Exhibit R-2, PB 2010 Army RDT&E Budget Item Justification								DATE: May 2009		
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 2008 Actual**	**FY 2009 Estimate**	**FY 2010 Estimate**	**FY 2011 Estimate**	**FY 2012 Estimate**	**FY 2013 Estimate**	**FY 2014 Estimate**	**FY 2015 Estimate**	**Cost To Complete**	**Total Cost**
Total Program Element	6.798	9.102	7.674						Continuing	Continuing
H21: JT SVC SA PROG (JSSAP)	6.798	7.506	7.674						Continuing	Continuing
S50: SMALL ARMS APPLIED RESEARCH (CA)	.000	1.596	.000						Continuing	Continuing

A. Mission Description and Budget Item Justification

The objective of this program element is to design and develop 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.

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).

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.

Exhibit R-2, PB 2010 Army RDT&E Budget Item Justification	DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY 2040 - Research, Development, Test & Evaluation, Army/BA 2 - Applied Research	R-1 ITEM NOMENCLATURE PE 0602623A JOINT SERVICE SMALL ARMS PROGRAM

B. Program Change Summary ($ in Millions)

	FY 2008	FY 2009	FY 2010	FY 2011
Previous President's Budget	6.962	7.531	7.747	
Current BES/President's Budget	6.798	9.102	7.674	
Total Adjustments	-.164	1.571	-.073	
Congressional Program Reductions	.000	-.029		
Congressional Rescissions	.000	.000		
Total Congressional Increases	.000	1.600		
Total Reprogrammings	.004	.000		
SBIR/STTR Transfer	-.168	.000		

Change Summary Explanation

All FY 2009 increases are due to congressional adds.

Exhibit R-2a, PB 2010 Army RDT&E Project Justification								DATE: May 2009		
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 NUMBER H21	
COST ($ in Millions)	**FY 2008 Actual**	**FY 2009 Estimate**	**FY 2010 Estimate**	**FY 2011 Estimate**	**FY 2012 Estimate**	**FY 2013 Estimate**	**FY 2014 Estimate**	**FY 2015 Estimate**	**Cost To Complete**	**Total Cost**
H21: JT SVC SA PROG (JSSAP)	6.798	7.506	7.674						Continuing	Continuing

A. Mission Description and Budget Item Justification

This project designs and develops individual and crew-served weapon 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).

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 Program ($ in Millions)	FY 2008	FY 2009	FY 2010	FY 2011
Advanced Fire Control Technology for Small Arms: This effort addresses advanced fire control technologies to reduce miss distance of small arms weapon systems. In FY08, determined and developed the best technical approaches for improvements in warfighter rapid range finding against stationary targets; evaluated short time exposure range-finding improvements and their relationship to Soldier capabilities through modeling and simulation tools. In FY09, evaluate improved ranging accuracy technologies mounted on individual weapons and used against moving targets; develop concepts to consolidate energy supply to multiple devices, such as sights and rangefinders, mounted on the rail systems; assess the improvements in automated target location correction for very short time target exposures; and assess increase in effectiveness with modeling and simulation tools. In FY10, will develop modeling and simulation tools to evaluate the soldier-small arms interface to determine factors influencing loss of accuracy in aiming; will design and fabricate advanced modular rail components; will evaluate weapon aiming concepts using target testbed components; will demonstrate critical gun barrel reference sensor components.	3.504	3.511	3.818	
Small Business Innovative Research/Small Business Technology Transfer Programs	.000	.180	.000	
Advanced Lethal Armament Technology for Small Arms:	3.294	3.815	3.856	

Exhibit R-2a, PB 2010 Army RDT&E Project Justification		DATE: May 2009
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 NUMBER H21

B. Accomplishments/Planned Program ($ in Millions)	FY 2008	FY 2009	FY 2010	FY 2011
This effort addresses terminal effects and launch aspects of small arms weapon systems. In FY08, developed and evaluated advanced small arms lethality designs for warheads, projectiles and microelectromechanical systems (MEMS) setback generators; evaluated technology design concepts; modeled recoil components and gas dynamics/heat flow in weapons; assessed low-weight recoil reduction designs; evaluated and assessed technological improvements through modeling and simulation tools. In FY09, design improvements and assess trajectory correction and drag compensation sensors for 40 mm and 25 mm ammo; analyze and confirm projectile terminal effectiveness in laboratory environment; confirm proof of principle recoil reduction concepts with recoil kinematic modeling. In FY10, will fabricate and evaluate 2 advanced small caliber payload/warheads in laboratory; will assess MEMs setback generator critical component in lab environment; will design ammo breadboard to demonstrate launch survivability, will assess recoil reduction to multiple variation in loads and confirm with model.				
Total	6.798	7.506	7.674	

C. Other Program Funding Summary ($ in Millions)

N/A

D. Acquisition Strategy

N/A

E. Performance Metrics

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

Exhibit R-2a, PB 2010 Army RDT&E Project Justification								DATE: May 2009		
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 NUMBER S50	
COST ($ in Millions)	**FY 2008 Actual**	**FY 2009 Estimate**	**FY 2010 Estimate**	**FY 2011 Estimate**	**FY 2012 Estimate**	**FY 2013 Estimate**	**FY 2014 Estimate**	**FY 2015 Estimate**	**Cost To Complete**	**Total Cost**
S50: SMALL ARMS APPLIED RESEARCH (CA)	.000	1.596	.000						Continuing	Continuing

A. Mission Description and Budget Item Justification

Congressional Interest Item funding for Small Arms Applied Research.

B. Accomplishments/Planned Program ($ in Millions)	FY 2008	FY 2009	FY 2010	FY 2011
SBIR/STTR	.000	.045	.000	
Extreme Light Sources, University of Florida	.000	1.551	.000	
Total	.000	1.596	.000	

C. Other Program Funding Summary ($ in Millions)

N/A

D. Acquisition Strategy

N/A

E. Performance Metrics

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