014
Materiel Change to Soldier Knee & Elbow Protection System (SKEPS)	1	2012	2	2012
Improve Signature Mgmt (IR) Evaluation in Clothing & Equipment	2	2012	4	2013
IWTD - Desalinization/Filtration Testing	1	2012	4	2013
IWTD - transition to EMD	1	2014	1	2014

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army									DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 4: Advanced Component Development & Prototypes (ACD&P)				R-1 ITEM NOMENCLATURE PE 0603827A: Soldier Systems - Advanced Development				PROJECT S54: SMALL ARMS IMPROVEMENT			
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
S54: SMALL ARMS IMPROVEMENT	4.805	4.577	4.690	-	4.690	5.432	5.469	5.100	5.186	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

The Small Arms Improvement Advanced Component Development and Prototypes (ACD&P) program provides funds to mature, demonstrate, test and evaluate emerging technology from Joint Service Small Arms Program (JSSAP), Project 627, Program Element 0603607A, (Budget Activity 3) and other domestic and foreign sources for small arms weapons systems and technology. Small arms systems include weapons ranging up to 40 millimeter in caliber. Current and future efforts focus on improvements designed to enhance lethality, target acquisition, fire control, training effectiveness and reliability of weapons to include ammunition when developing and/or evaluating standard and non-standard weapons. Focus areas include the maturing of technology through testing and evaluation of sub-system components or system prototypes which demonstrates light weight materials, wear resistant/protective coatings, observation/situational awareness improvements and equipment enhancements. Benefits include continuous improvements to small arms weapons, fire control equipment, optics, gun barrels, training devices, suppressors, component mounts, weapon mounts, and weapon/ammunition interface.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2011	FY 2012	FY 2013
Title: New Weapons Articles: Description: Description: Development of new small arms weapons FY 2011 Accomplishments: Evaluated on-going initiatives of the Joint Service Small Arms Program (JSSAP). Reviewed technology readiness level of the light weight machine gun. Provided program management guidance to support future Capability Development Documents. FY 2012 Plans: Develop a plan to transition advanced technology development of caseless/cased telescoped ammunition and light weight weapons initiatives from Joint Service Small Arms Program (JSSAP), Project 627, Program Element 0603607A, (Budget Activity 3) to PM Soldier Weapons. FY 2013 Plans: Will test and evaluate caseless/cased telescoped ammunition and/or light weight weapons initiatives to demonstrate sub-system components or system prototypes to address light weight requirements.	0.058 0	0.076 0	2.000
Title: Small Arms Weapons Enhancements Articles:	1.925 0	2.458 0	0.323

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 4: Advanced Component Development & Prototypes (ACD&P)	R-1 ITEM NOMENCLATURE PE 0603827A: Soldier Systems - Advanced Development	PROJECT S54: SMALL ARMS IMPROVEMENT		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<p>Description: Description: Enhancement developments of small arms weapons</p> <p>FY 2011 Accomplishments: M4 Reliability Study: Initiated M4 Reliability study which includes the barrel twist to enhance the performance of small arms weapons using lead free ammunition (M855A1-EPR). Conducted environmental, reliability and durability, high temperature and low temperature testing. Weapon Evaluation: Purchased several non-standard weapons for test and evaluation.</p> <p>FY 2012 Plans: Continue to test, evaluate and analyze on-going and new activities to enhance small arms weapons. Test and demonstrate system coatings. Conduct weapons studies for small arms weapons and manufacturing technologies. Continue to evaluate on-going characterization studies of standard and non-standard weapons. Conduct barrel studies to improve/enhance barrel life. M4 Reliability Study: Continue M4 Reliability testing to optimize lead free ammunition. Weapon Evaluation: Initiate characterization study of standard and non-standard weapons. Test and evaluate two non-standard rifles.</p> <p>FY 2013 Plans: Will continue to test, evaluate and analyze on-going and new activities to enhance small arms weapons. Will test and demonstrate system coatings. Will conduct weapon studies for small arms weapons and manufacturing technologies. Will continue to evaluate on-going characterization studies of standard and non-standard weapons. Will conduct barrel studies to improve/enhance barrel life. Will complete and transition barrel twist optimization to engineering and manufacturing development of weapon enhancements.</p>				
<p>Title: Ammunition</p> <p>Articles:</p> <p>Description: Description: Small arms ammunition improvement</p> <p>FY 2011 Accomplishments: Transitioned High Explosive Air Burst (HEAB) fuze enhancements into Engineering Manufacturing Development.</p>		0.025 0	-	-
<p>Title: Combat Optics</p> <p>Articles:</p> <p>Description: Description: Improvement of small arms combat optics</p> <p>FY 2011 Accomplishments: Transitioned potential reticule upgrades to Small Arms Improvements Engineering Manufacturing Development program.</p> <p>FY 2012 Plans:</p>		0.025 0	0.100 0	0.200

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603827A: <i>Soldier Systems - Advanced Development</i>	PROJECT S54: <i>SMALL ARMS IMPROVEMENT</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
Perform, evaluate and analyze combat optics and upgrade research and development efforts to mature optic technology. Provide engineering support and services to include engineering evaluations, verifications and validation of weapon system performance requirements. Studies include the Squad Common Optic (SCO) and Direct View Optic Resolution Standards. FY 2013 Plans: Will continue to perform, evaluate and analyze combat optics and upgrade research and development efforts to mature optic technology. Will provide engineering support and services to include engineering evaluations, verifications and validation of weapon system performance requirements. Studies, evaluation, and testing will continue on the Squad Common Optic (SCO) and Direct View Optic Resolution Standards. Transition SCO to Small Arms Improvement, Project S63, Program Element 0604601A (Budget Activity 5).				
Title: Fire Control Description: Description: Small arms fire control FY 2011 Accomplishments: Integrated Fire Control for Small Arms: Completed market surveys and engineering evaluation to establish the statement of objectives and the scope of work. Awarded three (3) competitive contracts for Phase I of the Integrated Fire Control/Integrated Ballistic Reticle project which initiated Trade Studies and preliminary design concepts with each contractor. FY 2012 Plans: Integrated Fire Control for Small Arms: Complete Phase I and initiate Phase II of the program. Design, develop and demonstrate the proposed ballistic reticle system by each of the three contractors for the integrated fire control for small arms program. Require engineering prototypes for complete demonstration/validation of fire control capability and integration for Army small arms to include but not limited to; the 5.56mm, 7.62mm and .50 caliber shoulder fired rifle systems. Perform down selection for Phase II of most qualified vendors and award at least two competitive contracts to complete Phase II. FY 2013 Plans: Integrated Fire Control for Small Arms: Will initiate Phase III of the Integrated Fire Control/Ballistic Reticle study. Will finalize design, fabricate prototypes, conduct producibility studies, and conduct testing. Will transition Integrated Fire Control to Small Arms Improvement, Project S63, Program Element 0604601A, (Budget Activity 5). Will continue to study, test, and evaluate fire control technologies.		Articles: 2.772 0	1.943 0	2.167
Accomplishments/Planned Programs Subtotals		4.805	4.577	4.690

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army									DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 4: Advanced Component Development & Prototypes (ACD&P)				R-1 ITEM NOMENCLATURE PE 0603827A: Soldier Systems - Advanced Development				PROJECT S54: SMALL ARMS IMPROVEMENT			
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• Small Arms Improvement: RDTE S63, Program Element 0604601A - Infantry Support Weapons	18.705	18.150	19.617		19.617		14.560	14.601	14.740	Continuing	Continuing
• Joint Service Small Arms Program: RDTE 627, Program Element 0603607A - Joint Service Small Arms Program (JSSAP)	8.236	7.674	6.095		6.095		7.915	6.500	7.173	Continuing	Continuing
D. Acquisition Strategy											
Primary strategy is to study, develop, demonstrate and evaluate emerging technologies that ultimately lead to enhancing/improving the small arms inventory.											
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 2013 Army										DATE: February 2012			
APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 4: Advanced Component Development & Prototypes (ACD&P)				R-1 ITEM NOMENCLATURE PE 0603827A: Soldier Systems - Advanced Development				PROJECT S54: SMALL ARMS IMPROVEMENT					
Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 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	Allot	PM Soldier Weapons,;Picatinny Arsenal	1.415	0.411		0.425		-		0.425	Continuing	Continuing	Continuing
Subtotal			1.415	0.411		0.425		-		0.425			
Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 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
Hardware Development	MIPR	Army Research Development Engineering Centers,;Multiple	6.033	1.302		1.320		-		1.320	Continuing	Continuing	Continuing
Subtotal			6.033	1.302		1.320		-		1.320			
Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 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
Engineering	MIPR	Army Research Development Engineering Centers,;Multiple	7.607	1.688		1.725		-		1.725	Continuing	Continuing	Continuing
Subtotal			7.607	1.688		1.725		-		1.725			
Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 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
Developmental Testing	MIPR	Army Test and Evaluation Centers,;Multiple	3.981	1.176		1.220		-		1.220	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Army											DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>				R-1 ITEM NOMENCLATURE PE 0603827A: <i>Soldier Systems - Advanced Development</i>				PROJECT S54: <i>SMALL ARMS IMPROVEMENT</i>					

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 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
Subtotal			3.981	1.176		1.220		-		1.220			

	Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	19.036	4.577		4.690		-		4.690			

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Army	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603827A: <i>Soldier Systems - Advanced Development</i>	PROJECT S54: <i>SMALL ARMS IMPROVEMENT</i>
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	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	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
Caseless/Cased Telescoped Ammunition Technologies																												
Light Weight Weapons																												
Non-Standard Weapon Studies																												
Improved Weapons Coating																												
Squad Common Optic																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Army			DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603827A: <i>Soldier Systems - Advanced Development</i>	PROJECT S54: <i>SMALL ARMS IMPROVEMENT</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Caseless/Cased Telescoped Ammunition Technologies	3	2011	4	2017
Light Weight Weapons	3	2011	4	2017
Non-Standard Weapon Studies	4	2011	4	2017
Improved Weapons Coating	1	2012	4	2017
Squad Common Optic	1	2012	2	2013

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army								DATE: February 2012			
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>				R-1 ITEM NOMENCLATURE PE 0603827A: <i>Soldier Systems - Advanced Development</i>				PROJECT VS4: <i>SOLDIER PROTECTIVE EQUIPMENT</i>			
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
VS4: <i>SOLDIER PROTECTIVE EQUIPMENT</i>	-	1.875	14.984	-	14.984	11.583	12.654	4.604	10.270	Continuing	Continuing
Quantity of RDT&E Articles											
A. Mission Description and Budget Item Justification											
This funding supports the Integrated Systems Design (ISD) phase of Engineering and Manufacturing Development (EMD) efforts to evaluate and integrate technologies and representative or prototype systems that help expedite Individual Soldier Ballistic Protection technology transition from the laboratory to operational use. It continues incremental improvement of body armor to reduce Soldier load and improve comfort/functionality based on operational feedback. It advances efforts to mature manufacturing readiness levels of advanced high performance fibers and composites for next-generation combat helmets, and supports transition to System Capability and Manufacturing Process Demonstration (SC&MPD) phase of EMD. It continues to increase eyewear ballistics/blast protection, and incorporates advancements in laser eye protection, as well as advancements in variable transition lens technology into ballistic goggles and spectacles.											
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)								FY 2011	FY 2012	FY 2013	
Title: Soldier Protective Equipment								-	1.875	14.984	
Articles:									0		
Description: Newly established funding line. Effort was previously executed in Program Element 0603827 S53. Effort is to increase the Warfighter lethality and mobility by optimizing Soldier protection while effectively managing all life cycle aspects of Personal Protective Equipment (PPE).											
FY 2012 Plans: Initiate Integrated Systems Design (ISD) of Soldier Protection Mission Tailorable Body Armor (MTBA) to replace current generation of Improved Outer Tactical Vest (IOTV), Plate Carrier and Helmets for transition to 0604601 VS5 EMD in FY13. Conduct technology demonstrations (Soldier Protection Demonstrations, blast & ballistic characterization, etc.) to support refinement of critical system characteristics, including system performance (weight, ballistic/blast protection, flexibility and modularity) for integrated head & face protection capability. Evaluate technologies that reduce weight/bulk and increase durability/reliability.											
FY 2013 Plans: Will conduct Soldier Protection Demonstrations (Human Factors and Limited User Evaluations) to assess technology readiness levels of Soldier Protection System (SPS) components to meet threshold requirements. Will continue to evaluate and mature subsystem technologies across the portfolio of Personal Protective Equipment (PPE) including extremity, vital torso, torso and face protection from emerging ballistic/blast threats. Efforts will focus on reducing weight and bulk, and increasing durability in terms of functional wear life. Will complete integration of Lightweight Enhanced Small Arms Protective Inserts (ESAPI), including											

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army							DATE: February 2012					
APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 4: Advanced Component Development & Prototypes (ACD&P)			R-1 ITEM NOMENCLATURE PE 0603827A: Soldier Systems - Advanced Development			PROJECT VS4: SOLDIER PROTECTIVE EQUIPMENT						
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)							FY 2011		FY 2012		FY 2013	
the integration of self-diagnostic Smart Sensor and transition to 0604601 VS5 EMD. Transition other maturing technologies to 0604601 VS5 EMD beginning in FY 2013, to include Anthropometry and Range of Motion, Female IOTV and Plate Shapes.												
Accomplishments/Planned Programs Subtotals							-		1.875		14.984	
C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost	
• Soldier Protective Equipment VS5: RDTE, 0604601A.VS5, Soldier Protective Equipment		3.986	11.814		11.814		7.227	12.700	4.750	0.000	53.754	
• Central Funding & Fielding: OMA, 121017, Central Funding & Fielding	71.429	72.171	75.961		75.961		124.365	125.670	127.008	0.000	671.965	
D. Acquisition Strategy Programs pursue refinement and integration of new technology at the component and system level, culminating in the transition of mature technologies (TRL 6-7) to EMD and production. This project continues to exercise competitively awarded contracts using best value source selection procedures.												
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 2013 Army											DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 4: Advanced Component Development & Prototypes (ACD&P)				R-1 ITEM NOMENCLATURE PE 0603827A: Soldier Systems - Advanced Development				PROJECT VS4: SOLDIER PROTECTIVE EQUIPMENT					
Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 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
SETA Support	TBD	PM SPE:Ft. Belvoir, VA	-	0.100		0.100		-		0.100	Continuing	Continuing	Continuing
Subtotal			-	0.100		0.100		-		0.100			
Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 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
Dev/Sys Engineering Spt	MIPR	Various:Various	-	0.375		2.484		-		2.484	Continuing	Continuing	0.000
Dev/Integ Contracts	TBD	Various:various	-	0.700		10.000		-		10.000	Continuing	Continuing	Continuing
Subtotal			-	1.075		12.484		-		12.484			
Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 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
Misc Support Costs	MIPR	Various:various	-	0.300		0.600		-		0.600	Continuing	Continuing	Continuing
Subtotal			-	0.300		0.600		-		0.600			
Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 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
DT (Ballistic/Non-ballistic) & EOA Testing	MIPR	Various:Various	-	0.400		1.800		-		1.800	Continuing	Continuing	Continuing
Subtotal			-	0.400		1.800		-		1.800			
			Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			-	1.875		14.984		-		14.984			

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Army						DATE: February 2012			
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>			R-1 ITEM NOMENCLATURE PE 0603827A: <i>Soldier Systems - Advanced Development</i>			PROJECT VS4: <i>SOLDIER PROTECTIVE EQUIPMENT</i>			
	Total Prior Years Cost	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract	
Remarks									

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Army			DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>		R-1 ITEM NOMENCLATURE PE 0603827A: <i>Soldier Systems - Advanced Development</i>	PROJECT VS4: <i>SOLDIER PROTECTIVE EQUIPMENT</i>

	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	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
Integrated Systems Design of Soldier Protection Sys (SPS) Incr 1																												
Ballistic Test of SPS Incr 1 Hard Armor subsystems. Conduct EOA of prototypes																												
Transition Mature SPS Incr 1 components and sub systems to SC&MPD phase of EMD																												
Initiate SC&MPD phase of EMD of Lightweight ESAPI and Smart Sensor																												
Transition Lightweight ESAPI and Smart Sensor to SC&MPD Phase of EMD																												
Integrated Systems Design of Soldier Protection Sys (SPS) Inc 2																												
Ballistic Test of SPS Incr 2 Hard Armor subsystems. Conduct EOA of prototypes																												
Transition Mature SPS Incr 2 components and sub systems to SC&MPD phase of EMD																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Army			DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603827A: <i>Soldier Systems - Advanced Development</i>	PROJECT VS4: <i>SOLDIER PROTECTIVE EQUIPMENT</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Integrated Systems Design of Soldier Protection Sys (SPS) Incr 1	1	2012	3	2014
Ballistic Test of SPS Incr 1 Hard Armor subsystems. Conduct EOA of prototypes	1	2012	3	2014
Transition Mature SPS Incr 1 components and sub systems to SC&MPD phase of EMD	4	2014	4	2014
Initiate SC&MPD phase of EMD of Lightweight ESAPI and Smart Sensor	1	2013	3	2013
Transition Lightweight ESAPI and Smart Sensor to SC&MPD Phase of EMD	4	2013	4	2013
Integrated Systems Design of Soldier Protection Sys (SPS) Inc 2	4	2014	2	2016
Ballistic Test of SPS Incr 2 Hard Armor subsystems. Conduct EOA of prototypes	2	2015	1	2017
Transition Mature SPS Incr 2 components and sub systems to SC&MPD phase of EMD	2	2017	2	2017