Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Army											Date: March 2014	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 2: *Applied Research*					R-1 Program Element (Number/Name) PE 0602786A / *Warfighter Technology*							
COST ($ in Millions)	**Prior Years**	**FY 2013**	**FY 2014**	**FY 2015 Base**	**FY 2015 OCO #**	**FY 2015 Total**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**Cost To Complete**	**Total Cost**
Total Program Element	-	53.206	31.529	25.751	-	25.751	31.241	31.831	33.534	35.544	-	-
283: *Airdrop Adv Tech*	-	2.133	2.363	2.392	-	2.392	3.102	3.448	2.822	2.786	-	-
E01: *Warfighter Technology Initiatives (CA)*	-	25.435	-	-	-	-	-	-	-	-	-	-
H98: *Clothing & Equipm Tech*	-	18.499	21.790	18.991	-	18.991	23.041	20.942	22.419	24.496	-	-
H99: *Joint Service Combat Feeding Technology*	-	5.677	5.799	3.029	-	3.029	3.327	4.941	5.043	5.087	-	-
VT4: *Expeditionary Mobile Base Camp Technology*	-	1.462	1.577	1.339	-	1.339	1.771	2.500	3.250	3.175	-	-

The FY 2015 OCO Request will be submitted at a later date.

Note

FY13 Adjustments attributed to increase for Congressional Add funding (26.0 million); decreases for General Congressional Reductions; (-94 thousand); SBIR/STTR transfers (-450 thousand); and Sequestration reductions (-531 thousand)
FY15 funding realigned to support higher Army priorities.

A. Mission Description and Budget Item Justification

This program element (PE) investigates and develops integrated technologies which improve Soldier and Small Combat Unit survivability, sustainability, mobility, combat effectiveness, field quality of life and assess impact of each on Soldier performance. This PE supports the design, development, and improvement of components used for air delivery of personnel and cargo (project 283), combat clothing and personal equipment including protective equipment such as personal armor, helmets and eyewear (project H98), combat rations and combat feeding equipment (project H99) and expeditionary base camps (VT4). This PE supports the investigation and advancement of critical knowledge and understanding of Soldier physical and cognitive performance. Project E01 funds congressional special interest items. The projects in this PE adhere to Tri-Service Agreements on clothing, textiles, and food with coordination provided through the Cross Service Warfighter Equipment Board, the Soldier and Squad Integrated Concepts Development Team, and the DoD Combat Feeding Research and Engineering Board.

Efforts in this program element support the Army science and technology Soldier portfolio.

Work in this PE is related to, and fully coordinated with, PE 0602105A (Materials Technology), PE 0602618A (Ballistics Technology), PE 0603001A (Warfighter Advanced Technology), PE 0602787A (Medical Technology Initiatives), 0602716A (Human Factors Engineering Technology) and PE 0602784A (Military Engineering Technology).

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Army	Date: March 2014
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 2: *Applied Research*	**R-1 Program Element (Number/Name)** PE 0602786A / *Warfighter Technology*

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 is led, performed, and/or managed by the Natick Soldier Research, Development, and Engineering Center (NSRDEC), Natick, MA.

B. Program Change Summary ($ in Millions)	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	28.281	31.546	32.171	-	32.171
Current President's Budget	53.206	31.529	25.751	-	25.751
Total Adjustments	24.925	-0.017	-6.420	-	-6.420
• Congressional General Reductions	-0.094	-0.017			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	26.000	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.450	-			
• Adjustments to Budget Years	-	-	-6.420	-	-6.420
• Sequestration	-0.531	-	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2015 Army											Date: March 2014	
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602786A / *Warfighter Technology*				Project (Number/Name) 283 / *Airdrop Adv Tech*			
COST ($ in Millions)	**Prior Years**	**FY 2013**	**FY 2014**	**FY 2015 Base**	**FY 2015 OCO #**	**FY 2015 Total**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**Cost To Complete**	**Total Cost**
283: *Airdrop Adv Tech*	-	2.133	2.363	2.392	-	2.392	3.102	3.448	2.822	2.786	-	-

The FY 2015 OCO Request will be submitted at a later date.

A. Mission Description and Budget Item Justification

This project funds research, investigation and evaluation of component technologies to enhance cargo and personnel airdrop capabilities for global precision delivery, rapid deployment, and insertion for force projection into hostile regions. Areas of emphasis include parachute technologies, parachutist injury reduction, precision offset aerial delivery, soft landing technologies, and airdrop simulation.

Efforts in this program element support the Army science and technology Soldier portfolio.

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 fully coordinated with PE 0603001A/Project 242 (Warfighter Advanced Technology).

Work in this project is led, performed and/or managed by the US Army Natick Soldier Research, Development and Engineering Center (NSRDEC), Natick, MA. n

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: Airdrop/Aerial Delivery Research and Technology	2.133	2.363	2.392
Description: Beginning in FY13, this effort was renamed from Precision Aerial Delivery Enhancements to Airdrop/Aerial Delivery Research and Technology. The effort merged with the Enabling Airdrop Research and Technologies to provide complementary investigations of technologies for enhanced payload extraction and subsequent gliding capabilities, improve delivery accuracy of varying load weights, and investigate technologies for improved insertion safety and security for airborne personnel.			
FY 2013 Accomplishments: Evaluated decelerator design refinements and application of advanced sensors to decrease serious injuries and fatalities during mass tactical aerial insertion; conducted preliminary investigation of parafoil shape while in-flight to increase performance parameters.			
FY 2014 Plans: Investigate navigation technologies in GPS denied areas to reduce Soldier borne equipment load by increasing resupply to austere operational environments; building on results from FY13, investigate the application of e-textiles and embedded miniature sensors in parachute systems to improve aerial decelerator performance characteristics, increase operator safety (increased			

Exhibit R-2A, RDT&E Project Justification: PB 2015 Army		Date: March 2014
Appropriation/Budget Activity 2040 / 2	**R-1 Program Element (Number/Name)** PE 0602786A / *Warfighter Technology*	**Project (Number/Name)** 283 / *Airdrop Adv Tech*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
control and glide enhancement), decrease system costs, and reduce load burden for Soldiers engaged in airborne operations by lowering the retrograde/retrieval weight and volume of current equipment. ***FY 2015 Plans:*** Will investigate wind detection methods/methodologies for precision guidance, navigation and control; develop static line reserve parachute automatic activation technologies for future incorporation into personnel parachute systems to increase operator safety; design system to increase safety of high altitude and military free fall parachutists through risk reduction of collision or near-miss events between automated cargo delivery systems; investigate methods/methodologies for enhancing autonomous glide and precision delivery landing accuracy.			
Accomplishments/Planned Programs Subtotals	2.133	2.363	2.392

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2015 Army												Date: March 2014
Appropriation/Budget Activity 2040 / 2					R-1 Program Element (Number/Name) PE 0602786A / *Warfighter Technology*				Project (Number/Name) E01 / *Warfighter Technology Initiatives (CA)*			
COST ($ in Millions)	**Prior Years**	**FY 2013**	**FY 2014**	**FY 2015 Base**	**FY 2015 OCO #**	**FY 2015 Total**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**Cost To Complete**	**Total Cost**
E01: *Warfighter Technology Initiatives (CA)*	-	25.435	-	-	-	-	-	-	-	-	-	-

The FY 2015 OCO Request will be submitted at a later date.

A. Mission Description and Budget Item Justification

Congressional Interest Item funding for Warfighter Technology Applied Research.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: Power Generation Research ***Description:*** This is a Congressional Interest Item. ***FY 2013 Accomplishments:*** Conduct research on power generation technologies.	12.435	-	-
Title: Clothing and Equipment Technology ***Description:*** This is a Congressional Interest Item ***FY 2013 Accomplishments:*** Conduct research on Fibers and Polymers related to Individual Clothing and Textiles and Individual Soldier Protection technologies.	13.000	-	-
Accomplishments/Planned Programs Subtotals	25.435	-	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2015 Army			Date: March 2014
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602786A / *Warfighter Technology*	Project (Number/Name) H98 / *Clothing & Equipm Tech*	

COST ($ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
H98: *Clothing & Equipm Tech*	-	18.499	21.790	18.991	-	18.991	23.041	20.942	22.419	24.496	-	-

The FY 2015 OCO Request will be submitted at a later date.

A. Mission Description and Budget Item Justification

This project investigates and evaluates components and materials focused on enhancing Soldier survivability from combat threats (flame and thermal threats, blast and ballistic threats, and lasers) and environmental threats (e.g., cold, heat, wet) to increase operational effectiveness while decreasing the Soldier's physical and cognitive burden. Included are technologies and novel materials related to personnel armor, helmets, hearing protection, and eyewear. In addition, this project supports the development and refinement of essential analytic tools needed to predict and/or assess the combat effectiveness of next generation Soldier systems with a focus on human science investigation to identify and develop methods to assess human responses to sensory, physical, cognitive, and affective stimuli and stressors.

Efforts in this program element support the Army science and technology Soldier portfolio.

Work in this PE is fully coordinated with PE 0602105A (Materials Technology), PE 0602618A (Ballistics Technology), PE 0603001A (Warfighter Advanced Technology), PE 0602787A (Medical Technology Initiatives) and PE 0602716A (Human Factors Engineering Technology).

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

Work in this project is performed by the Natick Soldier Research, Development, and Engineering Center (NSRDEC), Natick, MA.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: Soldier Blast and Ballistic Protection	6.458	4.884	4.110
Description: Beginning in FY13, this effort was renamed from Ballistic and Blast Protection for the Individual Soldier to Soldier Blast and Ballistic Protection. This effort focuses on material modeling, novel materials, and component designs to protect Soldiers against ballistic and blast threats. This effort utilizes a cross-disciplinary, human-centric approach to develop technologies which optimize tradeoffs in ballistic and blast protective component design. This effort is fully coordinated with PE 0602787A/Project FH2, Project VB3, Project 874 (Medical Technology), PE 0602618A/H80, PE0602105A/Project H84, and PE0602716A/Project H70 (ARL) and PE 0603001/Project J50. This effort supports Force Protection Soldier & Small Unit capability research and addresses the Army top challenge of easing overburdened Soldiers in small units.			
FY 2013 Accomplishments: Investigated and assessed specific material parameters as well as novel assembling approaches for lightweight shelter and personal protective system applications; furthered design methodologies, processes, tests methods, and analytical tools that			

Exhibit R-2A, RDT&E Project Justification: PB 2015 Army		Date: March 2014
Appropriation/Budget Activity 2040 / 2	**R-1 Program Element (Number/Name)** PE 0602786A / *Warfighter Technology*	**Project (Number/Name)** H98 / *Clothing & Equipm Tech*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
optimized ballistic and blast protective equipment for human performance (mobility and comfort) and survivability; investigated improved methods of assessing behind-armor blunt trauma. ***FY 2014 Plans:*** Develop and evaluate ballistic and blast component concepts that fully delineate weight, performance, and mobility trade space using modeling and casualty assessment tools as well as ergonomic and ballistic test methods; investigate new ballistic fiber and composite material to increase strength and toughness while decreasing component weight; develop relevant criteria and advance concepts for assessing behind armor blunt trauma; investigate and apply advanced techniques for multiscale analysis of factors that affect ballistic performance (yarn deniers, surface treatments, material configuration, fiber properties) to develop predictive model(s) for assessing armor systems; develop methods for assessing environmental stability and durability of high performance fibers and composites that enhance Soldier protection in various operational environments. ***FY 2015 Plans:*** Will develop predictive models for estimation of performance of ballistic fibers after exposure to adverse operational and storage environments; investigate laboratory methods of simulating and measuring forces and accelerations induced by blast overpressure on soldiers wearing headborne equipment; design and evaluate reduced weight head and torso protection concepts for small arms and fragment protection using novel materials and assembling approaches; continue development of advanced modeling, simulation, and assessment tools that define ballistic and blast survivability/mobility/lethality trade space; develop a standardized methodology to assess anthropometric design (fit, area of coverage and comfort) impacts on body armor system performance.			
Title: Soldier Vision Protection and Enhancement ***Description:*** This effort focuses on technologies which provide eye protection from battlefield threats. This effort supports Force Protection Soldier & Small Unit capability research and addresses the Army top challenge of easing overburdened Soldiers in Small Units. ***FY 2013 Accomplishments:*** Matured agile laser eye protection components for variable transmission and anti-fog capabilities; determined feasibility of adding these capabilities into a ballistic fragmentation protective lens design for improved Soldier vision protection. ***FY 2014 Plans:*** Investigate and design a vision enhancement lens concept that manipulates the visible electromagnetic spectrum to improve dismounted Soldier's ability to identify combatants and increases the multi-protective capability (e.g. ballistic, laser, environmental) of the baseline eyewear; conduct human research studies to explore how vision protection technologies enhance or detract from Soldier situational awareness. ***FY 2015 Plans:***	2.546	3.395	3.511

Exhibit R-2A, RDT&E Project Justification: PB 2015 Army		Date: March 2014
Appropriation/Budget Activity 2040 / 2	**R-1 Program Element (Number/Name)** PE 0602786A / *Warfighter Technology*	**Project (Number/Name)** H98 / *Clothing & Equipm Tech*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Will mature active and passive technologies for providing improved eye protection against ballistic and laser threats; demonstrate proof of concept for active variable transmission lenses for enhanced situational awareness in rapidly changing light level conditions; develop novel spray coating process for producing optical quality films; investigate ballistic and optical properties of novel transparent composite materials and nanomaterials that can provide >50% increase in ballistic protection compared to current materials; investigate and determine the individual locomotion and cognitive effects of rapid-transition variable transmission lenses and the trade-offs between optical distortion and the extent of eye protection against laser, flash and ballistic fragmentation.			
Title: Measurement, Prediction and Improvement of Soldier Performance	4.111	5.585	4.174
Description: Beginning in FY13, Soldier and Small Unit Modeling and Analysis efforts were combined with this effort to provide a more comprehensive focus on human science methods (psychological, anthropometric, and psychophysical) and biomechanical models to assess human responses to sensory, physical, cognitive and affective stimuli and stressors to support human systems design concepts for Soldier equipment and to enhance Soldier and Small Unit physical and cognitive performance. This work is collaborative with the Army Research Laboratory PE 0602716A/H70 and the Medical Research and Materiel Command PE 0602787A. This effort supports Force Protection Soldier & Small Unit capability research and addresses the Army top challenge of easing overburdened Soldiers in Small Units. ***FY 2013 Accomplishments:*** Evaluated mitigation techniques that support spatial memory and navigation such as adaptive display technologies, resilience training, and nutritional intervention; investigated the interactive effects of individual differences (e.g., spatial cognitive performance and working memory capacity) and mission context on Soldier cognitive processes; conducted operational human performance effectiveness modeling and simulation analyses for optimal body armor/load configurations for individual Soldiers and Small Units. ***FY 2014 Plans:*** Validate mitigation techniques for enhancing human spatial memory and navigation using adaptive display technologies and nutritional intervention; investigate new mitigation techniques such as enhanced vision technologies and biomechanical, physiological, as well as neurophysiological markers of physical and cognitive fatigue; incorporate data on the effects of individual differences on cognitive state monitoring technologies and mitigation techniques (e.g., measure stress and panic responses through eye movements, inner ear temperature, etc.); will integrate human performance data into performance models to enhance mission performance assessment and analysis for the Small Unit; will design and validate statistical human two dimensional and three dimensional models using updated Soldier anthropometric data to optimize the design, fit and sizing of Soldier clothing and individual equipment; will advance methods for assessing encumbered anthropometry to enable improved design of manned platforms. Investigate concepts for improved biofidelic human models. ***FY 2015 Plans:***			

Exhibit R-2A, RDT&E Project Justification: PB 2015 Army		Date: March 2014
Appropriation/Budget Activity 2040 / 2	**R-1 Program Element (Number/Name)** PE 0602786A / *Warfighter Technology*	**Project (Number/Name)** H98 / *Clothing & Equipm Tech*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Will lead the concept development for a suite of human systems performance measurements, approaches, and field analytical tools to support the human systems component of a Soldier Systems Engineering Architecture; develop and evaluate metrics and optimization strategies for human physical, psychological, cognitive, and emotional performance parameters as inputs for modeling and analysis of Soldier and Small Unit combat performance; conduct trade analyses between mobility, lethality, survivability, and mission performance; investigate improved anthropometric approaches for developing improved fidelity models that address vital organ size and location, fit and area of coverage to inform engineering designs for various Soldier equipment; investigate potential for human performance applications through emerging fields such as non-medical synthetic biology.			
Title: Advancements in Fibers, Textiles and Materials for Soldier Protection	5.384	7.926	7.196
Description: Beginning in FY13, this effort is renamed from Multifunctional Fibers, Textiles and Material for the Soldier to Advancements in Fibers, Textiles and Materials for Soldier Protection. This effort focuses on technologies that aid in the design and evaluation of multifunctional protective materials and concealment concepts for Soldier clothing, equipment and shelters. In FY13 and FY14, this effort supports Technology Enabled Capability Demonstration 1.b, Force Protection Soldier & Small Unit. ***FY 2013 Accomplishments:*** Evaluated properties of novel bi- and tri-component fibers for Electro Magnetic Imaging (EMI) shielding, friend/foe identification and signature management; investigated environmentally benign coatings, surface treatments and other novel deposition techniques for flame and thermal protection; investigated the performance of non-traditional textiles to protect against temperature extremes, microbes, and insects threats to increase protection capabilities of Soldier clothing, individual equipment, and shelters. ***FY 2014 Plans:*** Investigate cost effective textile-embedded power generation for integration of sensors/detectors into Soldier clothing to reduce power needs and Soldier carried weight; investigate metrics, methods, and treatments for multifunctional materials to enhance Soldier survivability and mission effectiveness by reducing probability of detection by battlefield sensors; validate novel flame resistant (FR) test methodologies for FR materials that more accurately measure thermal material properties and provide trade-off data for developing Soldier clothing; conduct experiments on multi-functional protective textiles and membranes to determine response to environmental extremes and microbial/insect threats to develop increased protection capabilities for emerging pathogenic threats to Soldiers and Small Units. ***FY 2015 Plans:*** Will mature novel textile and fiber-based technologies to provide protection against multiple environmental threats to Soldiers and Small Units; investigate use of electrotextiles for providing protection to personnel and equipment against electromagnetic threats; investigate methods of incorporating anti-pathogenic functionality into textiles; investigate properties and methods of making novel multi-component fibers, nanofibers, and finished fabrics for use as Soldier protection against cuts/abrasion, cold weather environments, and pathogens; perform experimental proof of concept for thermal signature reduction technology concepts; develop predictive models for thermal signature performance of emerging materials; mature technologies and methods to improve			

Exhibit R-2A, RDT&E Project Justification: PB 2015 Army		Date: March 2014
Appropriation/Budget Activity 2040 / 2	**R-1 Program Element (Number/Name)** PE 0602786A / *Warfighter Technology*	**Project (Number/Name)** H98 / *Clothing & Equipm Tech*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
visual signature management/camouflage; investigate inherently flame resistant fiber and novel coating technologies that provide significant performance improvements over Flame Resistant-Army Combat Uniform (FR-ACU) fabrics; investigate alternative fiber technologies for durable, wearable combat identification systems that enable improved visibility to friendly forces; characterize novel thermoelectric textile materials for wearable power generation and personal cooling applications.			
Accomplishments/Planned Programs Subtotals	18.499	21.790	18.991

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2015 Army			Date: March 2014
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602786A / *Warfighter Technology*	Project (Number/Name) H99 / *Joint Service Combat Feeding Technology*	

COST ($ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
H99: *Joint Service Combat Feeding Technology*	-	5.677	5.799	3.029	-	3.029	3.327	4.941	5.043	5.087	-	-

The FY 2015 OCO Request will be submitted at a later date.

A. Mission Description and Budget Item Justification

This project investigates, develops and evaluates novel ration packaging, combat feeding equipment/systems and advanced food processing technologies to prolong shelf-life. This project also investigates technologies that detect food safety hazards on the battlefield and enhance quality, nutritional content and the variety of food items in military rations. Efforts funded in this project support all Military Services, the Special Operations Command, and the Defense Logistics Agency. The Army serves as Executive Agent for this Department of Defense (DoD) program, with oversight and coordination provided by the DoD Combat Feeding Research and Engineering Board. Technologies developed within this effort transition to PE 0603001A/Project C07 for maturation.

Efforts in this program element support the Army science and technology Soldier portfolio.

Work in this PE is fully coordinated with PE 0602787A/Project 869 (Medical Technology).

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

Work in this project is led, performed, and/or managed by the US Army Natick Soldier Research, Development and Engineering Center (NSRDEC), Natick, MA, and this project has collaborative efforts with the US Army Research Institute for Environmental Medicine.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: Joint Combat Feeding Equipment Technologies	2.298	2.343	-
Description: Beginning in FY15, this effort will be renamed from Joint Combat Feeding Equipment Technologies to Joint Combat Feeding Equipment and Food Protection Technologies. This effort will investigate technologies in support of DoD Veterinary Service Activity (VSA) to improve field detection and identification capabilities for presence of chemical and biological threats in foods, and provide new tools/sensors for food inspectors. This effort additionally investigates equipment and energy technologies to expand capability and reduce logistics footprint of Joint Services field feeding operations in a wide range of environmental and operational contexts.			
FY 2013 Accomplishments:			

Exhibit R-2A, RDT&E Project Justification: PB 2015 Army		Date: March 2014
Appropriation/Budget Activity 2040 / 2	**R-1 Program Element (Number/Name)** PE 0602786A / *Warfighter Technology*	**Project (Number/Name)** H99 / *Joint Service Combat Feeding Technology*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Explored alternative energy solutions to reduce fuel, water, and logistics requirements of current field feeding systems to support a single scalable kitchen platform for the Joint Forces that uses common integrated kitchen components. ***FY 2014 Plans:*** Investigate grey water recycling and repurposing technologies within field feeding operations to reduce the contingency basing footprint and cost; investigate logistical support and costs of novel JP8 fueled burner technologies within containerized field kitchen platforms to improve fuel efficiency and reduce troop to task ratio within contingency basing field feeding operations; identify technology gaps in kitchen platforms across Joint Forces to increase use of common kitchen components to improve mean-time between failure while increasing interoperability across Joint systems.			
Title: Joint Combat Feeding Equipment and Food Protection Technologies ***Description:*** Beginning in FY15, this effort is renamed from Joint Combat Feeding Equipment Technologies to Joint Combat Feeding Equipment and Food Protection Technologies. This effort will investigate technologies in support of DoD Veterinary Service Activity (VSA) to improve field detection and identification capabilities for presence of chemical and biological threats in foods, and provide new tools/sensors for food inspectors. This effort additionally investigates equipment and energy technologies to expand capability and reduce logistics footprint of Joint Services field feeding operations in a wide range of environmental and operational contexts. ***FY 2015 Plans:*** Will explore technology for elimination/prevention of pathogens in fresh fruit and vegetables; develop methods to significantly reduce detection times for viable pathogens; investigate novel technologies to promote Joint field feeding operations and reduce field feeding logistical footprint.	-	-	1.429
Title: Ration Stabilization, Packaging, Novel Nutrient Delivery, and Food Safety Technologies ***Description:*** Beginning in FY15, this effort will be renamed from Ration Stabilization, Packaging, Novel Nutrient Delivery, and Food Safety Technologies to Ration Stabilization and Novel Nutrient Delivery Technologies. This effort will provide investigation of complementary food technologies. This effort identifies and develops stabilization techniques and nutrient compositions to maximize Warfighter's cognitive and physical performance on the battlefield and minimizes nutritional degradation to optimize Warfighter's health. ***FY 2013 Accomplishments:*** Explored novel drying process to produce shelf stable, nutritionally dense carriers for performance optimizing ingredients; explored efficient food sample preparation/clean-up methods to improve accuracy of biosensor detection technologies for preventing food borne illnesses; investigated simulated digestion model to measure human absorption of bio-active nutrients. ***FY 2014 Plans:***	3.379	3.456	-

Exhibit R-2A, RDT&E Project Justification: PB 2015 Army		Date: March 2014
Appropriation/Budget Activity 2040 / 2	**R-1 Program Element (Number/Name)** PE 0602786A / *Warfighter Technology*	**Project (Number/Name)** H99 / *Joint Service Combat Feeding Technology*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Investigate dehydration technologies to produce lighter weight, condensed, shelf-stable rations that reduce refrigeration requirements in field environments; explore methods of stabilizing amino acids within rations to ensure optimal nutritional absorption by the Warfighter based on results from the FY13 investigation of the simulated digestion model; evaluate performance of new bio-based packaging solutions within ration platforms to meet shelf-stability requirements extending ration life-cycle and reducing cost.			
Title: Ration Stabilization and Novel Nutrient Delivery Technologies ***Description:*** Beginning in FY15, this effort is renamed from Ration Stabilization, Packaging, Novel Nutrient Delivery, and Food Safety Technologies to Ration Stabilization and Novel Nutrient Delivery Technologies. This effort will provide investigation of complementary food technologies. This effort identifies and develops stabilization techniques and nutrient compositions to maximize Warfighter's cognitive and physical performance on the battlefield and minimizes nutritional degradation to optimize Warfighter's health. ***FY 2015 Plans:*** Will explore nutrient delivery methods within rations to ensure optimal Warfighter nutrition and performance; investigate emerging technologies to produce lightweight, condensed, shelf-stable rations that reduce refrigeration requirements in field environments; explore novel processing and stabilization technologies to improve acceptability and increase consumption while meeting shelf-stability requirements, extending ration life-cycle and reducing cost.	-	-	1.600
Accomplishments/Planned Programs Subtotals	5.677	5.799	3.029

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2015 Army			Date: March 2014
Appropriation/Budget Activity 2040 / 2	R-1 Program Element (Number/Name) PE 0602786A / *Warfighter Technology*	Project (Number/Name) VT4 / *Expeditionary Mobile Base Camp Technology*	

COST ($ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
VT4: *Expeditionary Mobile Base Camp Technology*	-	1.462	1.577	1.339	-	1.339	1.771	2.500	3.250	3.175	-	-

The FY 2015 OCO Request will be submitted at a later date.

A. Mission Description and Budget Item Justification

This project matures and demonstrates fully integrated holistic expeditionary base camp (EBC) capabilities with mission-specific plug and play components, subsystems and modules designed to optimize manpower requirements, improve situational awareness, increase Soldier readiness and survivability, optimize habitation, reduce logistics footprint, enhance supportability and reduce cost. Expeditionary Base Camp (EBC) systems provide an operational capability for Small Combat Units (battalion and below) and Soldiers in varying environments which are rapidly deployable and re-locatable and require no Military Construction and limited materiel handing support. This project integrates mature technologies to create mission specific lab demonstrators and evaluates the performance capabilities using metrics and methodologies developed under PE 0602786A/Project VT4.

Efforts in this program element support the Army science and technology Soldier portfolio.

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 led, performed and/or managed by the US Army Natick Soldier Research, Development and Engineering Center (NSRDEC), Natick, MA and fully coordinated with PE 0602786A (Warfighter Technology), PE 0602784A and 0603734A (Military Engineering), PE 0603004A (Weapons and Munitions Advanced Technology), PE 0603005A (Combat Vehicle and Automotive Advanced Technology), PE 0603125A (Combating Terrorism Technology Development) and PE 0603772A (Advanced Tactical Computer Science and Sensor Technology).

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: Expeditionary Base Camp Component Technologies	1.462	1.577	1.339
Description: Identify and improve component interoperability and mature and scale component technologies for an integrated holistic base camp concept. This effort supports Basing Sustainment and Logistics capability demonstrations.			
FY 2013 Accomplishments: Evaluated technology approaches to address the performance criteria and capability sets identified in FY12; investigated technologies which can increase capabilities to project the force, sustain the force and/or protect the base without increasing			

Exhibit R-2A, RDT&E Project Justification: PB 2015 Army		Date: March 2014
Appropriation/Budget Activity 2040 / 2	**R-1 Program Element (Number/Name)** PE 0602786A / *Warfighter Technology*	**Project (Number/Name)** VT4 / *Expeditionary Mobile Base Camp Technology*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
manpower requirements; conducted experiments to measure protection, power and other sustainment technologies performance using test protocols developed in FY12. ***FY 2014 Plans:*** Investigate self-sustaining living module concepts for experiments with technologies investigated in FY13 that reduce dependence on resupply at Contingency Bases by providing protection, water, energy efficiency and power capabilities; validate protection, power and other sustainment performance parameters measured in FY13. ***FY 2015 Plans:*** Will investigate emerging technology approaches (e.g., ion-exchange) for handling and treatment of black waste to ensure a hygienic environment and protect Soldier health and readiness at combat outposts; explore self-sufficiency solutions that minimize logistical needs, as well as identify opportunities for co-generation and dual-use technology approaches; investigate the benefits of nonwoven textiles for potential shelter technology applications to achieve a 20% weight reduction over current woven fabrics.			
Accomplishments/Planned Programs Subtotals	1.462	1.577	1.339

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A