

UNCLASSIFIED

Exhibit R-2, PB 2010 Army RDT&E Budget Item Justification	DATE: May 2009
--	-----------------------

APPROPRIATION/BUDGET ACTIVITY					R-1 ITEM NOMENCLATURE					
2040 - Research, Development, Test & Evaluation, Army/BA 3 - Advanced Technology Development (ATD)					PE 0603734A Military Engineering 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	34.581	35.855	5.911						Continuing	Continuing
T08: COMBAT ENG SYSTEMS	6.686	7.630	5.911						Continuing	Continuing
T13: Stationary Power & Energy Tech Demonstrations (CA)	15.748	13.395	.000						Continuing	Continuing
T15: MILITARY ENGINEERING TECHNOLOGY DEMONSTRATION (CA)	12.147	14.830	.000						Continuing	Continuing

A. Mission Description and Budget Item Justification

The objective of this program element (PE) is to mature and demonstrate advanced military engineering and geospatial research and engineering technologies. Military engineering technologies demonstrated include adaptive protection technologies that provide the Warfighter with protective systems to combat highly adaptive and increasingly severe threats. Geospatial research and engineering 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. Technologies demonstrated within this PE are transitioned from PE 0602784A (Military Engineering Technology).

The cited work is consistent with the Director, 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 Engineer Research and Development Center (ERDC), Vicksburg, MS.

UNCLASSIFIED

UNCLASSIFIED

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 0603734A Military Engineering Advanced Technology			
<u>B. Program Change Summary (\$ in Millions)</u>					
	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	
Previous President's Budget	28.355	7.654	5.772		
Current BES/President's Budget	34.581	35.855	5.911		
Total Adjustments	6.226	28.201	.139		
Congressional Program Reductions	.000	-.119			
Congressional Rescissions	.000	.000			
Total Congressional Increases	.000	28.320			
Total Reprogrammings	6.939	.000			
SBIR/STTR Transfer	-.713	.000			

UNCLASSIFIED

R-1 Line Item #50

Page 2 of 8

684 of 703

UNCLASSIFIED

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 0603734A Military Engineering Advanced Technology					PROJECT NUMBER T08	
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
T08: COMBAT ENG SYSTEMS	6.686	7.630	5.911						Continuing	Continuing

A. Mission Description and Budget Item Justification

This advanced technology development project will mature and demonstrate advanced military engineering and geospatial research and engineering 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. Defeat of Emerging Adaptive Threats (DEFEAT) technologies will provide the warfighter with protective systems that save lives and increase the survivability of fixed facilities and critical assets. 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. Technologies developed in this area will be advanced through future work in Battlespace Terrain Reasoning and Awareness - Battle Command (BTRA-BC) and Collaborative Battlespace Reasoning and Awareness (COBRA) efforts to increase the agility of the decision making process. 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 and will quantify the utility of geospatial information to Battle Command and the Military Decision Making Process (MDMP).

The cited work is consistent with the Director, Defense Research and Engineering Strategic Plan, the Army Modernization Strategy, and the Army Science and Technology Master Plan.

Work in this project is performed by the US Army Engineer Research and Development Center (ERDC), Vicksburg, MS.

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

	FY 2008	FY 2009	FY 2010	FY 2011
Small Business Innovative Research/Small Business Technology Transfer Programs	.000	.124	.000	
Battlespace Terrain Reasoning and Awareness - Battle Command (BTRA-BC): In FY08, accredited sensor effects software developed using Capability Maturity Model Integration (CMMI) processes and transition to Commercialized Joint Mapping Tool Kit program of record. In FY09, demonstrate and evaluate tools designed for urban data and urban routing structures within Joint-Geospatial Enterprise Services (J-GES). In FY10, will demonstrate unified net-centric data strategies within common architecture and framework across Intelligence, Operations, and Geospatial communities.	5.537	6.244	4.784	
	1.149	1.262	1.127	

UNCLASSIFIED

R-1 Line Item #50

Page 3 of 8

685 of 703

UNCLASSIFIED

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 0603734A Military Engineering Advanced Technology		PROJECT NUMBER T08	
B. Accomplishments/Planned Program (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2011
Joint-Geospatial Enterprise Services (J-GES): In FY08, continued evaluation focused on assessing geospatial data/information flow across multiple echelons to support battle command planning and mission rehearsal, as well as on identifying transition opportunities for these geo-services to Battle Command and Intelligence, Surveillance, and Reconnaissance programs. In FY09, transition urban-focused geospatial research and technologies developed under PE 0602784A/project 855 into the J-GES environment for demonstration and validation. In FY10, will conduct evaluations that will assess geospatial data and information requirements for users and evaluate trade-offs with regard to force structure, location and storage of geospatial data and information, available bandwidth, and computation resources across the enterprise.				
Total	6.686	7.630	5.911	
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.				

UNCLASSIFIED

UNCLASSIFIED

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 0603734A Military Engineering Advanced Technology					PROJECT NUMBER T13	
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
T13: Stationary Power & Energy Tech Demonstrations (CA)	15.748	13.395	.000						Continuing	Continuing
A. Mission Description and Budget Item Justification										
Congressional Interest Item funding for Stationary Power and Energy advanced technology development.										
B. Accomplishments/Planned Program (\$ in Millions)						FY 2008	FY 2009	FY 2010	FY 2011	
Quiet, Low-Impact Alternative Energy Technology						.000	2.170	.000		
1 Megawatt Molten Carbonate Fuel Cell Demonstrator at 29 Palms						3.091	.000	.000		
Defense Applications of Carbonate Fuel Cells						1.545	1.550	.000		
Gas Engine Driven Air Conditioning Demonstration (GEDAC)						1.159	2.325	.000		
Advanced Tactical Fuels for the Military						1.933	3.875	.000		
Zero Energy Homes at Ft, Knox, Kentucky						.967	.000	.000		
Development and Research of Zero Energy Homes at FT Campbell						2.125	.000	.000		
Army Applications of Direct Carbon Fuel Cells						1.546	.775	.000		
Regenerative Fuel Cell System for Silent Camp Operations						2.898	.000	.000		
Natural Gas Firetube Boiler Demonstration						.484	.000	.000		
Direct Methanol Fuel Cell Development (pending transfer to 62705)						.000	.775	.000		
Complete Molten Carbonate Fuel Cell Demonstrator-Parks Reserve Forces Training Area						.000	1.550	.000		
SBIR/STTR						.000	.375	.000		
Total						15.748	13.395	.000		

UNCLASSIFIED

UNCLASSIFIED

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 0603734A Military Engineering Advanced Technology	PROJECT NUMBER T13
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.		

UNCLASSIFIED

UNCLASSIFIED

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 0603734A Military Engineering Advanced Technology					PROJECT NUMBER T15		
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	
T15: MILITARY ENGINEERING TECHNOLOGY DEMONSTRATION (CA)	12.147	14.830	.000						Continuing	Continuing	
A. Mission Description and Budget Item Justification											
These are Congressional Interest Items											
B. Accomplishments/Planned Program (\$ in Millions)								FY 2008	FY 2009	FY 2010	FY 2011
Biomass-to-Liquid Using Synthetic Enzymes								.000	1.938	.000	
Conversion of Munciple Solid Waste to Renewable Diesel Fuel								.000	1.550	.000	
Buckeye								4.609	.000	.000	
University Center for Disaster Preparedness and Emergency Response								.000	1.550	.000	
Fireproofing/Corrosion Resistant Coating System for Military Infrastructure								.967	.000	.000	
C-RAM Armor Development								1.161	.775	.000	
Synthetic Auto Virtual Environment (SAVE)								1.546	2.325	.000	
JGES for Improved Combat Situational Awareness								3.864	.000	.000	
Enhanced Holographic Imager								.000	2.403	.000	
Nanotechnology for Potable Water and Waste Treatment								.000	.969	.000	
Human Terrain Geographic Decision Support								.000	2.906	.000	
SBIR/STTR								.000	.414	.000	
Total								12.147	14.830	.000	

UNCLASSIFIED

UNCLASSIFIED

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 0603734A Military Engineering Advanced Technology	PROJECT NUMBER T15
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.		

UNCLASSIFIED