

**UNCLASSIFIED**

<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2014 Army	<b>DATE:</b> April 2013
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APPROPRIATION/BUDGET ACTIVITY					R-1 ITEM NOMENCLATURE							
2040: <i>Research, Development, Test &amp; Evaluation, Army</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>					PE 0603827A: <i>Soldier Systems - Advanced Development</i>							
COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 <sup>#</sup>	FY 2014 Base	FY 2014 OCO <sup>##</sup>	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
Total Program Element	-	23.516	32.050	14.159	-	14.159	23.133	17.176	16.712	66.660	Continuing	Continuing
S49: <i>Ground Soldier System (GSS)</i>	-	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	44.500	Continuing	Continuing
S51: <i>Aircrew Integrated Sys Ad</i>	-	0.150	0.141	0.164	-	0.164	0.164	0.157	0.160	2.157	Continuing	Continuing
S52: <i>Soldier Support Equipment - Ad</i>	-	5.911	5.046	0.410	-	0.410	1.718	1.146	0.000	0.000	Continuing	Continuing
S53: <i>Clothing And Equipment</i>	-	11.307	7.189	5.637	-	5.637	7.836	5.548	5.096	7.153	Continuing	Continuing
S54: <i>Small Arms Improvement</i>	-	4.362	4.690	4.260	-	4.260	6.172	5.569	5.186	5.700	Continuing	Continuing
VS4: <i>Soldier Protective Equipment</i>	-	1.786	14.984	3.688	-	3.688	7.243	4.756	6.270	7.150	Continuing	Continuing

<sup>#</sup> FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

<sup>##</sup> The FY 2014 OCO Request will be submitted at a later date

**Note**

Change Summary Explanation:

Fiscal Year 2012: Program Increase of \$6.087 million to Project S53 for T11/C17 Drop Test and Program Decrease of \$0.601 million to higher priority Army efforts.

Fiscal Year 2014: Program Decreases of \$2.304 million to Project S52 Soldier Support Equipment AD, \$1.585 million to Project S53, \$1.172 million to Project S54 and \$7.895 million to Project VS4 Soldier Protective Equipment were realigned to higher priority Army efforts.

**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) The Nett Warrior (NW) program leverages commercial smart devices and secure Army tactical radios to provide the dismounted leader an integrated mission command and situational awareness system for use during combat operations.

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.

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2014 Army **DATE:** April 2013

## 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 funding (Soldier Support Equipment) supports system development and testing for the Gunshot Detection (GDS). Active Protection System (APS)/Hostile Fire Detection (HFD) program intends to build off the Gunshot Detection System capabilities, and include additional vehicle threats and countermeasures.

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 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>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014 Base</b>	<b>FY 2014 OCO</b>	<b>FY 2014 Total</b>
Previous President's Budget	18.030	32.050	27.115	-	27.115
Current President's Budget	23.516	32.050	14.159	-	14.159
Total Adjustments	5.486	0.000	-12.956	-	-12.956
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	5.486	-	-12.956	-	-12.956

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army									DATE: April 2013			
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 S49: Ground Soldier System (GSS)			
COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 <sup>#</sup>	FY 2014 Base	FY 2014 OCO <sup>##</sup>	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
S49: Ground Soldier System (GSS)	-	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	44.500	Continuing	Continuing
Quantity of RDT&E Articles												
# FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012												
## The FY 2014 OCO Request will be submitted at a later date												
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 Colonel Robert C. Nett), also known as the Ground Soldier System (GSS) Program, leverages commercial smart devices and secure Army tactical radios to provide the dismounted leader an integrated mission command and situational awareness system for use during combat operations. The NW system provides operators electronic, real-time information on friendly positions; information about enemy activity and movement; navigational data and map imagery; and other mission related graphics which effectively puts the power of the entire Army tactical network in the hands of the dismounted leader. The NW system also provides the same integrated mission command capability to tactical vehicle mounted leaders so that when they dismount their vehicles, they still have access to the common operating picture (COP) and have full situational awareness. This capability provides unparalleled situational awareness and understanding to the dismounted leader allowing for faster, more accurate decisions and reduced fratricide in the tactical fight.  Beginning in FY 18, this project funds the development and prototyping of the next generation of Nett Warrior, leveraging the extensive technology improvements that will occur over the next five years.												
B. Accomplishments/Planned Programs (\$ in Millions) N/A												
C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost	
• OPA 3: OPA 3 Ground Soldier System	63.500	103.317	81.680		81.680	100.724	103.416	50.246	50.298	Continuing	Continuing	
• RDT&E, PE 0604827A S75: RDT&E, PE 0604827A S75 - Ground Soldier Ensemble	37.604	46.797	41.063		41.063	18.923	19.043	18.237	0.596	Continuing	Continuing	

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Army										<b>DATE:</b> April 2013	
<b>APPROPRIATION/BUDGET ACTIVITY</b> 2040: <i>Research, Development, Test &amp; Evaluation, Army</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>					<b>R-1 ITEM NOMENCLATURE</b> PE 0603827A: <i>Soldier Systems - Advanced Development</i>			<b>PROJECT</b> S49: <i>Ground Soldier System (GSS)</i>			
<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u> <u>Base</u>	<u>FY 2014</u> <u>OCO</u>	<u>FY 2014</u> <u>Total</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
<b>Remarks</b>											
<b>D. Acquisition Strategy</b> <p>The Nett Warrior (NW) program provides unparalleled situational awareness and mission command to dismounted combat leaders through an integrated computer, display, power source and radio. The NW program executed a MS A in FY09 and began three competing TD phase contracts leading to development and operational testing FY10-11. The NW MS C was approved 3 April 2012 followed by a low rate Capability Set (CS) 14 production award. Conduct Developmental Test and Evaluation planned for 4QFY12-1QFY13, followed by 1QFY13 Initial Operational Test &amp; Evaluation (IOT&amp;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 a production decision in the 2QFY13 to procure the CS14 quantity of NW systems and support. NW also continues to reduce size, weight and power through a semi-annual integration and evaluation and test of the latest commercial smart device technologies which evolve continuously. This is the next increment of Nett Warrior that will leverage technology available in the FY 18 time frame.</p>											
<b>E. Performance Metrics</b> <p>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.</p>											

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2014 Army</b>												<b>DATE:</b> April 2013			
<b>APPROPRIATION/BUDGET ACTIVITY</b> 2040: <i>Research, Development, Test &amp; Evaluation, Army</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>						<b>R-1 ITEM NOMENCLATURE</b> PE 0603827A: <i>Soldier Systems - Advanced Development</i>						<b>PROJECT</b> S49: <i>Ground Soldier System (GSS)</i>			
<b>Management Services (\$ in Millions)</b>				<b>FY 2012</b>		<b>FY 2013</b>		<b>FY 2014 Base</b>		<b>FY 2014 OCO</b>		<b>FY 2014 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>All Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
PM Soldier Warrior software integration of NW program	MIPR	Various:Various	16.707	-		-		-		-		-	Continuing	Continuing	Continuing
PM Soldier Warrior oversight of NW program	Various	Various:Various	24.986	-		-		-		-		-	Continuing	Continuing	Continuing
<b>Subtotal</b>			41.693	0.000		0.000		0.000		0.000		0.000			
<b>Product Development (\$ in Millions)</b>				<b>FY 2012</b>		<b>FY 2013</b>		<b>FY 2014 Base</b>		<b>FY 2014 OCO</b>		<b>FY 2014 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>All Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
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
<b>Subtotal</b>			39.913	0.000		0.000		0.000		0.000		0.000	0.000	39.913	0.000
<b>Support (\$ in Millions)</b>				<b>FY 2012</b>		<b>FY 2013</b>		<b>FY 2014 Base</b>		<b>FY 2014 OCO</b>		<b>FY 2014 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>All Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
PM Nett Warrior support	MIPR	CERDEC, CECOM, TACOM, ARL, NSRDEC, etc.:Various	2.522	-		-		-		-		-	Continuing	Continuing	Continuing

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis:</b> PB 2014 Army												<b>DATE:</b> April 2013		
<b>APPROPRIATION/BUDGET ACTIVITY</b> 2040: Research, Development, Test & Evaluation, Army BA 4: Advanced Component Development & Prototypes (ACD&P)							<b>R-1 ITEM NOMENCLATURE</b> PE 0603827A: Soldier Systems - Advanced Development					<b>PROJECT</b> S49: Ground Soldier System (GSS)		

  

Support (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
PM Nett Warrior support	MIPR	Various support contracts:Various	14.649	-		-		-		-		-	Continuing	Continuing	Continuing
<b>Subtotal</b>			17.171	0.000		0.000		0.000		0.000		0.000			

  

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	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	-		-		-		-		-	Continuing	Continuing	Continuing
<b>Subtotal</b>			13.255	0.000		0.000		0.000		0.000		0.000			

  

			All Prior Years	FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>			112.032	0.000		0.000		0.000		0.000		0.000			

  

**Remarks**

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army										DATE: April 2013		
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)	All Prior Years	FY 2012	FY 2013 <sup>#</sup>	FY 2014 Base	FY 2014 OCO <sup>##</sup>	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
S51: Aircrew Integrated Sys Ad	-	0.150	0.141	0.164	-	0.164	0.164	0.157	0.160	2.157	Continuing	Continuing
Quantity of RDT&E Articles												
# FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012												
## The FY 2014 OCO Request will be submitted at a later date												
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, wireless personal area networks, lightweight protective clothing, and miniaturized communication devices.												
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)										FY 2012	FY 2013	FY 2014
<b>Title:</b> Aircrew Integrated Systems (ACIS) Advanced Development  <b>Articles:</b>  <b>Description:</b> Advanced Component Development and Prototyping (ACDP) of critical aircrew support systems technology improvements and Advanced Development (AD) and risk reduction efforts required for transition into the Engineering Manufacturing Development (EMD) phase.  <b>FY 2012 Accomplishments:</b> Funded laboratories to monitor and influence Air SS technologies to include lightweight environmental cooling, integrated wearable power, and lightweight protective clothing technologies into the EMD phase of Air SS.  <b>FY 2013 Plans:</b> Fund laboratories to monitor and influence Air SS technologies to include wireless personal area network technologies and lightweight protective clothing materials into the EMD phase.  <b>FY 2014 Plans:</b> Will fund laboratories to monitor and influence Air SS technologies to include advanced wide field of view/high resolution helmet mounted display technologies and miniaturized communication devices into Air SS EMD phase.										0.150	0.141	0.164
										0	0	
Accomplishments/Planned Programs Subtotals										0.150	0.141	0.164

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Army										<b>DATE:</b> April 2013	
<b>APPROPRIATION/BUDGET ACTIVITY</b> 2040: <i>Research, Development, Test &amp; Evaluation, Army</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>				<b>R-1 ITEM NOMENCLATURE</b> PE 0603827A: <i>Soldier Systems - Advanced Development</i>				<b>PROJECT</b> S51: <i>Aircrew Integrated Sys Ad</i>			

  

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

<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u> <u>Base</u>	<u>FY 2014</u> <u>OCO</u>	<u>FY 2014</u> <u>Total</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• ACIS Engineering Development: <i>RDTE, A PE 0604601A PROJ</i> <i>S61-SDD</i>	10.705	17.175	14.057		14.057	20.073	11.334	9.883	15.948	Continuing	Continuing
• Aircrew Integrated Systems: <i>Aircraft Procurement, Army SSN</i> <i>AZ3110 - ACIS</i>	62.746	77.381	45.841		45.841	16.347	14.080	0.008	2.920	Continuing	Continuing

**Remarks**

**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; an 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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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis:</b> PB 2014 Army												<b>DATE:</b> April 2013		
<b>APPROPRIATION/BUDGET ACTIVITY</b> 2040: <i>Research, Development, Test &amp; Evaluation, Army</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>						<b>R-1 ITEM NOMENCLATURE</b> PE 0603827A: <i>Soldier Systems - Advanced Development</i>				<b>PROJECT</b> S51: <i>Aircrew Integrated Sys Ad</i>				

  

Management Services (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
PM Administration	RO	Various Government:Huntsville, AL and Natick, MA	2.309	0.150		0.141		0.164		-		0.164	Continuing	Continuing	Continuing
<b>Subtotal</b>			2.309	0.150		0.141		0.164		0.000		0.164			

  

**Remarks**  
Note: FY13 - \$141,000 was requested for PM Administration.

  

	All Prior Years	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>	2.309	0.150	0.141	0.164	0.000	0.164			

  

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army									DATE: April 2013			
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)	All Prior Years	FY 2012	FY 2013 <sup>#</sup>	FY 2014 Base	FY 2014 OCO <sup>##</sup>	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
S52: Soldier Support Equipment - Ad	-	5.911	5.046	0.410	-	0.410	1.718	1.146	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles												
# FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012												
## The FY 2014 OCO Request will be submitted at a later date												
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. The Active Protection System (APS)/Hostile Fire Detection (HFD) program intends to build off the Gunshot Detection System capabilities, and include additional vehicle threats and countermeasures. The Capability Development Document (CDD) is currently in development at Mission Center of Excellence (MCOE).												
The FY 2014 Base funding in the amount of \$0.410 million will be in support of the Active Protection System (APS)/Hostile Fire Detection (HFD) Capability Development Document (CDD) currently in development at Mission Center of Excellence (MCOE).												
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)									FY 2012	FY 2013	FY 2014	
Title: System Characterization Study  Articles:  Description: Study to be conducted to ascertain system performance, Technology Readiness Level (TRL) and Analysis of Alternatives (AoA) and associated Market Research of existing technologies.  FY 2012 Accomplishments: 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 Readiness Level (TRL) and market availability of sensors and their performance.									2.886 0	0.000	0.000	
Title: Engineering Documentation  Articles:  Description: Development of required engineering documentation for this Program of Record (POR) and associated Program Management Office (PMO) support.  FY 2012 Accomplishments:									1.749 0	1.521 0	0.410	

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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 2012	FY 2013	FY 2014		
The FY2012 funds will be used for the development of a Performance Specification, Interface Control Document (ICD) and Performance Work Statement (PWS).											
FY 2013 Plans: The FY2013 funds will provide for Performance Specification and Interface Control Documentation..											
FY 2014 Plans: The FY2014 funds will provide for performance specification and analysis in support of the Capability Development Document (CDD) for Active Protection System (APS)/Hostile Fire Detection (HFD) requirements.											
Title: Engineering Services and Test Support							1.276	1.439	0.000		
Articles:							0	0			
Description: Perform engineering analysis and provide test support to Technology Readiness Assessment (TRA).											
FY 2012 Accomplishments: The FY2012 funds will be used to support the System Characterization Study. Additionally, the funds will support Subject Matter Experts (SME) in IR and Acoustic technologies to provide analysis and support to the System Characterization.											
FY 2013 Plans: The FY2013 funds will be used to test Electro-Optical systems and Engineering Services.											
Title: Source Selection Activities							0.000	2.086	0.000		
Articles:								0			
Description: Prepatation of acquisition and regulatory documentation.											
FY 2013 Plans: The FY2013 funds will be used for Logistics and Program Management planning and documentation and to develop the acquisition strategy											
Accomplishments/Planned Programs Subtotals							5.911	5.046	0.410		
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
• SSN: BA3301 Gunshot Detection	11.000	2.332								Continuing	Continuing
Syste: SSN: BA3301 Gunshot											

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Army										<b>DATE:</b> April 2013	
<b>APPROPRIATION/BUDGET ACTIVITY</b> 2040: <i>Research, Development, Test &amp; Evaluation, Army</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>					<b>R-1 ITEM NOMENCLATURE</b> PE 0603827A: <i>Soldier Systems - Advanced Development</i>			<b>PROJECT</b> S52: <i>Soldier Support Equipment - Ad</i>			
<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u> <u>Base</u>	<u>FY 2014</u> <u>OCO</u>	<u>FY 2014</u> <u>Total</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
<i>Detection System (GDS) Program of Record</i>											
<b>Remarks</b>											
<b>D. Acquisition Strategy</b>											
The FY 2014 funds will be used to support the Active Protection System (APS)/Hostile Fire Detection (HFD) Capability Development Document (CDD) currently in development at MCOE. The APS/HFD program intends to build off the Gunshot Detection System capabilities, and include additional vehicle threats and countermeasures. MCOE expects to obtain APS/HFD CDD approval in late FY2014.											
<b>E. Performance Metrics</b>											
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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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2014 Army</b>												<b>DATE:</b> April 2013			
<b>APPROPRIATION/BUDGET ACTIVITY</b> 2040: Research, Development, Test & Evaluation, Army BA 4: Advanced Component Development & Prototypes (ACD&P)						<b>R-1 ITEM NOMENCLATURE</b> PE 0603827A: Soldier Systems - Advanced Development						<b>PROJECT</b> S52: Soldier Support Equipment - Ad			
<b>Management Services (\$ in Millions)</b>				<b>FY 2012</b>		<b>FY 2013</b>		<b>FY 2014 Base</b>		<b>FY 2014 OCO</b>		<b>FY 2014 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>All Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
Program Management / Milestone Preparation	Various	PM FLIR:Ft. Belvoir, VA	0.000	0.947	Feb 2012	0.449		-		-		-	Continuing	Continuing	Continuing
<b>Subtotal</b>			0.000	0.947		0.449		0.000		0.000		0.000			
<b>Product Development (\$ in Millions)</b>				<b>FY 2012</b>		<b>FY 2013</b>		<b>FY 2014 Base</b>		<b>FY 2014 OCO</b>		<b>FY 2014 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>All Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
System Characterization Study	C/TBD	Night Vistion Electronics Sensors Directorate (NVESD):FT Belvoir VA	0.000	1.939	Apr 2012	-		-		-		-	Continuing	Continuing	Continuing
Engineering Documentation	Various	PM Ground Sensors:Ft. Belvoir, VA	0.000	-		-		0.410	Dec 2013	-		0.410	Continuing	Continuing	Continuing
<b>Subtotal</b>			0.000	1.939		0.000		0.410		0.000		0.410			
<b>Support (\$ in Millions)</b>				<b>FY 2012</b>		<b>FY 2013</b>		<b>FY 2014 Base</b>		<b>FY 2014 OCO</b>		<b>FY 2014 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>All Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
Engineering Documentation	C/TBD	TBD:TBD	0.000	1.749	Mar 2012	1.521		-		-		-	Continuing	Continuing	Continuing
Engineering Services and Test Support	C/TBD	TBD:TBD	0.000	1.276	Apr 2012	0.990		-		-		-	0.000	2.266	0.000
Source Selection Support	C/TBD	Program Management:Ft Belvoir	0.000	-		2.086		-		-		-	0.000	2.086	0.000
<b>Subtotal</b>			0.000	3.025		4.597		0.000		0.000		0.000			

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Army										DATE: April 2013				
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				
	All Prior Years	FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract	
Project Cost Totals	0.000	5.911		5.046		0.410		0.000		0.410				

Remarks

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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2014 Army			<b>DATE:</b> April 2013		
<b>APPROPRIATION/BUDGET ACTIVITY</b> 2040: <i>Research, Development, Test &amp; Evaluation, Army</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>			<b>R-1 ITEM NOMENCLATURE</b> PE 0603827A: <i>Soldier Systems - Advanced Development</i>		
			<b>PROJECT</b> S52: <i>Soldier Support Equipment - Ad</i>		

	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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
System Characterization Study																												
Engineering Documentation																												
Active Protection System (APS)/Hostile Fire Detection (HFD) Requirements Develop																												

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2014 Army			<b>DATE:</b> April 2013
<b>APPROPRIATION/BUDGET ACTIVITY</b> 2040: <i>Research, Development, Test &amp; Evaluation, Army</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603827A: <i>Soldier Systems - Advanced Development</i>	<b>PROJECT</b> S52: <i>Soldier Support Equipment - Ad</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
System Characterization Study	2	2012	2	2013
Engineering Documentation	2	2013	4	2014
Active Protection System (APS)/Hostile Fire Detection (HFD) Requirements Develop	1	2014	4	2016



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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army										DATE: April 2013		
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			
COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 <sup>#</sup>	FY 2014 Base	FY 2014 OCO <sup>##</sup>	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
S53: Clothing And Equipment	-	11.307	7.189	5.637	-	5.637	7.836	5.548	5.096	7.153	Continuing	Continuing
Quantity of RDT&E Articles												
# FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012												
## The FY 2014 OCO Request will be submitted at a later date												
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 survivability, reduce weight, and improve affordability, mobility and comfort in combat and training/administrative environments.												
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)										FY 2012	FY 2013	FY 2014
Title: Soldier Uniforms and Clothing										3.000	4.000	3.122
										Articles: 0	0	
Description: Develop and provide superior and sustainable integrated clothing for the Soldier in a rapidly changing global environment.												
FY 2012 Accomplishments: Continued maturing new technology to reduce Soldier load and weight. Pursued and integrated 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. Improved infrared performance and colorfastness of clothing to improve signature management. Tested Permethrin treatment for use in Army Combat Uniform (ACU), ACU-Alternative (ACU-A), Improved Combat Vehicle Crewman Coveralls (iCVC), and Army Combat Pant (ACP).												
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. Will continue to test improvements in permethrin treatment and Flame Resistance (FR) capabilities for use in combat uniforms. Conduct initial evaluation of MFF parachutist Extreme Environmental Protective Kit (gloves and face protection).												
FY 2014 Plans:												

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013		
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 2012	FY 2013	FY 2014
Will continue to fund maturing of new technology to reduce Soldier load and weight. Will integrate new technologies and procure prototypes for environmental protection for Military Free Fall (MFF) parachutists caused by higher altitudes and longer duration High Altitude, High Opening (HAHO) MFF operations. Will procure prototypes, conduct technical testing and cold weather chamber testing. Will continue to test improvements in permethrin treatment and Flame Resistance (FR) capabilities for use in combat uniforms to adapt to improvements in textile technology.				
Environmental Clothing and Equipment. Will conduct market survey, conduct technical testing and procure prototypes of flame resistant layers of Extended Cold Weather Protective System (ECWPS) to combine Extended Cold Weather Clothing System (ECWCS) and Flame Resistant Environmental Ensemble (FREE). Will conduct Small Business Innovative Research (SBIR) user evaluation of wool boot socks. Will conduct market survey, procure prototypes and conduct technical testing on Extreme Cold Weather Gloves.				
Title: Individual Equipment		8.307	3.189	2.515
Articles:		0	0	
Description: Develop and provide superior and sustainable integrated individual equipment for the Soldier in a rapidly changing global environment.				
FY 2012 Accomplishments: Load Carriage/NBC/Hydration. Improved knee pads for increased durability, fit, comfort, and decreased weight. Improved concealment through the integration of new technologies to manage infrared signature of fabrics, including nylon used in individual equipment. Initiated testing of the Individual Water Treatment Device (IWTD) Increment I (Filtration).				
Environmental Clothing and Equipment. Evaluated new technologies to improve thermal efficiency while reducing bulk of the Modular Sleep System.				
FY 2013 Plans: Environmental Clothing and Equipment. Will evaluate new technologies to improve thermal efficiency while reducing bulk of the Modular Sleep System.				
Personnel Airdrop. Will award contract for prototype assets for the Parachutist Navigation System (PARANAVSYS)				
FY 2014 Plans: Load Carriage/NBC/Hydration. Will initiate prototype evaluation of next generation Modular Lightweight Load-Carrying Equipment (MOLLE) systems to reduce overall weight on Soldiers and be compatible with the Soldier Protection System.				

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Army										<b>DATE:</b> April 2013		
<b>APPROPRIATION/BUDGET ACTIVITY</b> 2040: <i>Research, Development, Test &amp; Evaluation, Army</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>				<b>R-1 ITEM NOMENCLATURE</b> PE 0603827A: <i>Soldier Systems - Advanced Development</i>				<b>PROJECT</b> S53: <i>Clothing And Equipment</i>				
<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>										<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
Personnel Airdrop. Will procure prototypes and conduct technical testing on Military Free Fall (MFF) Electronic Automatic Activation Device (EAAD). Will procure prototype items and conduct technical tests on T-11 Canopy Release Assembly (CRA) to enable static line parachutist to quickly disengage from his parachute upon landing. Will procure prototype items, conduct technical tests and procure prototypes of a deconfliction and tracking tool for Military Free Fall (MFF) operations to ensure MFF parachutist can land in proximity to a simultaneous cargo drop. Will procure prototype test assets and conduct test on Military Free Fall (MFF) Increased Pressure Oxygen bottles to support increased durations and altitudes of MFF operations. Will procure prototypes and conduct technical test on Military Free Fall (MFF) High Fidelity Height Sensors and to assess reduction in T-11 canopy size.												
<b>Accomplishments/Planned Programs Subtotals</b>										11.307	7.189	5.637
<b>C. Other Program Funding Summary (\$ in Millions)</b>												
<b>Line Item</b>	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014 Base</b>	<b>FY 2014 OCO</b>	<b>FY 2014 Total</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	
• 0604601A S60: <i>RDTE, 0604601A.S60, Clothing and Equipment</i>	6.316	5.537	5.450		5.450	4.563	3.683	6.065	10.965	Continuing	Continuing	
• 121017 CFF OMA: <i>OMA, 121017, Central Funding and Fielding</i>	67.248	73.639	103.484		103.484	161.773	165.014	217.679	205.582	Continuing	Continuing	
• MA7801 OPA: <i>OPA, MA7801, Advanced Tactical Parachute System</i>	52.185	46.130	46.650		46.650	44.939	42.656	40.859	12.000	Continuing	Continuing	
<b>Remarks</b>												
<b>D. Acquisition Strategy</b>												
Programs pursue normal transition through Engineering and Manufacturing Development (EMD) to production. This Project continues to exercise competitively awarded contracts using best value source selection procedures.												
<b>E. Performance Metrics</b>												
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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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2014 Army</b>												<b>DATE:</b> April 2013			
<b>APPROPRIATION/BUDGET ACTIVITY</b> 2040: Research, Development, Test & Evaluation, Army BA 4: Advanced Component Development & Prototypes (ACD&P)						<b>R-1 ITEM NOMENCLATURE</b> PE 0603827A: Soldier Systems - Advanced Development						<b>PROJECT</b> S53: Clothing And Equipment			
<b>Management Services (\$ in Millions)</b>				<b>FY 2012</b>		<b>FY 2013</b>		<b>FY 2014 Base</b>		<b>FY 2014 OCO</b>		<b>FY 2014 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>All Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
In-House Support	TBD	PM SPIE:Ft. Belvoir, VA	11.134	1.150		1.000		1.000		-		1.000	Continuing	Continuing	Continuing
<b>Subtotal</b>			11.134	1.150		1.000		1.000		0.000		1.000			
<b>Product Development (\$ in Millions)</b>				<b>FY 2012</b>		<b>FY 2013</b>		<b>FY 2014 Base</b>		<b>FY 2014 OCO</b>		<b>FY 2014 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>All Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
Engineering Support	MIPR	NSRDEC:Natick, MA	11.353	0.925		1.034		1.048		-		1.048	Continuing	Continuing	Continuing
Development Contracts	C/TBD	Various:Various	19.917	2.000		3.155		3.167		-		3.167	Continuing	Continuing	Continuing
<b>Subtotal</b>			31.270	2.925		4.189		4.215		0.000		4.215			
<b>Support (\$ in Millions)</b>				<b>FY 2012</b>		<b>FY 2013</b>		<b>FY 2014 Base</b>		<b>FY 2014 OCO</b>		<b>FY 2014 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>All Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
Misc Support Costs	MIPR	Various:Various	6.177	-		0.500		0.400		-		0.400	Continuing	Continuing	Continuing
<b>Subtotal</b>			6.177	0.000		0.500		0.400		0.000		0.400			
<b>Test and Evaluation (\$ in Millions)</b>				<b>FY 2012</b>		<b>FY 2013</b>		<b>FY 2014 Base</b>		<b>FY 2014 OCO</b>		<b>FY 2014 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>All Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
Testing Costs	TBD	various:Various	11.668	7.232		1.500		0.022		-		0.022	Continuing	Continuing	Continuing
<b>Subtotal</b>			11.668	7.232		1.500		0.022		0.000		0.022			
<b>Project Cost Totals</b>			60.249	11.307		7.189		5.637		0.000		5.637			

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Army							DATE: April 2013				
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				
	All Prior Years	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract		
Remarks											

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Exhibit R-4, RDT&amp;E Schedule Profile: PB 2014 Army

DATE: April 2013

## 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

	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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
Test & Evaluate MFF Environmental Clothing																												
Transition MFF Environmental Clothing to 0604601A S60																												
Extended Cold Weather Clothing Protective System (ECWSPS) Evaluation																												
ECWSPS Transition to 0604601A S60																												
Extreme Cold Weather Glove Evaluation																												
Extreme Cold Weather Glove Transition to 0604601A S60																												
Vapor Barrier Boot Replacement Testing																												
Vapor Barrier Boot Transition to 0604601A S60																												
Improve Signature Mgmt (IR) Evaluation in Clothing & Equipment																												
IWTD - Incr 1 (filtration) Transition to 0604601A S60																												
Modular Sleep System thermal efficiency testing																												
IWTD - Incr II Desalinization Testing																												
Modular Lightweight Load Carrying Equip update																												
Parachutist Navigation System (PARANAVSYS) Evaluation																												
PARANAVSYS Transition to 0604601A S60																												
Military Free Fall (MFF) Enhanced Electronic Auto Activation Device (EAAD) Eval																												
T-11 Canopy Release Assembly- Purchase Prototypes & Technical Testing																												

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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Army																				DATE: April 2013												
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												
					FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
					1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
T-11 Canopy Release Assembly Transition to 0604601A S60					█																											
T-11 Canopy size evaluation					██████████																											
High Fidelity Height Sensor - Purchase Prototypes & Technical Testing					██																											
High Fidelity Height Sensor Transition to 0604601A S60					████																											
MFF Increased Oxygen Pressure Bottles DV Testing					██																											
MFF Increased Oxygen Pressure Bottles Transition to 0604601A S60					████																											
MFF Signature Reduction Evaluation					██																											

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2014 Army			<b>DATE:</b> April 2013
<b>APPROPRIATION/BUDGET ACTIVITY</b> 2040: <i>Research, Development, Test &amp; Evaluation, Army</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603827A: <i>Soldier Systems - Advanced Development</i>	<b>PROJECT</b> S53: <i>Clothing And Equipment</i>	

**Schedule Details**

Events	Start		End	
	Quarter	Year	Quarter	Year
Test & Evaluate MFF Environmental Clothing	1	2014	2	2016
Transition MFF Environmental Clothing to 0604601A S60	3	2016	3	2016
Extended Cold Weather Clothing Protective System (ECWSPS) Evaluation	1	2014	4	2014
ECWSPS Transition to 0604601A S60	1	2015	4	2015
Extreme Cold Weather Glove Evaluation	1	2014	4	2015
Extreme Cold Weather Glove Transition to 0604601A S60	1	2016	1	2016
Vapor Barrier Boot Replacement Testing	1	2016	4	2016
Vapor Barrier Boot Transition to 0604601A S60	1	2017	1	2017
Improve Signature Mgmt (IR) Evaluation in Clothing & Equipment	2	2012	4	2014
IWTD - Incr 1 (filtration) Transition to 0604601A S60	1	2013	1	2013
Modular Sleep System thermal efficiency testing	2	2012	2	2013
IWTD - Incr II Desalinization Testing	1	2018	4	2018
Modular Lightweight Load Carrying Equip update	1	2017	4	2018
Parachutist Navigation System (PARANAVSYS) Evaluation	1	2013	4	2013
PARANAVSYS Transition to 0604601A S60	1	2014	1	2014
Military Free Fall (MFF) Enhanced Electronic Auto Activation Device (EAAD) Eval	1	2014	4	2015
T-11 Canopy Release Assembly- Purchase Prototypes & Technical Testing	1	2014	4	2015
T-11 Canopy Release Assembly Transition to 0604601A S60	1	2016	1	2016
T-11 Canopy size evaluation	1	2014	4	2014
High Fidelity Height Sensor - Purchase Prototypes & Technical Testing	1	2014	4	2016
High Fidelity Height Sensor Transition to 0604601A S60	1	2017	1	2017
MFF Increased Oxygen Pressure Bottles DV Testing	1	2014	4	2015



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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2014 Army			<b>DATE:</b> April 2013	
<b>APPROPRIATION/BUDGET ACTIVITY</b> 2040: <i>Research, Development, Test &amp; Evaluation, Army</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>		<b>R-1 ITEM NOMENCLATURE</b> PE 0603827A: <i>Soldier Systems - Advanced Development</i>		<b>PROJECT</b> S53: <i>Clothing And Equipment</i>
		<b>Start</b>		<b>End</b>
<b>Events</b>		<b>Quarter</b>	<b>Year</b>	<b>Quarter</b>
				<b>Year</b>
MFF Increased Oxygen Pressure Bottles Transition to 0604601A S60		1	2016	1
MFF Signature Reduction Evaluation		1	2014	4
				2016

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army									DATE: April 2013			
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)	All Prior Years	FY 2012	FY 2013 <sup>#</sup>	FY 2014 Base	FY 2014 OCO <sup>##</sup>	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
S54: Small Arms Improvement	-	4.362	4.690	4.260	-	4.260	6.172	5.569	5.186	5.700	Continuing	Continuing
Quantity of RDT&E Articles												
# FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012												
## The FY 2014 OCO Request will be submitted at a later date												
Note												
New starts in FY 2014 include Extended Range/Guided 40mm Munition, Precision Projectile Tracking, Advanced Laser Protection for Optics and Advanced Hyperspectral Target Acquisition.												
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), Defense Advanced Research Projects Agency (DARPA), Department of Energy National Laboratories, Research Development & Engineering Centers (RDECs) 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 and tracking, 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 or system prototypes which demonstrates light weight materials, wear resistant/protective/anti-reflective 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 2012	FY 2013	FY 2014	
Title: New Weapons									0.076	0.350	1.000	
									0	0		
Description: Description: Development of new small arms weapons												
FY 2012 Accomplishments:												
Supported cost benefit analysis conducted by Joint Service Small Arms Program (JSSAP) to evaluate comparative cost information for the Lightweight Machine Gun versus M249 Squad Automatic Weapon (SAW). Developed a notional schedule to transition advanced technology development of cased telescoped ammunition for lightweight small arms technology (LSAT) from JSSAP, Project 627, Program Element 0603607A, (Budget Activity 3) to Project Manager Soldier Weapons.												
FY 2013 Plans:												

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Army		<b>DATE:</b> April 2013	
<b>APPROPRIATION/BUDGET ACTIVITY</b> 2040: <i>Research, Development, Test &amp; Evaluation, Army</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603827A: <i>Soldier Systems - Advanced Development</i>	<b>PROJECT</b> S54: <i>Small Arms Improvement</i>	
<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>		<b>FY 2012</b>	<b>FY 2013</b>
Acquisition community to assist the United States Army Training and Doctrine Command (TRADOC) and Maneuver Center of Excellence (MCoE) in the development of a Lightweight Machine Gun requirement. Develop plan and schedule of Engineering Manufacturing Development (EMD) phase of the Lightweight Machine Gun.			
<b>FY 2014 Plans:</b> Acquisition community to continue to assist the United States Army Training and Doctrine Command (TRADOC) and Maneuver Center of Excellence (MCoE) in the development of Lightweight Machine Gun requirements to include a potential Common Lightweight Automatic Weapon System (CLAWS).			
<b>Title:</b> Small Arms Weapons Enhancements		2.243	1.950
<b>Description:</b> Description: Enhancements and developments of small arms weapons		0	0
<b>FY 2012 Accomplishments:</b> Tested and demonstrated thermal management materials for gun barrels. Continued to evaluate on-going characterization studies of standard and non-standard weapons. Weapons Reliability Study: Completed M4A1 Carbine baseline reliability study under a variety of tests (endurance, environmental) and initiated a follow-on design of experiments test cycle to determine the root cause of weapon reliability.			
<b>FY 2013 Plans:</b> Conduct weapons studies for small arms weapons and evaluate improved manufacturing technologies. Conduct characterization studies of standard and non-standard weapons. Conduct barrel studies to improve/enhance barrel life. Weapon Evaluation: Test and evaluate foreign non-standard rifles. Weapons Reliability Study: Transition Weapons Reliability program to Small Arms Improvement, Project S63, Program Element 0604601A, (Budget Activity 5) to perform root cause analysis of weapon stoppages identified in baseline test firing from FY 2012.			
<b>FY 2014 Plans:</b> Will continue to test, evaluate and analyze on-going and new activities to enhance small arms weapons including suppressor design/fabrication, recoil reduction methods and use of nanostructure materials. Will test and demonstrate system coatings such as protective, water-repellant and lubricious coatings for weapon and optical systems. Based on prior studies will continue weapon studies for small arms lethal and non-lethal weapons and evaluate advanced manufacturing technologies including various additive manufacturing processes such as 3D Printing for plastic composite and metal parts. Will continue to evaluate on-going characterization studies of standard and non-standard weapons. Will continue to conduct barrel studies to improve/enhance barrel life and eliminate chrome-lined weapon parts. Will continue to conduct barrel twist optimization studies to apply to engineering and			

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army			DATE: April 2013			
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 2012	FY 2013	FY 2014
manufacturing development of weapon enhancements. Will investigate weapon/electro-optics applicability and design for robotic platforms to assist in military missions from intelligence gathering to threat engagement.						
Title: Ammunition  Description: Description: Small arms ammunition improvement  FY 2014 Plans: Will initiate coordination/participation on an ongoing Science &Technology (S&T) effort of guided, extended range small arms projectiles/munitions for observation and target acquisition, and precision munitions with enhanced lethality. Will participate in engineering tests to assess effects on weapon and warfighter. Will evaluate results of munitions' maneuverability and on-target effects. Will initiate coordination/participation in an ongoing S&T effort aimed at using small arms munitions to deploy mini-sensors.				0.000	0.000	0.350
Title: Combat Optics  Articles:  Description: Description: Improvement of small arms combat optics  FY 2012 Accomplishments: Squad Common Optic (SCO): Studied various commercial off the shelf (COTS) optics for optical properties and human factors interface with Soldiers in the loop. Tests informed the development of future requirement documents. Direct View Optic Resolution Standards: Conducted a multi-phase resolution and recognition test. Completed initial data reduction on phase one. Conducted High Explosive Air Burst Reticule Evaluation.  FY 2013 Plans: Transition the Squad Common Optics initiative to Small Arms Improvement, Project S63, Program Element 0604601A, (Budget Activity 5) to validate the concept of variable power optics for multiple small arms platforms.  FY 2014 Plans: Will continue to perform, evaluate and analyze combat optics and upgrade research and development efforts to mature optic technology such as Dynamic Image Gun Sight Optic and precision optics. Will provide engineering support and services to include engineering evaluations, verifications and validation of weapon system performance requirements. Will conduct studies, evaluation, and testing to include the Mounted Machine Gun Optic (MMO) and anti-reflection coatings, water-repellant coatings, laser protection devices/coatings and hyperspectral/multi-spectral imaging to include laser protection for optics.				0.100 0	0.210 0	0.800
Title: Fire Control				1.943	2.180	1.110

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army									DATE: April 2013		
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 2012	FY 2013	FY 2014
Articles:									0	0	
Description: Description: Small arms fire control											
FY 2012 Accomplishments: Integrated Fire Control for Small Arms: Completed Phase I and initiated Phase II of the program. Down selected to two (2) contractors for phase II to design, develop and evaluate subassemblies. The subassemblies were integrated into an engineering prototype to demonstrate performance parameters.											
FY 2013 Plans: Integrated Fire Control for Small Arms: Complete Phase II and initiate Phase III to finalize design, fabricate prototypes and conduct test & evaluation. Initiate transition of the integrated fire control for small arms to Small Arms Improvement, Project S63, Program Element 0604601A, (Budget Activity 5).											
FY 2014 Plans: Will complete Phase III and the transition of the integrated fire control for small arms to Small Arms Improvement, Project S63, Program Element 0604601A, (Budget Activity 5). Will evaluate and analyze advance approaches to acquire targets with the use of hyperspectral imaging and assess the effect on current fire control systems to include advanced hyperspectral target acquisition. Will test and assess enhanced electro-optics for target detection, acquisition, identification, and projectile/munition guidance as required for extended range projectiles and munitions. Will analyze and evaluate precision projectile tracking approaches.											
Accomplishments/Planned Programs Subtotals									4.362	4.690	4.260
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
• Small Arms Improvement: RDTE S63, Program Element 0604601A - Infantry Support Weapons	17.759	19.617	18.201		18.201	14.479	14.494	14.608	14.691	Continuing	Continuing
• Joint Service Small Arms Program: RDTE 627, Program Element 0603607A - Joint Service Small Arms Program (JSSAP)	7.473	6.095	5.030		5.030	7.317	5.137	5.873	5.823	Continuing	Continuing
Remarks											
In support of Small Arms Initial Capability and Capability Development Requirements, advanced technology of Small Arms Weapons is transitioned from Joint Service Small Arms Program (JSSAP), Project 627, Program Element 0603607A, (Budget Activity 3) to Small Arms Improvement, Project S54, Program Element 0603827A,											

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army										DATE: April 2013	
<b>APPROPRIATION/BUDGET ACTIVITY</b> 2040: <i>Research, Development, Test &amp; Evaluation, Army</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>					<b>R-1 ITEM NOMENCLATURE</b> PE 0603827A: <i>Soldier Systems - Advanced Development</i>			<b>PROJECT</b> S54: <i>Small Arms Improvement</i>			
<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u> <u>Base</u>	<u>FY 2014</u> <u>OCO</u>	<u>FY 2014</u> <u>Total</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
(Budget Activity 4). After the technology is demonstrated and/or validated the program transitions to Small Arms Improvement, Project S63, Program Element 0604601A, (Budget Activity 5) for engineering and manufacturing development.											
<b>D. Acquisition Strategy</b> Primary strategy is to study, develop, demonstrate and evaluate emerging technologies that ultimately lead to enhancing/improving the small arms inventory.											
<b>E. Performance Metrics</b> 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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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2014 Army</b>												<b>DATE:</b> April 2013			
<b>APPROPRIATION/BUDGET ACTIVITY</b> 2040: Research, Development, Test & Evaluation, Army BA 4: Advanced Component Development & Prototypes (ACD&P)						<b>R-1 ITEM NOMENCLATURE</b> PE 0603827A: Soldier Systems - Advanced Development						<b>PROJECT</b> S54: Small Arms Improvement			
<b>Management Services (\$ in Millions)</b>				<b>FY 2012</b>		<b>FY 2013</b>		<b>FY 2014 Base</b>		<b>FY 2014 OCO</b>		<b>FY 2014 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>All Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
Program Management	Allot	PM Soldier Weapons,:Picatinny Arsenal	1.415	0.411	Jul 2012	0.425	May 2013	0.430	Mar 2014	-		0.430	Continuing	Continuing	Continuing
<b>Subtotal</b>			1.415	0.411		0.425		0.430		0.000		0.430			
<b>Product Development (\$ in Millions)</b>				<b>FY 2012</b>		<b>FY 2013</b>		<b>FY 2014 Base</b>		<b>FY 2014 OCO</b>		<b>FY 2014 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>All Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
Hardware Development	MIPR	Army Research Development Engineering Centers,:Multiple	6.033	1.302	Mar 2012	1.320	May 2013	1.000	Mar 2014	-		1.000	Continuing	Continuing	Continuing
<b>Subtotal</b>			6.033	1.302		1.320		1.000		0.000		1.000			
<b>Support (\$ in Millions)</b>				<b>FY 2012</b>		<b>FY 2013</b>		<b>FY 2014 Base</b>		<b>FY 2014 OCO</b>		<b>FY 2014 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>All Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
Engineering	MIPR	Army Research Development Engineering Centers,:Multiple	7.607	1.473	Feb 2012	1.725	Apr 2013	1.600	Mar 2014	-		1.600	Continuing	Continuing	Continuing
<b>Subtotal</b>			7.607	1.473		1.725		1.600		0.000		1.600			
<b>Test and Evaluation (\$ in Millions)</b>				<b>FY 2012</b>		<b>FY 2013</b>		<b>FY 2014 Base</b>		<b>FY 2014 OCO</b>		<b>FY 2014 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>All Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
Developmental Testing	MIPR	Army Test and Evaluation Centers,:Multiple	3.981	1.176	Feb 2012	1.220	Apr 2013	1.230	Mar 2014	-		1.230	Continuing	Continuing	Continuing

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis:</b> PB 2014 Army												<b>DATE:</b> April 2013		
<b>APPROPRIATION/BUDGET ACTIVITY</b> 2040: <i>Research, Development, Test &amp; Evaluation, Army</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>						<b>R-1 ITEM NOMENCLATURE</b> PE 0603827A: <i>Soldier Systems - Advanced Development</i>				<b>PROJECT</b> S54: <i>Small Arms Improvement</i>				

  

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
<b>Subtotal</b>			3.981	1.176		1.220		1.230		0.000		1.230			

  

	All Prior Years	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>	19.036	4.362	4.690	4.260	0.000	4.260			

  

**Remarks**



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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2014 Army			<b>DATE:</b> April 2013		
<b>APPROPRIATION/BUDGET ACTIVITY</b> 2040: <i>Research, Development, Test &amp; Evaluation, Army</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>		<b>R-1 ITEM NOMENCLATURE</b> PE 0603827A: <i>Soldier Systems - Advanced Development</i>		<b>PROJECT</b> S54: <i>Small Arms Improvement</i>	

	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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
Guided/Extended Range Small Arms Projectiles																												
Advanced Laser Protection for Optics																												
Mounted Machine Gun Optic																												
Advanced Hyperspectral Target Acquisition																												

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2014 Army			<b>DATE:</b> April 2013
<b>APPROPRIATION/BUDGET ACTIVITY</b> 2040: <i>Research, Development, Test &amp; Evaluation, Army</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603827A: <i>Soldier Systems - Advanced Development</i>	<b>PROJECT</b> S54: <i>Small Arms Improvement</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Guided/Extended Range Small Arms Projectiles	1	2014	4	2018
Advanced Laser Protection for Optics	1	2014	4	2014
Mounted Machine Gun Optic	1	2014	3	2017
Advanced Hyperspectral Target Acquisition	1	2014	4	2016

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army									DATE: April 2013			
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			
COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 <sup>#</sup>	FY 2014 Base	FY 2014 OCO <sup>##</sup>	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
VS4: Soldier Protective Equipment	-	1.786	14.984	3.688	-	3.688	7.243	4.756	6.270	7.150	Continuing	Continuing
Quantity of RDT&E Articles												
# FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012												
## The FY 2014 OCO Request will be submitted at a later date												
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 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 2012	FY 2013	FY 2014	
Title: Soldier Protective Equipment									1.786	14.984	3.688	
									Articles: 0	0		
Description: Funding line established in FY12. 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 Accomplishments: Awarded 13 contracts against Broad Agency Announcement (BAA #W91CRB-10-R-0073) to develop, test, evaluate and characterize component materials and subsystems to identify potential solutions for mission tailorable Personal Protective Equipment (PPE). Initiated Director of Operational Test and Evaluation (DOT&E)-directed effort to develop multi-sized test head forms to improve reliability and repeatability of helmet development and acceptance testing. Continued efforts to achieve a 5-15% weight reduction in Advanced Combat Helmet (ACH) and ballistic inserts (Enhanced Small Arms Protective Insert (ESAPI), X-Threat Small Arms Protective Insert (XSAPI) & X-Threat Side Ballistic Inserts (XSBI). Continued efforts on the ballistic insert Smart Sensor (micro-sensor and power management integration). Integrated emerging data and lessons learned from FY10 & FY11 BAA contract awards to inform the Soldier Protection System (SPS) Capability Development Document (CDD) objective/threshold requirements. Conducted market surveys and Technology Readiness Level (TRL) assessments with Science												

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013		
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 2012	FY 2013	FY 2014
<p>&amp;Technology (S&amp;T) community to inform acquisition and contracting strategy to support SPS 2Q FY13 Milestone B Integrated System Design Decision.</p> <p><b>FY 2013 Plans:</b></p> <p>Obtain Materiel Development Decision (MDD) and initiate Soldier Protection System (SPS) Integrated System Design (ISD) phase in 1Q FY13. FY13 efforts will focus on subsystem maturation and integration of the SPS Integrated Soldier Sensor System (ISSS) in addition to ballistic and blast characterization testing of SPS Vital Torso, Extremity, Torso and Integrated head, face and eye protective subsystems. Conduct Preliminary Design Review and procure prototypes the first phase of characterization and Human Factors testing through 1Q FY14. Continue to use Broad Agency Announcement contract to procure and characterize SPS and other Personal Protective Equipment enabling technologies (extremities, torso and vital torso, head and face protection) from emerging ballistic/blast threats. Continue efforts on reducing weight, and bulk and increasing durability in terms of functional service life. Complete integration of self-diagnostic Smart Sensor and Small Arms Protective Inserts (ESAPI and XSAPI) and transition to ISSS (VS5) in FY14. Initiate development of alternate shaped ballistic inserts for female and small statured Soldiers and transition to System Capability &amp; Manufacturing Process Demonstration (SC&amp;MPD/VS 5) through FY15 as the components and subsystems mature. Complete development and initiate validation of new multi-sized head forms to support SPS helmet development and acceptance testing.</p> <p><b>FY 2014 Plans:</b></p> <p>Continue FY13 efforts to complete SPS ISSS prototype characterization and human factors testing. Continue to refine SPS ISSS design, power management and integration. Conduct a Critical Design Review (CDR) of the SPS ISSS and transition to SC&amp;MPD/VS5 to procure Developmental and Operational Test candidates. Continue SPS ISD efforts to integrate new and emerging technologies at the component and subsystem level. Initiate transition of mature components and subsystems to SC&amp;MPD/VS 5 through 1Q FY15. Will continue to evaluate component and subsystem technologies across the PPE portfolio (extremities, torso and vital torso, head and face protection) from emerging ballistic/blast threats. Continue efforts to reduce SPS weight and bulk at the system, subsystem and component level. Continue efforts to increase durability and functional service life. Continue development of ballistic inserts for female and small statured Soldiers (contoured shapes and/or additional sizes) and transition to SC&amp;MPD/VS 5 through 1Q FY15 as the components and subsystems mature. Complete validation/accreditation of new multi-sized head forms to support SPS helmet development and acceptance testing.</p>				
Accomplishments/Planned Programs Subtotals		1.786	14.984	3.688

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army										DATE: April 2013	
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			
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
• Soldier Protective Equipment VS5: RDTE, 0604601A.VS5, Soldier Protective Equipment	3.938	11.942	20.043		20.043	13.173	11.682	8.806	7.806	0.000	77.390
• Central Funding & Fielding: OMA, 121017, Central Funding & Fielding	67.021	73.639	103.484		103.484	161.773	165.014	217.679	205.582	0.000	994.192
Remarks											
D. Acquisition Strategy											
Programs pursue refinement and integration of new technology at the component and subsystem 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 2014 Army												DATE: April 2013			
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		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	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	0.000	0.100		0.100		0.100		-		0.100	Continuing	Continuing	Continuing
Subtotal			0.000	0.100		0.100		0.100		0.000		0.100			
Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	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	0.000	0.375		2.484		1.500		-		1.500	Continuing	Continuing	0.000
Dev/Integ Contracts	TBD	Various:various	0.000	0.611		10.000		0.688		-		0.688	Continuing	Continuing	Continuing
Subtotal			0.000	0.986		12.484		2.188		0.000		2.188			
Support (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	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	0.000	0.300		0.600		0.400		-		0.400	Continuing	Continuing	Continuing
Subtotal			0.000	0.300		0.600		0.400		0.000		0.400			
Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
DT (Ballistic/Non-ballistic) Testing	MIPR	Various:Various	0.000	0.400		1.800		1.000		-		1.000	Continuing	Continuing	Continuing
Subtotal			0.000	0.400		1.800		1.000		0.000		1.000			
			All Prior Years	FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			0.000	1.786		14.984		3.688		0.000		3.688			

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Army							DATE: April 2013			
APPROPRIATION/BUDGET ACTIVITY			R-1 ITEM NOMENCLATURE			PROJECT				
2040: Research, Development, Test & Evaluation, Army			PE 0603827A: Soldier Systems - Advanced Development			VS4: Soldier Protective Equipment				
BA 4: Advanced Component Development & Prototypes (ACD&P)										
	All Prior Years	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract	

Remarks

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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2014 Army			<b>DATE:</b> April 2013		
<b>APPROPRIATION/BUDGET ACTIVITY</b> 2040: <i>Research, Development, Test &amp; Evaluation, Army</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>			<b>R-1 ITEM NOMENCLATURE</b> PE 0603827A: <i>Soldier Systems - Advanced Development</i>		
			<b>PROJECT</b> VS4: <i>Soldier Protective Equipment</i>		

	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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
Soldier Protection System (SPS) Material Development Decision (MDD)																												
SPS Milestone B Decision																												
Initiate SPS component/subsystems development																												
Award SPS components/subsystem contracts																												
SPS Preliminary Design Review (PDR)																												
Conduct Initial Characterization Testing (ballistic & non-destr eval)																												
Award SPS components/subsystem contract options																												
Conduct Characterization Testing (ballistic & non-dest eval)																												
Initiate SPS component/subsys Incr enhancements																												
Continue ballistic & Characterization testing on comp/subsys																												



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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2014 Army			<b>DATE:</b> April 2013
<b>APPROPRIATION/BUDGET ACTIVITY</b> 2040: <i>Research, Development, Test &amp; Evaluation, Army</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603827A: <i>Soldier Systems - Advanced Development</i>	<b>PROJECT</b> VS4: <i>Soldier Protective Equipment</i>	

**Schedule Details**

<b>Events</b>	<b>Start</b>		<b>End</b>	
	<b>Quarter</b>	<b>Year</b>	<b>Quarter</b>	<b>Year</b>
Soldier Protection System (SPS) Material Development Decision (MDD)	1	2013	1	2013
SPS Milestone B Decision	2	2013	2	2013
Initiate SPS component/subsystems development	3	2013	1	2015
Award SPS components/subsystem contracts	3	2013	3	2013
SPS Preliminary Design Review (PDR)	4	2013	4	2013
Conduct Initial Characterization Testing (ballistic & non-destr eval)	3	2013	2	2014
Award SPS components/subsystem contract options	3	2014	3	2014
Conduct Characterization Testing (ballistic & non-dest eval)	4	2014	1	2015
Initiate SPS component/subsys Incr enhancements	2	2015	4	2018
Continue ballistic & Characterization testing on comp/subsys	1	2016	2	2018