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Exhibit R-2, PB 2011 Army RDT&E Budget Item Justification									DATE: February 2010		
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 2009 Actual	FY 2010 Estimate	Base FY 2011 Estimate	OCO FY 2011 Estimate	Total FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	16.096	16.614	22.198	0.000	22.198	19.022	19.381	19.409	19.708	0	154.626
790: Personnel Performance & Training Technology	16.096	16.614	22.198	0.000	22.198	19.022	19.381	19.409	19.708	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 provides 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 capability. 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 training techniques and procedures that 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), Army Research Laboratory - Human Research and Engineering Directorate (ARL-HRED), and the Communications-Electronics Research, Development, and Engineering Center (CERDEC). Research in this PE is related to and fully coordinated with efforts funded in 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.This project is managed by the U.S. Army Research Institute for the Behavioral and Social Sciences (ARI), Arlington, VA.											

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2040: Research, Development, Test & Evaluation, Army		PE 0602785A: Manpower/Personnel/Training Technology			
BA 2: Applied Research					
B. Program Change Summary (\$ in Millions)					
	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Previous President's Budget	16.358	18.701	18.853	0.000	18.853
Current President's Budget	16.096	16.614	22.198	0.000	22.198
Total Adjustments	-0.262	-2.087	3.345	0.000	3.345
• Congressional General Reductions		-2.087			
• Congressional Directed Reductions					
• Congressional Rescissions		0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers					
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-0.262	0.000			
• Adjustments to Budget Years	0.000	0.000	3.345	0.000	3.345
Change Summary Explanation					
FY10 congressional reduction for premature growth. FY11 increases for Large Scale Distributive Training and Social/Cultural Behavior Research.					

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<b>APPROPRIATION/BUDGET ACTIVITY</b> 2040: <i>Research, Development, Test &amp; Evaluation, Army</i> BA 2: <i>Applied Research</i>				<b>R-1 ITEM NOMENCLATURE</b> PE 0602785A: <i>Manpower/Personnel/Training Technology</i>				<b>PROJECT</b> 790: <i>Personnel Performance &amp; Training Technology</i>			
<b>COST (\$ in Millions)</b>	<b>FY 2009 Actual</b>	<b>FY 2010 Estimate</b>	<b>Base FY 2011 Estimate</b>	<b>OCO FY 2011 Estimate</b>	<b>Total 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: <i>Personnel Performance &amp; Training Technology</i>	16.096	16.614	22.198	0.000	22.198	19.022	19.381	19.409	19.708	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 provides 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 capability. 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 training techniques and procedures that 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), Army Research Laboratory - Human Research and Engineering Directorate (ARL-HRED), and the Communications-Electronics Research, Development, and Engineering Center (CERDEC). Research in this PE is related to and fully coordinated with efforts funded in 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. This project is managed by the U.S. Army Research Institute for the Behavioral and Social Sciences (ARI), Arlington, VA.

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

	<b>FY 2009</b>	<b>FY 2010</b>	<b>Base FY 2011</b>	<b>OCO FY 2011</b>	<b>Total FY 2011</b>
Program #1  Personnel: In FY09, further validated behavioral retention strategies and developed guidelines to implement strategies and track effects on actual retention, and collected job performance data and supervisor's performance assessments to empirically test knowledge, skills, and abilities (KSA) instruments/ clusters for strength in	5.071	4.852	6.295	0.000	6.295

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B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	Base FY 2011	OCO FY 2011	Total FY 2011
predicting actual job performance and longer-term Soldier success. In FY10, initiate research to validate temperament/personality (i.e., non-cognitive) measures to better predict Soldier performance in initial training; and investigate the use of non-cognitive measures for predicting attrition (i.e., dropping out) in pre-commissioning. The Army's current selection measures primarily focus on a candidate's cognitive (e.g., technical and analytical) ability which does not predict attrition, discipline, and motivation. In FY11, will continue longitudinal (i.e., multiyear) research to validate non-cognitive measures and the extent to which they predict a Soldier's on-going job performance and continued success in the Army.  FY 2009 Accomplishments: FY 2009  FY 2010 Plans: FY 2010  Base FY 2011 Plans: FY 2011 Base  OCO FY 2011 Plans: FY 2011 OCO						
Program #2  Training: In FY09, leveraged basic and applied research on intelligent agents and integrated into role-playing distributed simulations for training with command post and tactical scenarios; began research to assess the effectiveness of alternative blended training approaches for teaching selected basic Soldier skills and improving retention of those skills; determined differences in after action review (AAR) requirements across simulation domains; identified components and developed alternative models for effectively training collective maneuver and aviation tasks. In FY10, develop tools for unit-developed individual/small group training based on near-real time knowledge elicitation; conduct field assessments of role-playing distributed simulations; analyze methods for		7.149	7.915	11.229	0.000	11.229

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B. Accomplishments/Planned Program (\$ in Millions)					
	FY 2009	FY 2010	Base FY 2011	OCO FY 2011	Total FY 2011
improving automated, diagnostic, and prescriptive tutoring systems to tailor training experiences; and investigate methods to maintain relevance of unit and institutional training. In FY11, will research innovative training methods and technology based on learning sciences; will refine tools/methods for rapid training development to increase relevancy and timeliness of training; will design/develop methods of diagnostic evaluation of individual and unit performance; will develop processes to integrate live and simulated training methods in emerging large-scale distributive environments that may include coalition forces.  FY 2009 Accomplishments: FY 2009  FY 2010 Plans: FY 2010  Base FY 2011 Plans: FY 2011 Base  OCO FY 2011 Plans: FY 2011 OCO					
Program #3  Leader Development: In FY09, continued investigation of influence techniques and strategies that show potential to be most effective in other contingency operations scenarios, and that will improve leader capability for rapid team building. Further investigated methods and tools designed to improve training and collaboration in multi-team systems in complex and networked environments; developed a framework for investigating social and communication networks in complex organizations; expanded framework of human system automation reliance to team-system reliance. In FY10, assess multilevel influence strategies and the extent these strategies improve adaptive leadership and negotiation skills and techniques; develop team training modules for rapid team building and team adaptability; investigate training strategies and design guidelines to promote appropriate	3.876	3.636	4.674	0.000	4.674

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B. Accomplishments/Planned Program (\$ in Millions)					
	FY 2009	FY 2010	Base FY 2011	OCO FY 2011	Total FY 2011
trust and automation reliance in networked human system teams. In FY11, will refine techniques and strategies for developing the influence skills of leaders, with particular focus on military advisory training (i.e., training those who are training international partners); will develop and refine model of multi-team system performance characteristics and effectiveness for joint, interagency, intergovernmental, and multinational (JIIM) teams; develop measures of socio-cultural capabilities for operational environments.  FY 2009 Accomplishments: FY 2009  FY 2010 Plans: FY 2010  Base FY 2011 Plans: FY 2011 Base  OCO FY 2011 Plans: FY 2011 OCO					
Program #4  Small Business Innovation Research/Small Business Technology Transfer Programs  FY 2009 Accomplishments: FY 2009  FY 2010 Plans: FY 2010	0.000	0.211	0.000	0.000	0.000

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<b><u>B. Accomplishments/Planned Program (\$ in Millions)</u></b>						
		<b>FY 2009</b>	<b>FY 2010</b>	<b>Base FY 2011</b>	<b>OCO FY 2011</b>	<b>Total FY 2011</b>
<i>Base FY 2011 Plans:</i> FY 2011 Base						
<i>OCO FY 2011 Plans:</i> FY 2011 OCO						
Accomplishments/Planned Programs Subtotals		16.096	16.614	22.198	0.000	22.198
<b><u>C. Other Program Funding Summary (\$ in Millions)</u></b>						
N/A						
<b><u>D. Acquisition Strategy</u></b>						
N/A						
<b><u>E. Performance Metrics</u></b>						
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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