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Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army **Date:** February 2016

Appropriation/Budget Activity 2040: <i>Research, Development, Test & Evaluation, Army / BA 3: Advanced Technology Development (ATD)</i>	R-1 Program Element (Number/Name) PE 0603006A / <i>Space Application Advanced Technology</i>
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COST (\$ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
Total Program Element	-	6.664	5.554	3.904	-	3.904	14.026	20.164	23.262	27.367	-	-
592: <i>Space Application Tech</i>	-	6.664	5.554	3.904	-	3.904	14.026	20.164	23.262	27.367	-	-

A. Mission Description and Budget Item Justification

This Program Element (PE) matures and demonstrates advanced space technologies that support the Army's ability to control and exploit space assets that contribute to current and future military operations as defined in the national, Department of Defense (DoD), and Army space policies. This PE provides applications for enhanced intelligence, reconnaissance, surveillance, target acquisition, position/navigation, missile warning, ground-to-space surveillance, and command and control capabilities. Project 592 matures and demonstrates networked and integrated surveillance, communications, and command and control capabilities for high altitude and tactically responsive space payloads to enable information superiority, enhanced situational awareness, and support global assured access enabling distributed tactical operations.

Work in this PE complements the work in PE 0602120A (Sensors and Electronic Survivability), PE 0603008A (Electronic Warfare Advanced Technology), and PE 0603794A (Command, Control, and Communications Advanced Technology).

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

Work in this PE is performed by the United States Army Space and Missile Defense Command/Army Forces Strategic Command (USASMDC/ARSTRAT) Technical Center in Huntsville, AL.

B. Program Change Summary (\$ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Previous President's Budget	6.880	5.554	3.904	-	3.904
Current President's Budget	6.664	5.554	3.904	-	3.904
Total Adjustments	-0.216	0.000	0.000	-	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.216	-			

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Exhibit R-2A, RDT&E Project Justification: PB 2017 Army **Date:** February 2016

Appropriation/Budget Activity 2040 / 3	R-1 Program Element (Number/Name) PE 0603006A / <i>Space Application Advanced Technology</i>	Project (Number/Name) 592 / <i>Space Application Tech</i>
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COST (\$ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
592: <i>Space Application Tech</i>	-	6.664	5.554	3.904	-	3.904	14.026	20.164	23.262	27.367	-	-

A. Mission Description and Budget Item Justification

This project matures and demonstrates payloads, sensors, and data down link systems for tactically responsive space and high altitude platforms supporting Army ground forces. This project matures, demonstrates, and integrates lightweight materials, hardware components with reduced power consumption, and advanced data collection, processing, and dissemination capabilities. This project also develops algorithms that process space and near space sensor data in real and near real time for integration into battlefield operating systems. These efforts support the Army's ability to control and exploit space assets that contribute to current and future military operations as defined in the national, Department of Defense (DoD), and Army space policies.

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

Work in this Project is performed by the United States Army Space and Missile Defense Command/Army Forces Strategic Command (USASMDC/ARSTRAT) Technical Center in Huntsville, AL. This program is designated as a DoD Space Program.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2015	FY 2016	FY 2017
Title: Payload Technology Development	6.664	5.554	3.904
Description: This effort matures technologies for smaller, Warfighter-responsive sensor and communication small satellite constellations. Work related to standard Army networks is done in coordination with the Communications-Electronics Research Development and Engineering Center (CERDEC) and the Army Cyber Center of Excellence.			
FY 2015 Accomplishments: Conducted low cost launch vehicle engine and rocket stage performance validation; demonstrated suborbital launch, to include rocket and supporting range equipment; validated functionality of space-based mission command for imaging spacecraft architecture, affordable launch technical control, and affordable launch fire control.			
FY 2016 Plans: Demonstrate proof-of-concept small satellite control using standard Army networks; integrate small satellite communications and imagery payload software onto standard Army network platforms and assess ability to control on-orbit small satellites and onboard payloads; and mature Software Defined Radio (SDR) and imagery payloads based on lessons learned from earlier on-orbit demonstrations.			
FY 2017 Plans:			

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Appropriation/Budget Activity 2040 / 3	R-1 Program Element (Number/Name) PE 0603006A / <i>Space Application</i> <i>Advanced Technology</i>	Project (Number/Name) 592 / <i>Space Application Tech</i>

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2015	FY 2016	FY 2017
Will mature small satellite components and integrate into a system-level demonstrator to support the Army's Warfighter Information Network – Tactical (WIN-T); continue to demonstrate small satellite payload performance through analysis and Hardware In The Loop assessments; mature architecture and software to support processing of tag, track, and locate payloads.			
Accomplishments/Planned Programs Subtotals	6.664	5.554	3.904

C. Other Program Funding Summary (\$ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

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