ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2007

BUDGET ACTIVITY	PE NUMBER AND TITLE
3 - Advanced technology development	**0603734A - Military Engineering Advanced Technology**

	COST (In Thousands)	FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate
	Total Program Element (PE) Cost	20868	27688	6837	7676	5754	6786	6935	7088
T08	COMBAT ENG SYSTEMS	7068	7761	6837	7676	5754	6786	6935	7088
T13	Stationary Power & Energy Tech Demonstrations (CA)	9871	13994						
T15	MILITARY ENGINEERING TECHNOLOGY DEMONSTRATION (CA)	3929	5933						

A. Mission Description and Budget Item Justification: The objective of this advanced technology development program element (PE) is to mature and demonstrate advanced military engineering and battlespace environment technologies that support the Future Force, and where feasible, exploit opportunities to enhance Current Force capabilities. Technologies demonstrated within this PE are transitioned from PE 0602784A (Military Engineering Technology). Military engineering technologies demonstrated include Joint Rapid Airfield Construction (JRAC) technologies that support the expedient upgrading of existing airfields and rapid construction of new contingency airfields. Battlespace environment technologies demonstrated include Battlespace Terrain Reasoning and Awareness (BTRA) and Joint-Geospatial Enterprise Services (J-GES) technologies. BTRA enables the warfighter to understand the impact of the terrain and weather effects during planning and execution of military operations. The J-GES program matures and demonstrates technology that supports network centric delivery and update of geospatial data and services to all echelons for battle command planning and mission rehearsal. The cited work is consistent with Strategic Planning Guidance, the Army Science and Technology Master Plan (ASTMP), the Army Modernization Plan, and the Defense Technology Area Plan (DTAP). The U.S. Army Engineer Research and Development Center, headquartered at Vicksburg, MI, executes the project work.

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B. Program Change Summary	FY 2006	FY 2007	FY 2008	FY 2009
Previous President's Budget (FY 2007)	21390	7848	6890	7690
Current BES/President's Budget (FY 2008/2009)	20868	27688	6837	7676
Total Adjustments	-522	19840	-53	-14
Congressional Program Reductions		-106		
Congressional Rescissions				
Congressional Increases		20150		
Reprogrammings	-522	-204		
SBIR/STTR Transfer				
Adjustments to Budget Years			-53	-14

Twelve FY07 congressional adds totaling $19312 (after adjustment for Congressional Undistributed Reductions) were added to this PE.

($958) Fuel Cell Hybrid Gen Sys w/Ramgen Jet Tech
($958) Def Apps for Thermo-Electric Power Gen Devices
($1294) Def Apps of Stationary Carbonate Fuel Cells
($959) Real-time Drinking Water Security Program
($1294) Accelerating the Transition of Fuel Cell Systems
($3115) Advanced Tactical Fuels
($1246) Fuel Cell Mobile Electric Power System
($3738) Fuel Cell Power for Continuity of Operations
($2875) USArmy Adv Structures & Composites in Construction
($959) Concrete Sealing System
($958) Counter Rocket, Artillery,Mortar (C-RAM) Armor Dev
($958) Frameworks f/Rapid Engnr Design Optim SW

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2007

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
3 - Advanced technology development	**0603734A - Military Engineering Advanced Technology**	**T08**

COST (In Thousands)	FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate
T08 COMBAT ENG SYSTEMS	7068	7761	6837	7676	5754	6786	6935	7088

A. Mission Description and Budget Item Justification: The objective of this advanced technology development project is to mature and demonstrate advanced military engineering and battlespace environment technologies that support the Future Force and, where feasible, exploit opportunities to enhance Current Force capabilities. Technologies demonstrated within this project are transitioned from program element 0602784A (Military Engineering Technology), projects 855, T40, and T42. Joint Rapid Airfield Construction (JRAC) technologies support the expedient upgrading of existing airfields and rapid construction of new contingency airfields. Battlespace Terrain Reasoning and Awareness (BTRA) technologies enable the warfighter to understand the impact of the terrain and weather effects during planning and execution of military operations. BTRA completed in FY06, and will be advanced through future work in Battlespace Terrain Reasoning and Awareness - Battle Command (BTRA-BC), an Army Technology Objective (ATO). The Joint-Geospatial Enterprise Services (J-GES) research program matures and demonstrates technology that supports network centric delivery and update of geospatial data and services to all echelons for battle command planning and mission rehearsal. The cited work is consistent with Strategic Planning Guidance, the Army Science and Technology Master Plan (ASTMP), the Army Modernization Plan, and the Defense Technology Area Plan (DTAP). The US Army Engineer Research and Development Center, headquartered at Vicksburg, MI, executes the project work.

Accomplishments/Planned Program:	FY 2006	FY 2007	FY 2008	FY 2009
Joint Rapid Airfield Construction: In FY06, evaluated select maintenance and repair techniques for contingency airfields and developed integrated site selection tools including integrated advanced site assessment models, terrain analysis technologies, and performance prediction modeling to optimize contingency airfield site selection. In FY07, demonstrate JRAC technologies for site selection, enhanced construction, and rapid soil stabilization for C-17 contingency airfield operations during the Talisman Sabre Exercise at Bradshaw Field Training Area in Northern Territory, Australia.	3943	2027		
Joint-Geospatial Enterprise Services (J-GES): In FY06, utilized a network-centric architecture to demonstrate basic geospatial information services from multiple locations and developed technology that supports network centric delivery and update of geospatial data and services. In FY07, expand J-GES capabilities including developing a technical architecture that will support experimentation. With the architecture developed, perform initial experiments focused on determining where geospatial services should be employed and the value of these services to the military decision-making process. In FY08, will continue experimentation focused on evaluating geospatial data/information flow across multiple echelons to support battle command planning and mission rehearsal, as well as identifying transition opportunities for these geoservices to Battle Command and Intelligence, Surveillance, and Reconnaissance programs. In FY09, will transition urban-focused geospatial research and technologies developed under PE 0602784/project 855 into the J-GES environment for experimentation and validation.	1917	2715	1147	1286
Battlespace Terrain Reasoning and Awareness Demonstrations: In FY06, established a terrain reasoning capability within the Multi-cell and Dismounted Experimentation Program to measure the benefit of terrain reasoning for informed command and control decision making; conducted initial demonstration of tactical bandwidth compatible situation and threat assessment tools within battlefield functional area processes and battlefield operating systems architectures. BTRA transitioned to an advanced development program entitled Battlespace Terrain Reasoning and Awareness - Battle Command (BTRA-BC).	1208			

Battlespace Terrain Reasoning and Awareness - Battle Command(BTRA-BC): In FY07, test, evaluate, and validate spatial and predictive analysis tools, some of which were developed under BTRA, through experiments within simulated battle command and intelligence, surveillance and reconnaissance environments leveraging the J-GES as a specific beta evaluation. In FY08, will accredit sensor effects software developed using CMMI processes, to be deployed to Commercialized Joint Mapping Tool Kit program of record. In FY09, will demonstrate and experiment within J-GES tools designed for urban data and urban routing structures.		2867	5690	6390
Small Business Innovative Research/Small Business Technology Transfer Programs		152		
Total	7068	7761	6837	7676