ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

February 2002

BUDGET ACTIVITY	PE NUMBER AND TITLE
3 - Advanced technology development	**0603006A - Command, Control, Communications Advanced Technolo**

	COST (In Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate
	Total Program Element (PE) Cost	27820	33176	4826	5236	5670	6279	6840
247	TAC C4 TECHNOLOGY INT	12313	13772	238	206	192	185	181
257	DIGITAL BATTLEFLD COMM	3703	11478	237	194	181	177	170
592	SPACE APPLICATION TECH	5075	7926	4351	4836	5297	5917	6489
59A	INTELLIGENCE ANALYSIS ADVANCED TOOL SET	3845	0	0	0	0	0	0
59B	BIG CROW PROGRAM OFFICE SUPPORT	2884	0	0	0	0	0	0

A. Mission Description and Budget Item Justification: This project matures and demonstrates advanced space technology applications for the Army's Objective Force. It provides Space Force Enhancement applications for intelligence, reconnaissance, surveillance, target acquisition, position/navigation, missile warning, and Space Control ground-to-space surveillance, negation and battle management capabilities. Advanced Space Force Enhancement technologies include electro-optical, infrared, multi/hyperspectral, synthetic aperture radar, ground-to-space radar, directed energy, and advanced data collection, processing and dissemination in real and near real time. Additionally, the project demonstrates, evaluates, and defines Army technical requirements for space platform/sensor systems, on orbit sensor data collection and processing, satellite tasking and direct downlink data dissemination to ground/air systems. The project develops algorithms that optimally process space sensor data in real and near real time for integration into battlefield operating systems. This project provides Space Control advanced technology risk reduction capability for ground-to-space surveillance and space object negation (disrupt, degrade, deny and destroy) systems development. Additionally, the project provides an advanced space technology base for the space and missile defense battlelab. This program supports the Objective Force transition path of the TCP. This program is designated as a DoD Space Program. Funding for non-space related programs was realigned to PE 0603008 starting in FY03.

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B. Program Change Summary	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2002 PB)	28243	31865	22988
Appropriated Value	28505	33465	0
Adjustments to Appropriated Value	0	0	0
a. Congressional General Reductions	0	-289	0
b. SBIR / STTR	-754	0	0
c. Omnibus or Other Above Threshold Reductions	0	0	0
d. Below Threshold Reprogramming	331	0	0
e. Rescissions	-262	0	0
Adjustments to Budget Years Since FY2002 PB	0	0	-18162
Current Budget Submit (FY 2003 PB)	27820	33176	4826

Change Summary Explanation:
Significant Changes:

FY03 (-$18162) - Reduced due to realignment of non-space related projects to Program Element 0603008.

FY02 - Congressional adds were made for Battlefield Ordnance Awareness, Project 592 ($2800); and Network Environment for C3 Mobile Services, Project 257 ($2800).

Projects With No R-2A
Project 247 (FY02 Funding = $13772) - The objective of this project is to mature network and communications technology options for the Objective Force. FY03-07 funding will realign into Program Element 0603008, Project TR1.

Project 257 (FY02 Funding = $11478) - The objective of this project is to provide the Army's Objective Force with communications capability that supports dispersed wireless elements in diverse complex terrain. FY03-07 funding will realign into Program Element 0603008, Project TR2.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

February 2002

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
3 - Advanced technology development	**0603006A - Command, Control, Communications Advanced Technolo**	**592**

COST (In Thousands)		FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate
592	SPACE APPLICATION TECH	5075	7926	4351	4836	5297	5917	6489

A. Mission Description and Budget Item Justification: This project matures and demonstrates advanced space technology applications for the Army's Objective Force. It provides Space Force Enhancement applications for intelligence, reconnaissance, surveillance, target acquisition, position/navigation, missile warning, and Space Control ground-to-space surveillance, negation and battle management capabilities. Advanced Space Force Enhancement technologies include electro-optical, infrared, multi/hyperspectral, synthetic aperture radar, ground-to-space radar, directed energy, and advanced data collection, processing and dissemination in real and near real time. Additionally, the project demonstrates, evaluates, and defines Army technical requirements for space platform/sensor systems, on orbit sensor data collection and processing, satellite tasking and direct downlink data dissemination to ground/air systems. The project develops algorithms that optimally process space sensor data in real and near real time for integration into battlefield operating systems. This project provides Space Control advanced technology risk reduction capability for ground-to-space surveillance and space object negation (disrupt, degrade, deny and destroy) systems development. Additionally, the project provides an advanced space technology base for the space and missile defense battlelab. This program supports the Objective Force transition path of the TCP. This program is designated as a DoD Space Program.

FY 2001 Accomplishments:

- 986 - Demonstrated Overhead Sensor on board, near-real time, spectral/polarization data processing, and hyperspectral spatial and temporal signature processing with sensor in tower tests.
- 3032 - Completed Battlefield Ordnance Awareness infrared signature database development.
  - Demonstrated algorithms for near real time processing of ordnance events in airborne tests.
  - Developed initial set of Army technical ordnance reporting requirements for integration in intelligence, fire support and DoD space based infrared systems.
- 1057 - Completed Space Surveillance threat database development and evaluated potential image correlation process algorithms for technology demonstration.

Total 5075

FY 2002 Planned Program

- 1118 - Field test an integrated Overhead Sensor on an aerial platform and measure performance against camouflaged and concealed tactical targets.

  - Assess performance of Long Wave Infrared/ Acoustic-Optical Turable Filter (LWIR /AOTF) and focal plane array; define LWIR hyperspectral sensor design for aerospace test platforms.
- 3771 - Complete Battlefield Ordnance Awareness (BOA) technical requirements definition and provide to DoD space based infrared system developers.

  - Transition advanced infrared and data processing algorithms to intelligence and fire support systems developers with Proof of Principle Operational Field Test.
- 3037 - Mature formal Space Surveillance software coding of algorithms, user interface design and demonstrate threat assessment techniques on ground-to-space surveillance radar.

Total 7926

FY 2003 Planned Program

- 1465 - Integrate Overhead Sensor advanced LWIR hyperspectral technologies into an air platform for demonstration.
- 2886 - Complete Space Surveillance radar hardware/software integration and demonstrate near real time threat assessment in an integrated laboratory environment.

Total 4351