Exhibit R-2, PB 2010 Army RDT&E Budget Item Justification									DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY 2040 - Research, Development, Test & Evaluation, Army/BA 3 - Advanced Technology Development (ATD)					R-1 ITEM NOMENCLATURE PE 0603006A Command, Control, Communications Advanced Technology					
COST ($ in Millions)	**FY 2008 Actual**	**FY 2009 Estimate**	**FY 2010 Estimate**	**FY 2011 Estimate**	**FY 2012 Estimate**	**FY 2013 Estimate**	**FY 2014 Estimate**	**FY 2015 Estimate**	**Cost To Complete**	**Total Cost**
Total Program Element	11.781	11.544	8.667						Continuing	Continuing
DF7: DF7	2.973	4.349	5.080						Continuing	Continuing
257: DIGITAL BATTLEFLD COMM	.000	2.392	.000						Continuing	Continuing
592: SPACE APPLICATION TECH	8.808	4.803	3.587						Continuing	Continuing

A. Mission Description and Budget Item Justification

This program element (PE) matures and demonstrates advanced space technology applications 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, 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 supports the maturation and demonstration of Space Applications Technology efforts that provide technology options for networked and integrated surveillance and command and control capabilities to enable information superiority, enhanced situational awareness, and support for distributed operations. Project 592 also matures and demonstrates high altitude and space sensor and communications payloads for Army applications and provides technology risk reduction capability for ground-to-space surveillance system development. Project DF7 supports classified activities. Properly accessed individuals can obtain further information from the Assistant Secretary of the Army for Acquisition Logistics & Technology (ASAALT) Special Programs Office.

Work in this PE is coordinated with PE 0602120A (Sensors and Electronic Survivability) and PE 0603008 (Electronic Warfare Advanced Technology).

The cited work is consistent with the Department of 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 Space and Missile Defense Technical Center in Huntsville, AL. This program is designated as a DoD Space Program.

Exhibit R-2, PB 2010 Army RDT&E Budget Item Justification	DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY 2040 - Research, Development, Test & Evaluation, Army/BA 3 - Advanced Technology Development (ATD)	**R-1 ITEM NOMENCLATURE** PE 0603006A Command, Control, Communications Advanced Technology

B. Program Change Summary ($ in Millions)

	FY 2008	FY 2009	FY 2010	FY 2011
Previous President's Budget	14.082	9.183	8.787	
Current BES/President's Budget	11.781	11.544	8.667	
Total Adjustments	-2.301	2.361	-.120	
Congressional Program Reductions	.000	-.039		
Congressional Rescissions	.000	.000		
Total Congressional Increases	.000	2.400		
Total Reprogrammings	-1.927	.000		
SBIR/STTR Transfer	-.374	.000		

Change Summary Explanation

FY08 funding decrease is due to transfer out of congressional interest items.
FY09 funding increase is due to congressional adds.

Exhibit R-2a, PB 2010 Army RDT&E Project Justification								DATE: May 2009		
APPROPRIATION/BUDGET ACTIVITY 2040 - Research, Development, Test & Evaluation, Army/BA 3 - Advanced Technology Development (ATD)				R-1 ITEM NOMENCLATURE PE 0603006A Command, Control, Communications Advanced Technology					PROJECT NUMBER DF7	
COST ($ in Millions)	**FY 2008 Actual**	**FY 2009 Estimate**	**FY 2010 Estimate**	**FY 2011 Estimate**	**FY 2012 Estimate**	**FY 2013 Estimate**	**FY 2014 Estimate**	**FY 2015 Estimate**	**Cost To Complete**	**Total Cost**
DF7: DF7	2.973	4.349	5.080						Continuing	Continuing

A. Mission Description and Budget Item Justification

The purpose of the project is to conduct classified research efforts. The details of the efforts may be provided upon request to appropriately cleared individuals.

B. Accomplishments/Planned Program ($ in Millions)	FY 2008	FY 2009	FY 2010	FY 2011
Classified efforts	2.973	4.349	5.080	
Total	2.973	4.349	5.080	

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.

Exhibit R-2a, PB 2010 Army RDT&E Project Justification								DATE: May 2009		
APPROPRIATION/BUDGET ACTIVITY 2040 - Research, Development, Test & Evaluation, Army/BA 3 - Advanced Technology Development (ATD)				R-1 ITEM NOMENCLATURE PE 0603006A Command, Control, Communications Advanced Technology					PROJECT NUMBER 257	
COST ($ in Millions)	**FY 2008 Actual**	**FY 2009 Estimate**	**FY 2010 Estimate**	**FY 2011 Estimate**	**FY 2012 Estimate**	**FY 2013 Estimate**	**FY 2014 Estimate**	**FY 2015 Estimate**	**Cost To Complete**	**Total Cost**
257: DIGITAL BATTLEFLD COMM	.000	2.392	.000						Continuing	Continuing

A. Mission Description and Budget Item Justification

Congressional Interest Item funding for Digital Battlefield advanced technology development.

B. Accomplishments/Planned Program ($ in Millions)	FY 2008	FY 2009	FY 2010	FY 2011
Vertical/Horizontal Integration of Space Technologies and Applications (VISTA)	.000	2.325	.000	
SBIR/STTR	.000	.067	.000	
Total	.000	2.392	.000	

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.

Exhibit R-2a, PB 2010 Army RDT&E Project Justification								DATE: May 2009		
APPROPRIATION/BUDGET ACTIVITY 2040 - Research, Development, Test & Evaluation, Army/BA 3 - Advanced Technology Development (ATD)				R-1 ITEM NOMENCLATURE PE 0603006A Command, Control, Communications Advanced Technology					PROJECT NUMBER 592	
COST ($ in Millions)	**FY 2008 Actual**	**FY 2009 Estimate**	**FY 2010 Estimate**	**FY 2011 Estimate**	**FY 2012 Estimate**	**FY 2013 Estimate**	**FY 2014 Estimate**	**FY 2015 Estimate**	**Cost To Complete**	**Total Cost**
592: SPACE APPLICATION TECH	8.808	4.803	3.587						Continuing	Continuing

A. Mission Description and Budget Item Justification

This project matures and demonstrates advanced space technology applications 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, DoD, and Army space policies. This project matures and demonstrates advanced technologies in the areas of light weight materials, miniaturization, reduced power consumption, and advanced data collection, processing, and dissemination. 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. It matures and demonstrates payloads for tactically responsive space and high altitude platforms, sensors, and data down link systems. This project provides space advanced technology risk reduction capability for ground-to-space surveillance and systems development.

Work in this Project is coordinated with PE 0602120A (Sensors and Electronic Survivability) and PE 0603008 (Electronic Warfare Advanced Technology).

The cited work is consistent with the Department of 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 Space and Missile Defense Technical Center in Huntsville, AL. This program is designated as a DoD Space Program.

B. Accomplishments/Planned Program ($ in Millions)	**FY 2008**	**FY 2009**	**FY 2010**	**FY 2011**
All Weather Radio Frequency (RF) Launch Detection: This effort is maturing and demonstrating a passive radio frequency sensor / receiver system to detect, locate, and classify weapons ordnance events in all weather conditions. In FY08, designed, fabricated, and tested a Multiple Antenna Radiometer Sensor (MARS) that successfully detected RF emissions during launch of tactical rocket systems; collected data on rockets, artillery, and missile projectiles during weapons systems field testing; matured detection and classification algorithms using data collection results; demonstrated the enhanced MARS application for Counter-Rockets, Artillery, and Mortars (CRAM) Project Office applications.	2.214	.000	.000	
Payload Technology Development: This effort is maturing technologies for smaller, Warfighter-responsive sensor and communication payloads for use in both space and high altitude environments.	.000	1.397	1.124	

Exhibit R-2a, PB 2010 Army RDT&E Project Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY 2040 - Research, Development, Test & Evaluation, Army/BA 3 - Advanced Technology Development (ATD)	R-1 ITEM NOMENCLATURE PE 0603006A Command, Control, Communications Advanced Technology	PROJECT NUMBER 592

B. Accomplishments/Planned Program ($ in Millions)	FY 2008	FY 2009	FY 2010	FY 2011
In FY09, mature tactical radio relay payloads, to include Single Channel Ground to Air Radio System (SINCGARS) radio and antenna subsystems, to improve survivability, range, and bandwidth in high altitude and space environments; and demonstrate tactical radio relay payload performance at high altitude. In FY10, will mature EO/IR imaging space sensor; using prior year demonstration data, will mature the tactical radio relay payload to improve bandwidth and support more users; will demonstrate improved tactical radio relay payload performance at high altitude.				
Distributed Imaging Radar Technology (DIRT): This effort is demonstrating software algorithms for multi-perspective synthetic aperture radars to provide precision tracking and targeting based on an enhanced radar image. In FY08, integrated DIRT algorithms and demonstrated Inverted Synthetic Aperture Radar (ISAR) and Volumetric Synthetic Aperture Radar (VSAR) imaging of targets with real radars; and integrated DIRT algorithms into a fixed site Distributed Common Ground Station - Army (DCGS-A version 2) facility, demonstrated and validated software, and refined DIRT algorithms for tactical aerial platforms.	3.045	.000	.000	
Vertical Integration of Space Technology and Applications (VISTA): This effort is maturing and demonstrating algorithms and intelligent agent based software applications to provide missile threat warning for Warfighters on-the-move. In FY08, designed and demonstrated Intelligent Agent components that process missile warning messages; developed agent reference models and VISTA architecture; and completed initial build of VISTA's Multi-Agent Knowledge Online (MAKO) software. In FY09, mature and demonstrate vertical and horizontal integration of missile threat warning, collaborative planning, and tailored data, and information distribution to verify compatibility of intelligent agent and knowledge management technologies. In coordination with the US Army Communications - Electronics Research, Development, and Engineering Center (CERDEC), integrate and demonstrate VISTA with Army networks and within battle command applications. In FY10, will mature the intelligent agent software technology including automated and seamless distribution of relevant space and strategic system-developed situational awareness information to specific Brigade and below tactical units in a format that can be directly integrated into their applicable Battle Command System, including Force XXI Battle Command Brigade and Below (FBCB2) and Command and Control Personal Computer (C2PC); and will demonstrate the automated network-centric VISTA capability in the Army Training and Doctrine Command (TRADOC) Battle Laboratory Collaborative Simulation Environment.	1.112	3.290	2.463	
Small Business Innovative Research/Small Business Technology Transfer Programs	.000	.116	.000	

Exhibit R-2a, PB 2010 Army RDT&E Project Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY 2040 - Research, Development, Test & Evaluation, Army/BA 3 - Advanced Technology Development (ATD)	R-1 ITEM NOMENCLATURE PE 0603006A Command, Control, Communications Advanced Technology	PROJECT NUMBER 592

B. Accomplishments/Planned Program ($ in Millions)	FY 2008	FY 2009	FY 2010	FY 2011
Ground Based Space Surveillance: This effort is leveraging existing missile defense sensor capabilities to demonstrate space surveillance of satellites over the theater of operations to determine their operational intent and assess impact on ground forces. In FY08, completed and validated algorithm and netted sensor hardware/software development; demonstrated mobile data processor with ground sensor in netted ground architecture; and began integration of the ground based space surveillance technology into the Extended Space Sensors Architecture (ESSA) Advanced Concept Technology Demonstration scheduled for a March 2009 demonstration.	2.437	.000	.000	
Total	8.808	4.803	3.587	

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.