Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Army										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 2: *Applied Research*				R-1 ITEM NOMENCLATURE PE 0602623A: *JOINT SERVICE SMALL ARMS PROGRAM*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	9.001	7.893	8.244	-	8.244	8.604	8.758	8.904	9.055	Continuing	Continuing
H21: *JT SVC SA PROG (JSSAP)*	7.409	7.893	8.244	-	8.244	8.604	8.758	8.904	9.055	Continuing	Continuing
S50: *SMALL ARMS APPLIED RESEARCH (CA)*	1.592	-	-	-	-	-	-	-	-	Continuing	Continuing

Note

FY10 funding increase for congressional special interest items.

A. Mission Description and Budget Item Justification

The objective of this program element is to design, develop and evaluate individual and crew-served weapon technologies that enhance the fighting capabilities and survivability of dismounted battlefield personnel in support of all the Services. All Joint Service Small Arms Program (JSSAP) efforts are based upon the Joint Service Small Arms Master Plan (JSSAMP) and the Joint Capabilities Integration Development System's Small Arms Analyses. Project S50 funds congressional special interest items.

Work in this PE is related to, and fully coordinated with, efforts in PE 0602624A (Weapons and Munitions Technology), PE 0603607A (Joint Service Small Arms Program), and PE 0603827A (Soldier Systems-Advanced Development).

The cited work is consistent with the Director, Defense Research and Engineering Strategic Plan, the Army Modernization Strategy, and the Army Science and Technology Master Plan.

This program is managed by the US Army Armament Research, Development, and Engineering Center (ARDEC), Picatinny Arsenal, NJ.

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	7.634	7.893	8.244	-	8.244
Current President's Budget	9.001	7.893	8.244	-	8.244
Total Adjustments	1.367	-	-	-	-
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	1.592	-			
• SBIR/STTR Transfer	-0.225	-			

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 2: *Applied Research*	R-1 ITEM NOMENCLATURE PE 0602623A: *JOINT SERVICE SMALL ARMS PROGRAM*	PROJECT H21: *JT SVC SA PROG (JSSAP)*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
H21: *JT SVC SA PROG (JSSAP)*	7.409	7.893	8.244	-	8.244	8.604	8.758	8.904	9.055	Continuing	Continuing

A. Mission Description and Budget Item Justification

This project designs, develops and evaluates individual and crew-served weapon component technologies that enable increased lethality for survivability of dismounted battlefield personnel in all the Services. All efforts are based upon the Joint Service Small Arms Master Plan (JSSAMP) and the Joint Capabilities Integration Development System's Small Arms Analyses.

Work in this PE is related to, and fully coordinated with, efforts in PE 0602624A (Weapons and Munitions Technology) and PE 0603607A (Joint Service Small Arms Program) and PE 0602786A (Warfighter Technology).
The cited work is consistent with the Director, Defense Research and Engineering Strategic Plan, the Army Modernization Strategy, and the Army Science and Technology Master Plan.

This program is managed by the US Army Armament Research, Development, and Engineering Center (ARDEC), Picatinny, NJ.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Title: Advanced Lethal Armament Technology for Small Arms ***Description:*** This effort addresses terminal effects and launch aspects of small arms weapon systems. ***FY 2010 Accomplishments:*** Fabricated and evaluated two advanced 40mm payload/warheads in laboratory; assessed microelectromechanical systems (MEMs) setback generator critical components in lab environment; designed ammo breadboard to demonstrate launch survivability, assessed recoil reduction to multiple variation in loads and confirmed with model. ***FY 2011 Plans:*** Asses optimum small caliber payloads, fire control and advanced fuzing through component demonstrations confirming critical characteristics, (such as flight dynamics) in a wind tunnel and confirm results with modeling and simulation; develop target-orientation sensors for small caliber payloads designs.	3.705	3.267	-
Title: Advanced Fire Control Technology for Small Arms ***Description:*** This effort addresses advanced fire control technologies to reduce miss distance of small arms weapon systems. ***FY 2010 Accomplishments:***	3.704	4.626	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 2: *Applied Research*	**R-1 ITEM NOMENCLATURE** PE 0602623A: *JOINT SERVICE SMALL ARMS PROGRAM*	**PROJECT** H21: *JT SVC SA PROG (JSSAP)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Developed modeling and simulation tools to evaluate the soldier-small arms interface to determine factors influencing loss of accuracy in aiming; designed and fabricated advanced modular rail components; evaluated weapon aiming concepts using target testbed components; demonstrated critical gun barrel reference sensor components. ***FY 2011 Plans:*** Evaluate capability of critical components to engage defilade and covered targets; design weapon-aiming components improving timeline and target centroid location to increase effectiveness; perform critical lab advanced-aiming assessments; conduct evaluation of tradeoffs resulting from the incorporation of enhancements to small arms critical components.			
Title: JSSAP Mini Grand Challenge ***Description:*** This effort addresses future small arms technology investments. ***FY 2012 Plans:*** Will design and develop the next generation (2016 and beyond) small arms weapons platforms; will investigate critical technologies and concepts that can be integrated into weapons system platforms to provide the warrior the next generation small arms capabilities; will conduct experiments to mature small arms component technologies in target engagement, target effectiveness, and power and energy requirements.	-	-	4.500
Title: Small Arms Material and Process Technology ***Description:*** This effort addresses state of the art material substrates and surface coatings to improve reliability, reduce maintenance and improve weapon diagnostics through embedded technology. ***FY 2012 Plans:*** Will perform a detailed investigation of these new materials and techniques as applied to current and new weapon systems; will mature past investments in lubricous weapon coatings, shot counters and other indicators to increase weapon life, improve durability and reduce weight.	-	-	3.744
Accomplishments/Planned Programs Subtotals	7.409	7.893	8.244

C. Other Program Funding Summary ($ in Millions)

N/A

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 2: *Applied Research*	**R-1 ITEM NOMENCLATURE** PE 0602623A: *JOINT SERVICE SMALL ARMS PROGRAM*	**PROJECT** H21: *JT SVC SA PROG (JSSAP)*

E. Performance Metrics

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 2: *Applied Research*	R-1 ITEM NOMENCLATURE PE 0602623A: *JOINT SERVICE SMALL ARMS PROGRAM*	PROJECT S50: *SMALL ARMS APPLIED RESEARCH (CA)*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
S50: *SMALL ARMS APPLIED RESEARCH (CA)*	1.592	-	-	-	-	-	-	-	-	Continuing	Continuing

A. Mission Description and Budget Item Justification

Congressional Interest Item funding for Small Arms Applied Research.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Title: Aluminum Cartridge Case 5.56mm, Lake City Army Ammunition Plant	1.592	-	-
Description: This is a Congressional Interest Item.			
FY 2010 Accomplishments: Investigated technology for providing a lightweight alternative to the current brass cartridge case used on 5.56mm ammunition.			
Accomplishments/Planned Programs Subtotals	1.592	-	-

C. Other Program Funding Summary ($ in Millions)

N/A

D. Acquisition Strategy

N/A

E. Performance Metrics

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.