Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Army										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 3: *Advanced Technology Development (ATD)*				R-1 ITEM NOMENCLATURE PE 0603125A: *Combating Terrorism - Technology Development*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	11.366	10.550	12.191	-	12.191	9.611	9.941	10.016	10.101	Continuing	Continuing
DF5: *AGILE INTEGRATION & DEMONSTRATION*	11.366	10.550	12.191	-	12.191	9.611	9.941	10.016	10.101	Continuing	Continuing

A. Mission Description and Budget Item Justification

This program element (PE) demonstrates technologies with high payoff potential to address current technology shortfalls or future force capability gaps.

Work in this PE complements and is fully coordinated with PE 0603710A (Night Vision Advanced Technology), PE 0602303A (Missile Technology), PE 0602105A (Materials Technology), PE 0602618A (Ballistics Technology), PE 0602601A (Combat Vehicle and Automotive Technology), PE 0603005A (Combat Vehicle and Automotive Advanced Technology) and PE 0602705A (Electronics and Electronic Devices).

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 Army Research, Development, and Engineering Command (RDECOM) and the Army Engineer Research and Development Center.

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	11.927	10.550	12.191	-	12.191
Current President's Budget	11.366	10.550	12.191	-	12.191
Total Adjustments	-0.561	-	-	-	-
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-0.153	-			
• SBIR/STTR Transfer	-0.408	-			

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 3: *Advanced Technology Development (ATD)*	R-1 ITEM NOMENCLATURE PE 0603125A: *Combating Terrorism - Technology Development*	PROJECT DF5: *AGILE INTEGRATION & DEMONSTRATION*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
DF5: *AGILE INTEGRATION & DEMONSTRATION*	11.366	10.550	12.191	-	12.191	9.611	9.941	10.016	10.101	Continuing	Continuing

A. Mission Description and Budget Item Justification

This project demonstrates technologies with high payoff potential to address current technology shortfalls or future force capability gaps. Efforts include hybrid electric power technologies to reduce use of fossil fuel generators and deployable force protection technologies.

Work in this project is complementary to and is fully coordinated with PE 0603710A (Night Vision Advanced Technology), PE 0602303A (Missile Technology), PE 0602105A (Materials Technology), PE 0602618A (Ballistics Technology), PE 0602601A (Combat Vehicle and Automotive Technology), PE 0602784A (Military Engineering Technology), PE 0603734A (Military Engineering Advanced Technology), PE 0603005A (Combat Vehicle and Automotive Advanced Technology) and PE 0602705A (Electronics and Electronic Devices).

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 Army Research, Development, and Engineering Command (RDECOM) and the Army Engineer Research and Development Center.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Title: Agile Integration & Demonstration	7.676	-	-
Description: This effort accelerates the development and testing of capabilities that address future force needs. It identifies maturing technologies from within all Army research and development (R&D) activities and the Department of Energy (DOE) to accelerate the development of suitable technologies to the Warfighter for demonstration. Emphasis continues to be on those high payoff and cost effective areas that provide the operational forces increased protection and survivability and meet the Operational Need Statements of the deployed forces in Operation Enduring Freedom (OEF) and Operation Iraqi Freedom (OIF). ***FY 2010 Accomplishments:*** Integrated 3-D fusion algorithms for persistent stare operations on the Constant Hawk manned aircraft sensor collection system; fielded advanced trauma and wound treatments for hemostasis/clotting; integrated 30mm ammunition lethality improvements; and fielded advanced improvised explosive device (IED) integration, communication and thermal viewing technologies to route clearance teams in Afghanistan and Iraq.			
Title: Transportable Hybrid Electric Power Station (THEPS)	3.690	4.850	4.691

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 3: *Advanced Technology Development (ATD)*	R-1 ITEM NOMENCLATURE PE 0603125A: *Combating Terrorism - Technology Development*	PROJECT DF5: *AGILE INTEGRATION & DEMONSTRATION*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Description: This effort is developing and demonstrating intelligent power management technology to reduce use of fossil fuel generators while proving the ability to incorporate solar, wind and advanced storage technology. ***FY 2010 Accomplishments:*** Conducted THEPS demonstration at remote sites and operating bases; continued demonstrations at Forward Operating Bases (FOB) with less logistics tail and more cost avoidance as a result of consuming less fossil fuel. ***FY 2011 Plans:*** Hybrid Intelligent Power (HI Power) is maturing and demonstrating technologies for an intelligent power grid that allows for the most efficient use of the tactical power sources available in support of remote operations and tactical command posts. In FY11, demonstrate a 30 kilowatt HI Power grid; conduct efficiency testing on demonstrators; mature and demonstrate a direct current distribution architecture and associate power electronics. ***FY 2012 Plans:*** Will develop and demonstrate an autonomous hybrid power grid architecture for the power range of 3 to 60 kilowatt capable of accepting direct current (DC) input from 20 volts DC to 32 volts DC, and be scalable to 500 kilowatts; will develop and demonstrate advance control hardware and software; will develop and assess a standard secure communication protocol; will continue development of a draft system specification.			
Title: Rapid Deployable Force Protection Technologies ***Description:*** This effort improves design, development and employment of force protection technologies that are rapidly deployable to support troops operating in forward areas. These technologies must be readily transportable; require minimal set up, take down, and operational effort; and easily adaptable across a variety of missions, environments, and threats. This effort is coordinated with PE 0602784A, PE 0603734A, PE 0602786A, and PE 0603313A. ***FY 2011 Plans:*** Identify force protection technologies that meet the rapidly deployable construct; develop criteria for initial selection and criteria for assessments of candidate force protection technologies based on stakeholder prioritized needs for force protection functions and system characteristics; design and conduct a series of demonstrations to baseline performance of selected force protection technologies, such as passive protection and/or non line-of-sight sensing, and to identify improvements in design, development and implementation; coordinate proposed improvements with designers, developers, and stakeholders. Scope includes assessing systems vulnerabilities regarding the ability to conduct force protection effectively. ***FY 2012 Plans:***	-	5.700	7.500

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Will refine and update criteria for deployable force protection technologies in order to meet capability gaps based on stakeholder input; will mature and evolve promising technologies identified and assessed in prior year's effort; will identify new and emerging force protection technologies that meet the rapidly deployable construct; will select and assess candidate force protection technologies to support a system of systems design for force protection based on prioritized needs from stakeholders; will include advanced assessments of technology improvements based on prior year's efforts; will design and conduct a series of demonstrations and experiments to assess performance of selected force protection technologies and to identify improvements in design, development and implementation; will include assessing systems vulnerabilities regarding the ability to conduct force protection effectively; and will coordinate improvements with designers, developers, and stakeholders.			
Accomplishments/Planned Programs Subtotals	11.366	10.550	12.191

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.