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Exhibit R-2, PB 2011 Army RDT&E Budget Item Justification									DATE: February 2010		
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 2009 Actual	FY 2010 Estimate	Base FY 2011 Estimate	OCO FY 2011 Estimate	Total FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	8.568	8.949	9.151	0.000	9.151	8.436	8.326	8.479	8.616	0	69.676
627: JT SVC SA PROG (JSSAP)	8.568	8.949	9.151	0.000	9.151	8.436	8.326	8.479	8.616	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 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. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	8.781	8.996	9.195	0.000	9.195
Current President's Budget	8.568	8.949	9.151	0.000	9.151
Total Adjustments	-0.213	-0.047	-0.044	0.000	-0.044
• Congressional General Reductions		-0.047			
• Congressional Directed Reductions					
• Congressional Rescissions		0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers					
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-0.213	0.000			
• Adjustments to Budget Years	0.000	0.000	-0.044	0.000	-0.044

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COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	Base FY 2011 Estimate	OCO FY 2011 Estimate	Total FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
627: <i>JT SVC SA PROG (JSSAP)</i>	8.568	8.949	9.151	0.000	9.151	8.436	8.326	8.479	8.616	Continuing	Continuing

A. Mission Description and Budget Item Justification

This project matures and demonstrates advanced technologies that provide greater lethality 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 Program (\$ in Millions)

	FY 2009	FY 2010	Base FY 2011	OCO FY 2011	Total FY 2011
Program #1 Lightweight Small Arms Systems (LSAS): 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. In FY09, matured and demonstrated improved caseless ammunition formulation, fabricated small quantities of ammunition and weapons prototypes in order to conduct additional testing of hardware and validate design and analyses; began to assess integration of technologies being developed under PE 0602623A such as graphite foam, improved lethality projectiles, and recoilless components. In FY10, demonstrate TRL 5 for both the new caseless ammunition-firing lightweight machine gun and caseless ammunition, begin fabrication of 8 cased telescoped ammunition-firing lightweight machineguns and 100K rounds of cased telescoped ammo, design and fabricate lightweight carbine and continue integration of successful components tested from PE 0602623A into lightweight machinegun; refine the design of the caseless ammunition formulation and evaluate in existing	7.319	7.206	7.397	0.000	7.397

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B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	Base FY 2011	OCO FY 2011	Total FY 2011
prototype. In FY11, will take delivery of lightweight machineguns and cased telescoped ammunition and will conduct TRL 6 demonstration of tech maturity and military utility; will achieve TRL 6 for cased-telescoped ammunition fired from light machine guns; will fabricate, evaluate and test riflescope demonstrator with adaptive zoom lens on lightweight machinegun; will conduct TRL 5 demonstration of lightweight cased telescoped carbine. FY 2009 Accomplishments: FY 2009 FY 2010 Plans: FY 2010 Base FY 2011 Plans: FY 2011 Base OCO FY 2011 Plans: FY 2011 OCO						
Program #2 Small Arms Technology Assessment and Effectiveness Modeling: This task addresses the application of technology component solutions to mitigate identified capability gaps in the JSSAP strategy. In FY09, further matured higher order simulations to assess the utility of complimentary advanced lethality and fire control programs in PE 0602623A/project H21. In FY10, demonstrate and optimize 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. In FY11, will mature and optimize force-on-force simulations based on results of small arms demonstrations.		1.249	1.526	1.754	0.000	1.754

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B. Accomplishments/Planned Program (\$ in Millions)					
	FY 2009	FY 2010	Base FY 2011	OCO FY 2011	Total FY 2011
FY 2009 Accomplishments: FY 2009					
FY 2010 Plans: FY 2010					
Base FY 2011 Plans: FY 2011 Base					
OCO FY 2011 Plans: FY 2011 OCO					
Program #3 Small Business Innovative Research/Small Business Technology Transfer Programs	0.000	0.217	0.000	0.000	0.000
FY 2009 Accomplishments: FY 2009					
FY 2010 Plans: FY 2010					
Base FY 2011 Plans: FY 2011 Base					
OCO FY 2011 Plans: FY 2011 OCO					
Accomplishments/Planned Programs Subtotals	8.568	8.949	9.151	0.000	9.151

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<u>C. Other Program Funding Summary (\$ in Millions)</u> N/A		
<u>D. Acquisition Strategy</u> N/A		
<u>E. Performance Metrics</u> 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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