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Exhibit R-2, PB 2010 Army RDT&E Budget Item Justification								DATE: May 2009		
APPROPRIATION/BUDGET ACTIVITY 2040 - Research, Development, Test & Evaluation, Army/BA 2 - Applied Research					R-1 ITEM NOMENCLATURE PE 0602785A Manpower/Personnel/Training 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	15.841	16.358	18.701						Continuing	Continuing
790: Personnel Performance & Training Technology	15.841	16.358	18.701						Continuing	Continuing
<u>A. Mission Description and Budget Item Justification</u> The objective of this program element (PE)/project is to conduct behavioral and social science applied research that will provide non-materiel solutions to ensure that Soldiers can adapt and excel and improve the Army's capability to fully leverage advances in networks, systems, and technologies as they evolve. This research provides the scientific basis to recruit, select, assign, promote, educate, train, and retain Soldiers and leaders that comprise a ready and relevant Landpower. The human science applied research conducted in this program element provides knowledge-products, methods, techniques, and tools that will enable the Army to: select Soldiers who are predicted to perform well in future jobs; assign Soldiers to Military Occupational Specialties (MOS) and jobs that better match their skills and abilities; retain an effective career force through improved strategies and behavioral incentives to influence Soldiers to stay in the Army for longer periods of time; accelerate the development of leader critical thinking and interpersonal skills through virtual practice so that junior leaders are more adaptable and prepared for uncertain, rapidly changing missions; develop innovative training strategies for complex battle command skills in network-enabled environments; and design training tools for dismounted squad leadership and team maneuver with ground Soldier systems technologies. Additional research is focused on the training techniques and procedures that will make it easier for trainers and training developers to rapidly respond to changes in mission or operational requirements and provide a more synergistic training and education process (e.g., automated and improved diagnostics, coaching and mentoring, performance measures, and feedback methods). This program leverages efforts and coordinates research with a number of other Laboratories and Research, Development, and Engineering Centers including, the Simulation and Training Technology Center (STTC), Natick Soldier Research, Development, and Engineering Center, Army Research Laboratory (ARL), and the Communications-Electronics Research, Development, and Engineering Center (CERDEC). This project is managed by the U.S. Army Research Institute for the Behavioral and Social Sciences (ARI); research in this PE is related to and fully coordinated with efforts funded in PE 0601102/project 74F and PE 0603007/project 792.  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 Research Institute for the Behavioral and Social Sciences (ARI) headquartered in Arlington, VA.										

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2040 - Research, Development, Test & Evaluation, Army/BA 2 - Applied Research		PE 0602785A Manpower/Personnel/Training Technology		
B. Program Change Summary (\$ in Millions)				
	FY 2008	FY 2009	FY 2010	FY 2011
Previous President's Budget	16.102	16.412	16.539	
Current BES/President's Budget	15.841	16.358	18.701	
Total Adjustments	-.261	-.054	2.162	
Congressional Program Reductions	.000	-.054		
Congressional Rescissions	.000	.000		
Total Congressional Increases	.000	.000		
Total Reprogrammings	.008	.000		
SBIR/STTR Transfer	-.269	.000		
Change Summary Explanation				
FY10 funding is increased for Human Dimension Applied Research.				

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<b>APPROPRIATION/BUDGET ACTIVITY</b> 2040 - Research, Development, Test & Evaluation, Army/BA 2 - Applied Research				<b>R-1 ITEM NOMENCLATURE</b> PE 0602785A Manpower/Personnel/Training Technology					<b>PROJECT NUMBER</b> 790	
<b>COST (\$ in Millions)</b>	<b>FY 2008 Actual</b>	<b>FY 2009 Estimate</b>	<b>FY 2010 Estimate</b>	<b>FY 2011 Estimate</b>	<b>FY 2012 Estimate</b>	<b>FY 2013 Estimate</b>	<b>FY 2014 Estimate</b>	<b>FY 2015 Estimate</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
790: Personnel Performance & Training Technology	15.841	16.358	18.701						Continuing	Continuing

**A. Mission Description and Budget Item Justification**

The objective of this program element (PE)/project is to conduct behavioral and social science applied research that will provide non-materiel solutions to ensure that Soldiers can adapt and excel and improve the Army's capability to fully leverage advances in networks, systems, and technologies as they evolve. This research provides the scientific basis to recruit, select, assign, promote, educate, train, and retain Soldiers and leaders that comprise a ready and relevant Landpower. The human science applied research conducted in this program element provides knowledge-products, methods, techniques, and tools that will enable the Army to: select Soldiers who are predicted to perform well in future jobs; assign Soldiers to Military Occupational Specialties (MOS) and jobs that better match their skills and abilities; retain an effective career force through improved strategies and behavioral incentives to influence Soldiers to stay in the Army for longer periods of time; accelerate the development of leader critical thinking and interpersonal skills through virtual practice so that junior leaders are more adaptable and prepared for uncertain, rapidly changing missions; develop innovative training strategies for complex battle command skills in network-enabled environments; and design training tools for dismounted squad leadership and team maneuver with ground Soldier systems technologies. Additional research is focused on the training techniques and procedures that will make it easier for trainers and training developers to rapidly respond to changes in mission or operational requirements and provide a more synergistic training and education process (e.g., automated and improved diagnostics, coaching and mentoring, performance measures, and feedback methods). This program leverages efforts and coordinates research with a number of other Laboratories and Research, Development, and Engineering Centers including, the Simulation and Training Technology Center (STTC), Natick Soldier Research, Development, and Engineering Center, Army Research Laboratory (ARL), and the Communications-Electronics Research, Development, and Engineering Center (CERDEC). This project is managed by the U.S. Army Research Institute for the Behavioral and Social Sciences (ARI); research in this PE is related to and fully coordinated with efforts funded in PE 0601102/project 74F and PE 0603007/project 792.

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

	<b>FY 2008</b>	<b>FY 2009</b>	<b>FY 2010</b>	<b>FY 2011</b>
Training: FY08: developed tools/techniques to support rapid training development for network-enabled battle command; developed/validated procedures to enhance battle command and dismounted Soldier digital skills; developed preliminary skill retention curves for establishing refresher training schedules to improve retention of critical digital skills; developed methods/procedures to assess the value of a net-enabled alternative to the traditional after action reviews (AAR);	7.097	7.149	8.411	

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<b>B. Accomplishments/Planned Program (\$ in Millions)</b>		<b>FY 2008</b>	<b>FY 2009</b>	<b>FY 2010</b>	<b>FY 2011</b>
<p>conducted assessment of massively multiplayer simulations (MMPS) training effectiveness in multi-national coalition warfare; developed alternative blended training approaches/techniques for selected Soldier skills for evaluation comparison; and developed preliminary models for alternative collective training systems incorporating various mixes of training aids, devices, simulators, and simulations (TADSS).</p> <p>FY09: leverage basic and applied research on intelligent agents and integrate into MMPS environment for command post and tactical scenarios; begin research to assess the effectiveness of alternative blended training approaches for teaching selected basic Soldier skills and improving retention of those skills; determine differences in AAR requirements across simulation domains; and identify components and develop alternative models for effectively training collective maneuver and aviation tasks.</p> <p>FY10: will develop tools for unit-developed individual/small group training based on near-real time knowledge elicitation; will conduct field assessments of MMPS; will analyze methods for improving automated, diagnostic, and prescriptive tutoring systems to tailor training experiences; and will investigate methods to maintain relevance of unit and institutional training.</p> <p>FY11: will research innovative training methods and technology based on learning sciences; will refine tools/methods for rapid training development; will design/develop methods of diagnostic eval of individual and unit performance</p>					
Small Business Innovation Research/Small Business Technology Transfer Programs		.000	.262	.000	
<p>Personnel:</p> <p>FY08: conducted studies to assess effectiveness of potential retention intervention strategies by field testing with Soldiers in operational settings; revised model and established empirical strength of strategies to impact Soldier and Officer behavior based on findings from the field tests and extent the strategies actually relate to retention decisions; for selected MOS, developed improved job performance metrics as criteria for testing various instruments designed to assess the Knowledge, Skills, and Attributes (KSAs) needed for effective job performance; clustered KSAs using subject matter experts; and validated test batteries using Soldiers in operational units and computational methods.</p> <p>FY09: further validate behavioral retention strategies and develop guidelines to implement strategies and track effects on actual retention; and collect job performance data and supervisor's performance assessments to empirically test KSA instruments/clusters for strength in predicting actual job performance and longer-term Soldier success.</p> <p>FY10: will initiate 2-year longitudinal research to validate non-cognitive measures and the extent to which they predict Soldier job performance and overall success in the Army; and will investigate the use of non-cognitive measures for predicting attrition in precommissioning.</p>		4.906	5.071	5.805	

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B. Accomplishments/Planned Program (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY 2011
FY11: will continue longitudinal research to validate non-cognitive measures and the extent to which they predict Soldier job performance and overall success in the Army.					
Leader Development: FY08: collected and analyzed data to assess the impact of leader skills and knowledge on performance in joint, interagency, and multinational (JIM) environments; designed training tools to enhance leader effectiveness in multi-team systems. Designed training methods to enhance capability of leaders to take a multicultural perspective for mission success; and started research to identify potential influence techniques leaders can use to be more effective in fighting Global War on Terror (GWOT). FY09: continue investigation of influence techniques and strategies that show potential to be most effective in GWOT scenarios, and that will improve leader capability for rapid team building. Further investigate methods and tools designed to improve training and collaboration in multi-team systems in complex and networked environments; develop a framework for investigating social and communication networks in complex organizations; and expand framework of human system automation reliance to team-system reliance. FY10: will assess multilevel influence strategies and the extent these strategies improve adaptive leadership and negotiation skills and techniques. Will develop team training modules for rapid team building and team adaptability; will investigate training strategies and design guidelines to promote appropriate trust and automation reliance in networked human system teams. FY11: will refine techniques and strategies for developing the influence skills of leaders; and will develop and refine model of multi-team system performance characteristics and effectiveness.		3.838	3.876	4.485	
Total		15.841	16.358	18.701	
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.					

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