Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Army											Date: February 2015	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 3: *Advanced Technology Development (ATD)*					R-1 Program Element (Number/Name) PE 0603607A *I Joint Service Small Arms Program*							
COST ($ in Millions)	**Prior Years**	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**Cost To Complete**	**Total Cost**
Total Program Element	-	4.902	7.318	5.105	-	5.105	5.839	5.787	5.874	5.990	-	-
627: *Jt Svc Sa Prog (JSSAP)*	-	4.902	7.318	5.105	-	5.105	5.839	5.787	5.874	5.990	-	-

A. Mission Description and Budget Item Justification

This project matures and demonstrates advanced technologies that provide greater lethality, target acquisition, fire control, 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.

Efforts in this program element support the Lethality Science and Technology portfolio.

Work in this PE is related to and fully integrated with the efforts funded in PE 0602623A (Joint Service Small Arms Program), PE 0602624A (Weapons and Munitions Technology) and PE 0602618A (Ballistic Technology).

The cited work is consistent with the Assistant Secretary of Defense for Research and Engineering priority focus areas and the Army Modernization Strategy.

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

B. Program Change Summary ($ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	5.027	7.321	5.143	-	5.143
Current President's Budget	4.902	7.318	5.105	-	5.105
Total Adjustments	-0.125	-0.003	-0.038	-	-0.038
• Congressional General Reductions	-	-0.003			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.125	-			
• Adjustments to Budget Years	-	-	-0.038	-	-0.038

Exhibit R-2A, RDT&E Project Justification: PB 2016 Army			Date: February 2015
Appropriation/Budget Activity 2040 / 3	R-1 Program Element (Number/Name) PE 0603607A / *Joint Service Small Arms Program*	Project (Number/Name) 627 / *Jt Svc Sa Prog (JSSAP)*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
627: *Jt Svc Sa Prog (JSSAP)*	-	4.902	7.318	5.105	-	5.105	5.839	5.787	5.874	5.990	-	-

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.

Efforts in this program element support the Soldier Science and Technology portfolio.

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 Assistant Secretary of Defense for Research and Engineering priority focus areas and the Army Modernization Strategy.

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

B. Accomplishments/Planned Programs ($ in Millions)	FY 2014	FY 2015	FY 2016
Title: Small Arms Weapons and Fire Control Integration	1.786	5.665	-
Description: 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. Project transitions to Project Manager Soldier Weapons (PM SW). ***FY 2014 Accomplishments:*** Completed integration of the daytime electro-optic fire control demonstrator with target tracking algorithms and range determination component technologies for machine gun mounted optics; demonstrated capability to track multiple targets and increase probability of hit by 100% out to a range of 1200 meters. ***FY 2015 Plans:*** Perform final developmental testing and assessments in a relevant environment; demonstrate compatibility with current M240 machine gun in actual system environments; achieve TRL 6 for matured component technologies and transition Technical Data Package (TDP).			
Title: Small Arms Grenade Munitions Integration and Evaluation	3.116	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2016 Army		Date: February 2015
Appropriation/Budget Activity 2040 / 3	**R-1 Program Element (Number/Name)** PE 0603607A / *Joint Service Small Arms Program*	**Project (Number/Name)** 627 / *Jt Svc Sa Prog (JSSAP)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2014	FY 2015	FY 2016
Description: The best 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 and lethality. Project transitions to Project Manager Maneuver Ammunition Systems (PM MAS). ***FY 2014 Accomplishments:*** Minimized dispersion and drag variation of the M433 40mm grenade through exterior design modifications in order to maximize the range of the projectile; integrated the smaller fuze and sensor components into the improved projectile body; demonstrated improved warhead and ballistic performance; transitioned grenade design improvements to PM-MAS. Initiated weapon effectiveness study to understand target and advanced projectile interactions for overwhelming lethal effects.			
Title: Advanced Small Unit (Squad) Small Arms Technology Demonstration ***Description:*** Identify, advance, and demonstrate advanced technologies leading to the ability to improve Small Unit level effectiveness and utilize new small arms technological concepts to improve range overmatch capability against like-sized threat elements. ***FY 2015 Plans:*** Demonstrate enabling technologies that double maximum effective range of door-breaching munition from 33m to 66m; double the maximum effective range to 2km for .50 caliber ammunition; increase probability of hit and hard target penetration; and double probability of hit for rifles from 0-600m ***FY 2016 Plans:*** Will demonstrate a closed loop fire control weapon modification kit to compensate for dismounted shooter wobble. User-interface components will be controlled via target tracking software and embedded mobile processing hardware that optically monitor target position relative to point of aim in order to double probability of hit for rifles from 0-600m.	-	1.653	0.403
Title: Small Arms Material and Process Technology Demonstration ***Description:*** This effort addresses state of the art material substrates and surface coatings matured in PE 0602623A to improve reliability, reduce maintenance and improve weapon diagnostics through embedded technology. ***FY 2016 Plans:***	-	-	1.696

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2014	FY 2015	FY 2016
Will demonstrate the application of solids substances that eliminate the need to apply lubricant to weapon components, reduce carbon fouling that builds up from weapon firing and reduce weapons maintenance time; achieve TRL 6 for matured technologies; and transition Technical Data Package (TDP) formulation.			
Title: Volume Effects ***Description:*** This effort addresses the maturation and demonstration of emerging small arms technologies from PE 0602623A efforts into current and next generation weapon systems to address Volume (sustained suppressive and lethal fires for area targets) capability gaps for improved effectiveness at extended ranges. ***FY 2016 Plans:*** Will mature fire control and ammunition technologies for lightweight medium machine gun (up to 1200 meters range) and lightweight heavy machine gun (up to 2400 meters range) to support emerging next generation weapon system requirements to provide the capability to achieve desired accuracy and incapacitating effects with volume fire.	-	-	2.152
Title: Precision Effects ***Description:*** This effort addresses the maturation and demonstration of emerging small arms technologies from PE 0602623A efforts into current and next generation weapon systems to address precision fire (Precision fire is support fire in the offense during the assault and engagement of targets to the maximum effective range of the weapon) and Fire Control capability gaps for improved accuracy at extended ranges. ***FY 2016 Plans:*** Will mature and demonstrate advanced future sniper rifles, advanced optics and image processing algorithms and spotting scopes technologies to support emerging precision weapon system requirements with the ability to achieve desired accuracy and incapacitating effects with precision fire against personnel targets for the squad (up to 600m) and the Platoon (up to 2400m).	-	-	0.854
Accomplishments/Planned Programs Subtotals	4.902	7.318	5.105

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

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E. Performance Metrics

N/A