

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2007

BUDGET ACTIVITY <b>3 - Advanced technology development</b>	PE NUMBER AND TITLE <b>0603007A - Manpower, Personnel and Training Advanced Technolo</b>							
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	9796	9200	6783	6871	6895	6979	7121	7267
792 Personnel Performance & Training	6347	6579	6783	6871	6895	6979	7121	7267
79A Personnel & Training Adv Tech Initiatives (CA)	3449	2621						

**A. Mission Description and Budget Item Justification:** This program element (PE) funds the Army's behavioral and social science advanced technology development program that provides non-materiel solutions to transform the human warfighter in concert with the technological transformations in systems, weapons, equipment, and the changes in mission requirements to meet the goals of the Future Force. The program develops, matures, and demonstrates (1) technologies to assess how Soldiers and units are impacted by mission, policy, or program changes; (2) training techniques that will enable Soldiers to take full advantage of advances in technology and systems as they evolve and that will help the Army attain its goals of embedded training in future combat systems; and (3) strategies and tools to enhance leader development so younger leaders have tactical and strategic capabilities and can easily adapt to changing mission demands. In addition, this program also exploits opportunities to enhance Current Force capabilities. This program leverages and coordinates with work in outside organizations such as the Institute for Creative Technologies (ICT), Simulation and Training Technology Center (STTC), and US Air Force Research Laboratory (USAFRL). 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). This PE is managed by the US Army Research Institute for the Behavioral and Social Sciences (ARI).

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<b><u>B. Program Change Summary</u></b>	FY 2006	FY 2007	FY 2008	FY 2009
Previous President's Budget (FY 2007)	10235	6794	6336	6383
Current BES/President's Budget (FY 2008/2009)	9796	9200	6783	6871
Total Adjustments	-439	2406	447	488
Congressional Program Reductions		-177		
Congressional Rescissions				
Congressional Increases		2650		
Reprogrammings	-439	-67		
SBIR/STTR Transfer				
Adjustments to Budget Years			447	488
<p>Two FY07 congressional adds totaling \$2540 (after adjustment for Congressional Undistributed Reductions) were added to this PE.</p> <p>(\$1246) Battle Command Team Training (BCTT) Program                      (\$1294) Modeling &amp; Simulation for Homeland Defense</p>				

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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	
792 Personnel Performance & Training	6347	6579	6783	6871	6895	6979	7121	7267	

**A. Mission Description and Budget Item Justification:** The objective of this project is to refine, mature, and demonstrate advanced behavioral and social science technologies that enhance performance to ensure that the human warfighter keeps pace with the transformations in systems, weapons, equipment, and mission requirements to meet the goals of the Future Modular Force. The project, where feasible, exploits opportunities to enhance Current Force capabilities. Advanced technology development efforts include: maturing and demonstrating training methods and techniques that prepare battle commanders to effectively operate in digitized, networked environments, and that enable the use of embedded training technologies envisioned for future command and control (C2) systems, such as the Future Combat System (FCS); devising strategies to use distributed and game-based technologies for effective multi-site training, assessment, and feedback; developing improved tools for selecting and classifying personnel for flight training; and developing tools that capitalize on the various synthetic environments that facilitate the advancement of leader knowledge, skills, and abilities (KSAs), and that can provide virtual mission experiences to leaders earlier in their career development cycle to foster cognitive flexibility, adaptability, and mission readiness. In addition, this project matures techniques to determine the effects of policy changes (such as implementation of the Army Force Generation Model [ARFORGEN]) and operational changes (such as increased number and length of deployments) on unit cohesion and Soldier readiness. This program leverages and coordinates research efforts with the Institute for Creative Technologies (ICT), Simulation and Training Technology Center (STTC), and Communication-Electronics Research Development and Engineering Center (CERDEC). Work in this program element (PE) is related to and fully coordinated with efforts funded in PE 0601102 project 74F and PE 0602785 project 790. 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). This PE is managed by the US Army Research Institute for the Behavioral and Social Sciences (ARI).

<u>Accomplishments/Planned Program:</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Personnel Technology: FY06, assessed small-unit cohesion and identified the most critical factors influencing cohesion in a stabilized (personnel) unit environment; refined a new test battery by leveraging existing military selection tests and developing new tests that improve the Army's capability to select individuals with the highest potential to be successful aviators. FY07, conduct trend analysis of longitudinal research findings of the effects on unit cohesion of stabilizing unit personnel, provide lessons learned to Army G-1 and CG, Human Resources Command, from the first stabilized brigade from stand-up through post-deployment to inform early stages of implementing ARFORGEN; and validate new Selection Test Battery to determine the extent to which it predicts aviator performance in Initial Rotary Wing Training. FY08, will refine aviation Selection Test Battery and investigate its validity as a tool to assign aviators to specific aircraft. FY09, will refine and mature test batteries that improve the classification and assignment of aviators into specific aircraft for enhanced operational readiness.	2158	1796	1914	1927
Training Technology: FY06, demonstrated preliminary training products needed to support spin out of Future Force technological capabilities to the Current Force; evaluated alternative learning models and assessment methods to determine the effectiveness of single-user immersive training technologies; and refined prototype game-based system for training night vision skills and a preliminary system for creating simple game-based training for use in improving basic Soldier skills and knowledge. FY07, refine products and techniques that provide train-up tools for experiments on the spin out of Future Force technological capabilities to the Current Force; and refine learning models for single-user immersive training technologies and the potential assessment methods to determine effectiveness of these	2602	2644	2734	2822

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<b>3 - Advanced technology development</b>	<b>0603007A - Manpower, Personnel and Training Advanced Technolo</b>	<b>792</b>		
technologies. FY08, will refine and demonstrate methods for more rapid development of training support packages that will meet future technology and system spin out requirements; will validate assessment methods of single-user immersive training technologies; and will develop preliminary guidelines for designing effective single user, interactive, distributed training using game-engine-based immersion. FY09, will mature prototype training and training support packages that enable improved commander and staff performance in network-enabled environments; and will validate and refine assessment measures and metrics used in single-user immersive training technologies for their potential in determining multi-user training effectiveness.				
Leader Development Technology: FY06, refined web-based training modules for eight high-impact critical thinking skills for Army leaders, such as using mental imagery to evaluate plans and challenging one's own biases or stereotypes; and transitioned filmed case study vignettes for teaching leadership skills to several Active Army and Army Reserve schools and units, accompanied with train-the-trainer materials so they could effectively use the vignettes for pre-deployment training of junior leaders. FY07, implement critical thinking training modules and leader development case-study vignette approaches in select brigade combat teams and assess the impact on development of basic leadership skills (critical thinking, interpersonal, self-assessment) using protocols developed in applied research. FY08, develop lower cost techniques to train leaders to be adaptable, lead teams more effectively, and provide a wider range of strategies that improve the probability of mission success. In FY09, expand and refine low-cost tools for developing the techniques and strategies that leaders at all levels will need as the basic elements necessary for command in future scenarios.	1587	2028	2135	2122
Small Business Innovative Research/Small Business Technology Transfer Programs		111		
<b>Total</b>	<b>6347</b>	<b>6579</b>	<b>6783</b>	<b>6871</b>