Exhibit R-2, RDT&E Budget Item Justification: PB 2019 Army											Date: February 2018	

Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 2: *Applied Research*					R-1 Program Element (Number/Name) PE 0602785A *I Manpower/Personnel/Training Technology*							

COST ($ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
Total Program Element	-	23.475	20.216	21.862	-	21.862	23.651	24.176	24.261	24.659	0.000	162.300
790: *Personnel Performance & Training Technology*	-	23.475	20.216	21.862	-	21.862	23.651	24.176	24.261	24.659	0.000	162.300

A. Mission Description and Budget Item Justification

This Program Element (PE) conducts applied behavioral and social science research to enhance the Soldier Lifecycle (e.g., selection, assignment, training, leader development) and human relations (e.g., unit cohesion). This PE develops new personnel measures and methods that more fully assess potential and predict performance, behavior, attitudes, and resilience. These technologies also provide innovative and effective Talent Management methods to optimize individual and team performance to ensure the Army can meet mission requirements in uncertain and complex environments. This PE develops new performance measures and metrics for individuals and units, designs innovative training methods, and conducts scientific assessments to inform Human Capital policy and programs. Research in this PE will result in effective non-materiel solutions to help the Army adjust to changes in force size and structure, a variety of mission demands and contexts, challenges in human relations, and budgetary constraints.

Efforts in this PE support the Army Science and Technology Soldier portfolio.

The cited work is consistent with the Assistant Secretary of Defense for Research and Engineering Science and Technology priority focus areas and the Army Human Capital Strategy.

Work in this PE is performed by the U.S. Army Research Institute (ARI) for the Behavioral and Social Sciences in Ft. Belvoir, VA.

B. Program Change Summary ($ in Millions)

	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Previous President's Budget	26.045	20.216	21.902	-	21.902
Current President's Budget	23.475	20.216	21.862	-	21.862
Total Adjustments	-2.570	0.000	-0.040	-	-0.040
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-2.563	-			
• Adjustments to Budget Years	-	-	-0.040	-	-0.040
• FFRDC	-0.007	-	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2019 Army										Date: February 2018	

Appropriation/Budget Activity 2040 I 2				R-1 Program Element (Number/Name) PE 0602785A I *Manpower/Personnel/* *Training Technology*						Project (Number/Name) 790 I *Personnel Performance & Training* *Technology*	

COST ($ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
790: *Personnel Performance & Training Technology*	-	23.475	20.216	21.862	-	21.862	23.651	24.176	24.261	24.659	0.000	162.300

A. Mission Description and Budget Item Justification

This Project conducts applied behavioral and social science research to enhance the Soldier Lifecycle (e.g., selection, assignment, training, leader development) and human relations (e.g., unit cohesion). This Project develops new personnel measures and methods that more fully assess potential and predict performance, behavior, attitudes, and resilience. These technologies also provide innovative and effective Talent Management methods to optimize individual and team performance to ensure the Army can meet mission requirements in uncertain and complex environments. This Project develops new performance measures and metrics for individuals and units, designs innovative training methods, and conducts scientific assessments to inform Human Capital policy and programs. Research in this Project will result in effective non-materiel solutions to help the Army adjust to changes in force size and structure, a variety of mission demands and contexts, challenges in human relations, and budgetary constraints.

Efforts in this Project support the Army Science and Technology (S&T) Soldier portfolio.

The cited work is consistent with the S&T priorities of the Army Chief of Staff, Assistant Secretary of Defense for Research and Engineering Science and Technology priority focus areas and the Army Human Capital Strategy.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2017	FY 2018	FY 2019
Title: Personnel Measures and Assessments	11.742	9.000	12.568
Description: Conduct applied research that provides the Army with improved prediction and modeling of potential performance, behaviors, attitudes, and resilience of Soldiers, as well as an improved ability to recruit and sustain an effective career force. *FY 2018 Plans:* Conduct research on developing integrated assessments (i.e., comprehensive (vs. single) personnel assessments) for predicting high-potential Soldiers and high-risk behavior (i.e., integrated measures collected across the Soldier Lifecycle that feeds holistic assessments and predictive models of behaviors, performance, and outcomes). *FY 2019 Plans:* Will conduct research to develop a vocational interest inventory for increased prediction and selection of assignment and performance within select critical Military Occupational Specialties (e.g. cyberwarfare); conduct research for the application of non-cognitive measures to inform branching choices for cadets to support sustainment of professional military careers and reduce			

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Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602785A / *Manpower/Personnel/ Training Technology*	Project (Number/Name) 790 / *Personnel Performance & Training Technology*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2017	FY 2018	FY 2019
Soldier attrition costs; conduct research in Big Data applications to develop automatically generated test items for personnel assessment. *FY 2018 to FY 2019 Increase/Decrease Statement:* Increased funding in Personnel Measures and Assessment to accelerate research in applying Big Data approaches to personnel assessment, performance modeling, and career modeling.			
Title: Personnel Readiness and Performance *Description:* This effort funds research to provide the Army with effective leader assessment, development, and training methods to measure, develop, and sustain individual/leader competencies and performance across the Soldier lifecycle. *FY 2018 Plans:* Conduct research to develop holistic training methods to help officers and non-commissioned officers (NCOs) enhance and sustain unit resilience; conduct research to create integrated assessments of individual Soldier and unit readiness by researching holistic training methods that combine traditional and lecture-based training with integrative learning methods and training techniques that allow for connections among concepts/experiences so that information/skills can be applied to novel and complex issues or challenges). *FY 2019 Plans:* Will conduct research to develop methods for assessing and developing complex leader competencies to perform effectively in multi-domain operations (e.g., systems and strategic thinking). *FY 2018 to FY 2019 Increase/Decrease Statement:* Decreased funding to support the acceleration of Personnel Measures and Assessments. The decrease in funding delays research in creating methods to accelerate expertise development.	5.668	7.506	3.894
Title: Unit Performance and Cohesion *Description:* Previously titled ?Unit Readiness,? this effort conducts applied research to ensure cohesive, high performing teams for future operational environments. This effort develops methods to optimize team composition to enhance unit performance, methods to rapidly build and sustain team cohesion, and assessments of unit performance to shape collective training and inform unit readiness indicators. *FY 2018 Plans:* Conduct research to develop methods and tools that enable Army leaders to build improved morale, cohesion, and readiness in small units; conduct research to identify and measure command climate factors that predict overall unit readiness. *FY 2019 Plans:*	6.065	3.710	5.400

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2017	FY 2018	FY 2019
Will conduct research to develop empirically-validated climate assessments based on objective behaviors (e.g., behavior checklists, unobtrusive measures) that efficiently and accurately assess key aspects of command climate; conduct research to develop methods to assess cohesion in non-traditional teams (e.g., dispersed, diverse, new tasks/missions). **FY 2018 to FY 2019 Increase/Decrease Statement:** Increased funding will be applied to research in developing methods to assess cohesion in non-traditional teams.			
Accomplishments/Planned Programs Subtotals	23.475	20.216	21.862

C. Other Program Funding Summary ($ in Millions)
 N/A
Remarks

D. Acquisition Strategy
 N/A

E. Performance Metrics
 N/A