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Exhibit R-2, RDT&E Budget Item Justification: PB 2019 Army **Date:** February 2018

Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army / BA 3: Advanced Technology Development (ATD)	R-1 Program Element (Number/Name) PE 0603006A / Space Application Advanced Technology
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COST (\$ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
Total Program Element	-	3.787	12.231	13.000	-	13.000	13.986	16.675	17.158	17.501	0.000	94.338
592: Space Application Tech	-	3.787	12.231	13.000	-	13.000	13.986	16.675	17.158	17.501	0.000	94.338

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/timing, 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 (S&T) 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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Previous President's Budget	3.904	12.231	13.000	-	13.000
Current President's Budget	3.787	12.231	13.000	-	13.000
Total Adjustments	-0.117	0.000	0.000	-	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.116	-			
• FFRDC	-0.001	-	-	-	-

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Appropriation/Budget Activity 2040 / 3					R-1 Program Element (Number/Name) PE 0603006A / Space Application Advanced Technology				Project (Number/Name) 592 / Space Application Tech			
COST (\$ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
592: Space Application Tech	-	3.787	12.231	13.000	-	13.000	13.986	16.675	17.158	17.501	0.000	94.338

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.

This program is designated as a DoD Space Program.

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

	FY 2017	FY 2018	FY 2019
Title: Payload Technology Development	3.787	12.231	13.000
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 2018 Plans: Develop a plan to demonstrate small satellite technologies to support multi-band beyond-line-of-sight (BLOS) and on-the-move communications for disadvantaged users; mature and demonstrate incremental advances in capability for experimental small satellite communication infrastructure; assess and improve architecture and software; and plan for demonstration of tag, track, and locate payloads, to include planning for tasking, processing, exploitation, and dissemination.			
FY 2019 Plans: In FY 2019, work in this effort is realigned to support the Army science and technology (S&T) priorities as identified at the December 2016 S&T Army Requirements Oversight Council by the Chief of Staff of the Army. The effort's priority will be to mature and demonstrate technologies to address Army gaps in tracking and locating capabilities for ground objects of interest; will advance space-based data exploitation technologies and components, space-based signal detection/processing/dissemination			

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2017	FY 2018	FY 2019
technologies, and software algorithms; and will demonstrate and exploit incremental advances made in tag, track, and location technologies and capabilities.				
<i>FY 2018 to FY 2019 Increase/Decrease Statement:</i> Due to shifts in priorities, investments were increased to advance tag, track and location technologies				
Accomplishments/Planned Programs Subtotals		3.787	12.231	13.000
C. Other Program Funding Summary (\$ in Millions) N/A				
Remarks				
D. Acquisition Strategy N/A				
E. Performance Metrics N/A				