Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Army										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 3: *Advanced Technology Development (ATD)*					R-1 ITEM NOMENCLATURE PE 0603607A: *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	8.683	9.151	7.686	-	7.686	7.576	7.729	7.866	8.012	Continuing	Continuing
627: *JT SVC SA PROG (JSSAP)*	8.683	9.151	7.686	-	7.686	7.576	7.729	7.866	8.012	Continuing	Continuing

A. Mission Description and Budget Item Justification

This program element (PE) matures and demonstrates advanced technologies that integrate into individual and crew served weapons for all Services. This PE supports the maturation and demonstration of Lightweight Small Arms Technologies (LSAT) that offer significantly reduced weight over the currently fielded weapons and ammunition. All efforts are based upon the Joint Service Small Arms Master Plan (JSSAMP), the Joint Capabilities Integration Development System's Small Arms Analysis, and the resulting Capabilities Development Documents for the Services.

Work in this PE is related to and fully integrated with the efforts funded in PE 0602623A (Joint Service Small Arms Program) and PE 0603001 Warfighter Advanced Technology (Warfighter Advanced 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.

Work in this PE is performed 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	8.949	9.151	8.436	-	8.436
Current President's Budget	8.683	9.151	7.686	-	7.686
Total Adjustments	-0.266	-	-0.750	-	-0.750
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.266	-			
• Adjustments to Budget Years	-	-	-0.750	-	-0.750

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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
627: *JT SVC SA PROG (JSSAP)*	8.683	9.151	7.686	-	7.686	7.576	7.729	7.866	8.012	Continuing	Continuing

A. Mission Description and Budget Item Justification

This project matures and demonstrates advanced technologies that provide greater lethality, target acquisition, fire control, training effectiveness and range at a significantly reduced weight. These technologies lighten the Soldier's load, provide improved battlefield mobility, and reduce logistics burden while maintaining or improving current levels of performance.

Work in this PE is related to and fully integrated with the efforts funded in PE 0602623A (Joint Service Small Arms Program) and PE 0602624A (Weapons and Munitions 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.

Work in this PE is performed by the US Army Armament Research, Development, and Engineering Center (ARDEC), Picatinny Arsenal, NJ.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Title: Lightweight Small Arms Systems (LSAS)	7.161	7.397	-
Description: This effort demonstrates caseless and case telescoped ammunition technologies for specific weapon systems and missions with goals to reduce the weapon and ammo weight, and to reduce training and maintenance costs. Cased telescoped ammunition is a 100% polymer cylindrical shaped case, inside of which are the projectile (i.e., telescoped inward) and the propellant, with a standard mechanical primer located at the base. The caseless cartridge also uses a telescoped bullet arrangement. A specialized High Ignition Temperature Propellant (HITP) provides not only the propulsive energy, but also serves as the cartridge structure and exterior surface.			
FY 2010 Accomplishments: Demonstrated TRL 5 for both the new caseless ammunition-firing lightweight machine gun and caseless ammunition; began fabrication of 8 cased telescoped ammunition-firing lightweight machine guns as well as 100K rounds of cased telescoped ammo; designed and fabricated lightweight carbine; continued integration of successful components evaluated from PE 0602623A into lightweight machine gun; refined the design of the caseless ammunition formulation and evaluated it in ballistic test fixture.			
FY 2011 Plans: Take delivery of lightweight machine guns and cased telescoped ammunition to conduct TRL 6 demonstration of tech maturity and military utility; achieve TRL 6 for cased-telescoped ammunition fired from light machine guns; fabricate and evaluate riflescope			

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
demonstrator with adaptive zoom lens on lightweight machine gun; conduct TRL 5 demonstration of lightweight cased telescoped carbine.			
Title: Small Arms Technology Assessment and Effectiveness Modeling ***Description:*** This task addresses the application of technology component solutions to mitigate identified capability gaps in the JSSAP strategy. ***FY 2010 Accomplishments:*** Demonstrated and optimized value of weapon concepts developed for The Infantry Warrior Simulation (IWARS) and small team level One Semi-Automated Force (SAF) Testbed Baseline (OTB) force-on-force simulations that are derived from simulation results obtained previously utilizing these force-on-force effectiveness simulations. ***FY 2011 Plans:*** Mature and optimize force-on-force simulations based on results of small arms demonstrations.	1.522	1.754	-
Title: Small Arms Weapons and Fire Control Integration ***Description:*** The best of the breadboard concepts from the Advanced Fire Control Technology for Small Arms (0602623A/H21) will be integrated into lab demonstrators and evaluated on relevant current (M4, M16, M249, M240) and developmental small arms systems to optimize affordability, target acquisition, fire control, weight, and lethality. ***FY 2012 Plans:*** Will mature dynamic target tracking and range finding, as well as adaptive polymer zoom lens technologies; will demonstrate power distribution/sourcing technologies in an integrated weapon and fire control prototype will mature and demonstrate integrated thermal management small arms weapon technologies such as graphite foam and heat pipes.	-	-	3.841
Title: Small Arms Grenade Munitions Integration and Evaluation ***Description:*** The best of the breadboard concepts from the Advanced Lethality Armament Technology for Small Arms (0602623A/H21) project will be integrated into a 40mm ammunition prototype and evaluated on current (M203, M320, and M32 40mm grenade launchers) small arms systems to optimize affordability, effects, as well as lethality. ***FY 2012 Plans:*** Will demonstrate advanced lethality concepts, including course correction, as well as enhanced fragmentation/directionality technologies; will integrate and demonstrate recoil mitigation technologies.	-	-	3.845
Accomplishments/Planned Programs Subtotals	8.683	9.151	7.686

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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.