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Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603804A: <i>Logistics and Engineer Equipment - Adv Dev</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
Total Program Element	-	12.107	14.605	11.556	-	11.556	14.559	20.643	15.827	13.868	Continuing	Continuing
526: <i>Marine Orien Log Eq Ad</i>	-	2.614	2.836	2.369	-	2.369	3.790	3.473	3.167	3.535	Continuing	Continuing
G11: <i>Adv Elec Energy Con Ad</i>	-	0.669	3.921	2.501	-	2.501	0.788	7.401	4.192	0.823	Continuing	Continuing
G14: <i>Materials Handling Equipment - Ad</i>	-	0.000	0.149	0.649	-	0.649	0.898	0.402	0.304	0.750	Continuing	Continuing
K39: <i>Field Sustainment Support Ad</i>	-	2.857	2.970	2.161	-	2.161	3.061	3.434	2.727	2.801	Continuing	Continuing
K41: <i>Water And Petroleum Distribution - Ad</i>	-	3.990	2.706	2.263	-	2.263	3.617	3.314	3.022	3.544	Continuing	Continuing
VR8: <i>Combat Service Support Systems - Ad</i>	-	1.977	2.023	1.613	-	1.613	2.405	2.619	2.415	2.415	Continuing	Continuing

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

Note

Change Summary Explanation: Decrease is due to several PROJECTs.

A. Mission Description and Budget Item Justification

This program element supports advanced component development and prototypes of new and improved technologies for combat support and combat service support equipment essential to sustaining combat operations. Advancements in watercraft, bridging, electric power generators, potable water, material-handling, environmental control, shelter systems, cargo aerial delivery, field service systems, mortuary affairs equipment and petroleum equipment are necessary to improve safety and increase the tactical mobility, operational capability, lethality and survivability on the digital battlefield and to provide for greater sustainment while reducing the logistics support burden.

Decrease from FY 2013 to FY 2014 reflects decrease of several projects.

For FY14, Joint Light Tactical Vehicle (JLTV) moved to PE: 655812/Project: VU9

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B. Program Change Summary (\$ in Millions)	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total
Previous President's Budget	12.706	14.605	13.734	-	13.734
Current President's Budget	12.107	14.605	11.556	-	11.556
Total Adjustments	-0.599	0.000	-2.178	-	-2.178
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-0.599	-	-2.178	-	-2.178

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army										DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>					R-1 ITEM NOMENCLATURE PE 0603804A: <i>Logistics and Engineer Equipment - Adv Dev</i>				PROJECT 526: <i>Marine Orien Log Eq Ad</i>			
COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013[#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
526: <i>Marine Orien Log Eq Ad</i>	-	2.614	2.836	2.369	-	2.369	3.790	3.473	3.167	3.535	Continuing	Continuing
Quantity of RDT&E Articles												

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

A. Mission Description and Budget Item Justification

The FY14 dollars in the amount of \$2.369 million supports project advanced component study and development, and prototype of equipment and sub-systems supporting the Army Watercraft mission to provide critical capabilities in support of full-spectrum land combat operations, by extending the Commander's available maneuver space into and throughout the littorals, inland waterways and near coastal regions. Army watercraft equipment supports the conduct of riverine, Logistics Over The Shore (LOTS), Joint Logistics Over The Shore (JLOTS), inter and intratheater transport, movement and maneuver, mission command and sustainment, as identified in DODD 5100-01 (Functions of the Department of Defense and its Major Components). Army Watercraft exploit the inland waterway and littoral regions as waterborne maneuver and supply routes, conduct operations through littoral entry points, developed, undeveloped, and austere access points, and in non-permissive, and/or denied access scenarios. The Army uses a spectrum of lighterage and floating craft, from heavy sustainment ocean going landing craft capable of intratheater and ship to shore transport and undeveloped beach or harbor access, to ocean-going and harbor utility tug boats and barge derricks for transport and denied port/salvage operations, and modular causeway systems to support LOTS/JLOTS. Capability will be appropriately incorporated into development of the Family of Maneuver Support Vessels (FMSV) Initial Capabilities Document (ICD) studies.

Funding will also be used to enhance the maturation of equipment, systems and sub-systems into Army Watercraft for the purposes of improved performance, energy efficiency, environmental, and regulatory compliance. Funding is also used to enhance the seaworthiness, safety, survivability, supportability, and reliability of existing systems. Funded efforts will advance critical gaps in these areas for the current fleet, while at the same time studying, developing, and testing emergent technologies in a manner to support future acquisitions and future fleet planning, as those areas are to be imminently informed by the Army Watercraft Systems Board of Directors (AWS BOD).

Fleet wide funding requirements will complete core requirements for development, prototype operational testing, and military unit assessment of externally mounted accommodation units in support of crew and supercargo berthing, integration of Escalation of Force (EoF) force protection enhancements, to include both lethal and non-lethal, development of Battle Command on the Move (BCOTM) and Common Operating Picture (COP)/interoperability aspects of existing C4ISR, enhancement of developing environmental and energy efficiency technologies to ensure continued compliance with increasingly stringent regulatory requirements, and study/development of digital technology integration in the areas of near and real time logistics management, area situational awareness, trend analysis, Condition Based Maintenance Plus (CBM+), equipment monitoring and diagnostics/prognostics and related functional areas, as well as study, and development of Terminal Operations (ship to shore).

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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>		R-1 ITEM NOMENCLATURE PE 0603804A: <i>Logistics and Engineer Equipment - Adv Dev</i>		PROJECT 526: <i>Marine Orien Log Eq Ad</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
Title: WATERCRAFT - FAMILY OF MANEUVER SUPPORT VESSELS (FMSV) INITIAL CAPABILITIES DOCUMENT (ICD) CAPABILITIES AND FEASABILITY STUDY/DEVELOPMENT Description: VSB - Vessel to Shore Bridging Study/Development FY 2012 Accomplishments: VSB - Vessel to Shore Bridging Study/Development FY 2013 Plans: Family of Maneuver Support Vessels (FMSV) Initial Capabilities Document (ICD) support. FY 2014 Plans: Family of Maneuver Support Vessels (FMSV) Initial Capabilities Document (ICD) support.		0.502 0	0.230 0	0.055
Title: WATERCRAFT -LANDING CRAFT MECHANIZED (LCM8) STUDY/DEVELOPMENT Description: Landing Craft Mechanized 8 FY 2012 Accomplishments: LCM 8 - Landing Craft Mechanized 8 Study/Development FY 2013 Plans: Watercraft - Landing Craft Mechanized (LCM8) Study/Development FY 2014 Plans: Watercraft - Landing Craft Mechanized (LCM8) Study/Development		0.441 0	0.150 0	0.125
Title: WATERCRAFT - HEAVY LIFT VESSEL STUDY/DEVELOPMENT Description: AWS Heavy Lift Vessel FY 2012 Accomplishments: Heavy Lift Vessel Study/Development FY 2013 Plans: Heavy Lift Vessel Study/Development		0.441 0	0.200 0	0.000
Title: WATERCRAFT - ARMY WATERCRAFT MODULE, BERTHING (AWMB) STUDY/DEVELOPMENT		0.441	0.300	0.500

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<i>Articles:</i>		0	0	
Description: AWS - Army Watercraft Module, Berthing (AWMB)				
FY 2012 Accomplishments: People Pods Study/Development				
FY 2013 Plans: People Pods Study/Development				
FY 2014 Plans: Prototype operational testing and military unit assessment of crew and supercargo accommodations and berthing units.				
Title: WATERCRAFT - FORCE PROTECTION STUDY/DEVELOPMENT		0.391	0.350	0.600
<i>Articles:</i>		0	0	
Description: AWS - Force Protection				
FY 2012 Accomplishments: Force Protection Study/Development				
FY 2013 Plans: Force Protection Study/Development				
FY 2014 Plans: Force Protection; lethal and non-lethal Escalation of Force (EoF) Study/Development				
Title: WATERCRAFT - C4ISR STUDY/DEVELOPMENT		0.276	0.150	0.150
<i>Articles:</i>		0	0	
Description: AWS - C4ISR				
FY 2012 Accomplishments: C4ISR Study/Development				
FY 2013 Plans: C4ISR Study/Development				
FY 2014 Plans:				

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
C4ISR interoperability, Common Operating Picture (COP), and Battle Command on the Move (BCOTM) Study/Development.				
Title: ARMY WATERCRAFT PROGRAM SUPPORT				
Description: SALARY SUPPORT				
FY 2012 Accomplishments: SALARY				
FY 2013 Plans: Support				
FY 2014 Plans: SALARY SUPPORT				
Title: WATERCRAFT MARKET SURVEYS AND BUSINESS ANALYSIS				
Description: Funding is provided for the following effort				
FY 2013 Plans: Continues Watercraft Market Surveys and Business Analysis				
FY 2014 Plans: Continues Watercraft Market Surveys and Business Analysis				
Title: WATERCRAFT - RIVERINE CRAFT STUDY/DEVELOPMENT				
Description: Riverine Craft Study/Development				
FY 2013 Plans: Riverine Craft Study/Development				
FY 2014 Plans: Riverine Craft Study/Development				
Title: WATERCRAFT - MEDIUM TUG AND BARGE STUDY/DEVELOPMENT				
Description:				
FY 2013 Plans:				
FY 2014 Plans:				
Articles:				

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)			FY 2012	FY 2013	FY 2014
Description: Tug and Barge Study/Development FY 2013 Plans: Tug and Barge Study/Development FY 2014 Plans: Medium Tug and Barge Study/Development					
Title: WATERCRAFT - TERMINAL OPERATIONS STUDY/DEVELOPMENT Description: Terminal Operations and Ship to Shore Study/Development FY 2013 Plans: Terminal Operations and Ship to Shore Study/Development FY 2014 Plans: Terminal Operations and Ship to Shore Study/Development			Articles: 0.000	0.200 0	0.075
Title: WATERCRAFT - PORT/HARBOR UTILITY DEVELOPMENT Description: Port/Harbor Utility Study/Development FY 2013 Plans: Port/Harbor Utility and Light Landing Craft Study/Development FY 2014 Plans: Port/Harbor Utility Study/Development			Articles: 0.000	0.150 0	0.050
Title: WATERCRAFT - AMPHIBIOUS CRAFT STUDY/DEVELOPMENT Description: Amphibious Craft Study/Development FY 2013 Plans: Amphibious Craft Study/Development			Articles: 0.000	0.100 0	0.000
Title: WATERCRAFT - DIGITAL INTEGRATION STUDY/DEVELOPMENT			Articles: 0.000	0.150 0	0.050

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
Description: Digital Integration Study/Development FY 2013 Plans: Digital Integration Study/Development FY 2014 Plans: Digital Integration Study/Development				
Title: WATERCRAFT - AT SEA TRANSFER STUDY/DEVELOPMENT Description: At Sea Transfer Study/Development FY 2013 Plans: At Sea Transfer Study/Development		Articles: 0.000	0.100 0	0.000
Title: WATERCRAFT - ENERGY EFFICIENCY AND ENVIRONMENTAL COMPLIANCE STUDY/DEVELOPMENT Description: Energy Efficiency and Environmental Compliance FY 2013 Plans: Energy Efficiency and Environmental Compliance FY 2014 Plans: Adaptation of developing energy efficiency and environmental compliance technologies IAW evolving regulatory requirements.		Articles: 0.000	0.150 0	0.300
Title: WATERCRAFT - SMALL BUSINESS INCENTIVE RESEARCH (SBIR); SBIR AND TECHNOLOGY TRANSER RESEARCH (STTR) Description: Watercraft - Small Business Incentive Research (SBIR); SBIR and Technology Transfer Research FY 2012 Accomplishments: Watercraft - Small Business Incentive Research (SBIR); SBIR and Technology Transfer Research		Articles: 0.072 0	0.000	0.000
Accomplishments/Planned Programs Subtotals		2.614	2.836	2.369

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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u> <u>Base</u>	<u>FY 2014</u> <u>OCO</u>	<u>FY 2014</u> <u>Total</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• MA4500 Modification on In-Service: <i>MA4500 Modification on In-Service Equipment (OPA3)</i>	72.271	41.903	96.661		96.661	110.909	76.108	67.363	68.321	Continuing	Continuing

Remarks

Other program funding. MA4500, Modification on In-Service Equipment (OPA3) includes funding for modifications to systems other than watercraft.

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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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603804A: <i>Logistics and Engineer Equipment - Adv Dev</i>	PROJECT 526: <i>Marine Orien Log Eq Ad</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
WATERCRAFT - ARMY WATERCRAFT SYSTEMS PROGRAM SUPPORT	SS/BA	PM TRANSPORTATION SYSTEMS:TACOM	3.129	-		0.156		0.050	Dec 2013	-		0.050	Continuing	Continuing	Continuing
SMALL BUSINESS INCENTIVE RESEARCH (SBIR); SBIR AND TECHNOLOGY TRANSFER RESEARCH TAX	TBD	Various:Various	0.000	0.072	Aug 2012	-		-		-		-	0.000	0.072	0.083
Subtotal			3.129	0.072		0.156		0.050		0.000		0.050			

Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
FAMILY OF MANEUVER SUPPORT VESSELS (FMSV) INITIAL CAPABILITIES DOCUMENT (ICD)STUDY/ DEVELOPMENT	C/ FFPLOE	TBD:TBD	0.000	0.502	Mar 2012	0.230	Dec 2012	0.055	Dec 2013	-		0.055	Continuing	Continuing	Continuing
LANDING CRAFT MECHANIZED (LCM8) STUDY/DEVELOPMENT	C/ FFPLOE	TBD:TBD	0.000	0.441	Mar 2012	0.150	Dec 2012	0.125	Dec 2013	-		0.125	Continuing	Continuing	Continuing
HEAVY LIFT VESSEL STUDY/DEVELOPMENT	C/ FFPLOE	TBD:TBD	0.000	0.441	Mar 2012	0.200	Dec 2012	-		-		-	Continuing	Continuing	Continuing
ARMY WATERCRAFT MODULE, BERTHING (AWMB) STUDY/ DEVELOPMENT	C/ FFPLOE	PM Force Sustainment Systems:Natick, MA	0.000	0.441	Mar 2012	0.400	Dec 2012	0.500	Dec 2013	-		0.500	Continuing	Continuing	Continuing
FORCE PROTECTION STUDY/DEVELOPMENT	C/ FFPLOE	NSWCDD:Crane, IN	0.000	0.391	Mar 2012	0.350	Dec 2012	0.600	Dec 2013	-		0.600	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Army **DATE:** April 2013

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Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
C4ISR STUDY/DEVELOPMENT	C/FFPLOE	SPAWAR:Charleston, SC	0.000	0.276	Mar 2012	0.150	Dec 2012	0.150	Dec 2013	-		0.150	Continuing	Continuing	Continuing
ARMY WATERCRAFT PROGRAM SUPPORT	SS/TBD	Warren, MI:PdAWS	0.000	0.050		-		-		-		-	0.000	0.050	0.000
MARKET SURVEYS/BUSINESS ANALYSIS	C/FP	TBD:TBD	0.000	-		0.150	Dec 2012	0.050	Dec 2013	-		0.050	Continuing	Continuing	Continuing
RIVERINE CRAFT STUDY/DEVELOPMENT	C/FFPLOE	TBD:TBD	0.000	-		0.150	Dec 2012	0.050	Dec 2013	-		0.050	Continuing	Continuing	Continuing
MEDIUM TUG AND BARGE STUDY/DEVELOPMENT	C/FFPLOE	ARO - Battelle:Columbus, OH	0.000	-		0.150	Dec 2012	0.314	Dec 2013	-		0.314	Continuing	Continuing	Continuing
TERMINAL OPERATIONS STUDY/DEVELOPMENT	C/FFPLOE	TBD:TBD	0.000	-		0.200	Dec 2012	0.075	Dec 2013	-		0.075	Continuing	Continuing	Continuing
PORT/HARBOR UTILITY DEVELOPMENT	C/FFPLOE	TBD:TBD	0.000	-		0.150	Dec 2012	0.050	Dec 2013	-		0.050	Continuing	Continuing	Continuing
AMPHIBIOUS CRAFT STUDY/DEVELOPMENT	C/FFPLOE	TBD:TBD	0.000	-		0.100	Dec 2012	-		-		-	Continuing	Continuing	Continuing
DIGITAL INTEGRATION STUDY/DEVELOPMENT	C/FFPLOE	SPAWAR:Charleston, SC	0.000	-		0.150	Dec 2012	0.050	Dec 2013	-		0.050	Continuing	Continuing	Continuing
ENERGY EFFICIENCY AND ENVIRONMENTAL COMPLIANCE	C/FFPLOE	Various:Various	0.000	-		0.150	Dec 2012	0.300	Dec 2013	-		0.300	Continuing	Continuing	Continuing
Subtotal			0.000	2.542		2.680		2.319		0.000		2.319			

	All Prior Years	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals		3.129	2.614	2.836	2.369	0.000	2.369		

Remarks

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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603804A: <i>Logistics and Engineer Equipment - Adv Dev</i>	PROJECT 526: <i>Marine Orien Log Eq Ad</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
RIVERINE CRAFT STUDY/DEVELOPMENT	1	2013	4	2017
MEDIUM TUG AND BARGE STUDY/DEVELOPMENT	1	2013	4	2017
TERMINAL OPERATIONS STUDY/DEVELOPMENT	1	2013	4	2017
PORT/HARBOR UTILITY STUDY/DEVELOPMENT	1	2013	4	2017
AMPHIBIOUS CRAFT STUDY/DEVELOPMENT	1	2013	4	2014
DIGITAL INTEGRATION STUDY/DEVELOPMENT	1	2013	4	2017
ENERGY EFFICIENCY AND ENVIRONMENTAL COMPLIANCE	1	2013	4	2017
WATERCRAFT - AT SEA TRANSFER STUDY/DEVELOPMENT	1	2013	4	2014

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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
G11: <i>Adv Elec Energy Con Ad</i>	-	0.669	3.921	2.501	-	2.501	0.788	7.401	4.192	0.823	Continuing	Continuing
Quantity of RDT&E Articles												

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012
^{##} The FY 2014 OCO Request will be submitted at a later date

Note
 Not Applicable for this item.

A. Mission Description and Budget Item Justification

The Tactical Electric Power (TEP) program was established by the Department of Defense to develop modernized, standard families of mobile electric power sources and power distribution systems for all Services throughout the Department of Defense. Project Manager Mobile Electric Power (PM MEP) derives concept and technology developments that will improve the performance, mobility, readiness and survivability of the next generation of tactical power sources in support of all Services. It supports initiatives that are essential to the development and fielding of modernized TEP sources from Watts to Megawatts level that comply with environmental statues and provide noise and signature-suppressed, energy-efficient, lightweight, deployable and reliable equipment. FY13 and 14 will fund test and evaluation of technologies for Large Advanced Mobile Power Sources (LAMPS), Small Tactical Electric Power (STEP), alternative energy, and Intelligent Power Distribution Systems. Out years will support investigation of general advancements in engine, power equipment and power distribution equipment that are applicable to current equipment and emerging requirements.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2012	FY 2013	FY 2014
Title: Contract Activity <div style="text-align: right;">Articles:</div>	0.000	2.409 0	1.500
Description: Continue development of technology supporting the Large Advanced Mobile Power Sources (LAMPS) program, the Small Tactical Electric Power (STEP) programs, Intelligent Power Management and Distribution Systems (IPMDS), and Alternative Energy Sources. FY 2013 Plans: Procure various technologies related to Tactical Electric Power and power distribution/management across the DoD power spectrum. Specific efforts will include STEP components, hybrid/alternative energy power sources, and intelligent power distribution/management systems. FY 2014 Plans:			

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
Procure various technologies related to Tactical Electric Power and power distribution/management across the DoD power spectrum. Specific efforts will include STEP components, hybrid/alternative energy power sources, and intelligent power distribution/management systems.				
<p>Title: Government System Test and Evaluation</p> <p align="right">Articles:</p> <p>Description: Continue development of technology supporting the Small Tactical Electric Power (STEP) programs, Intelligent Power Management and Distribution Systems (IPMDS), and Alternative Energy Sources.</p> <p>FY 2012 Accomplishments: Evaluation and testing of various technologies related to tactical electric power and power distribution/management across the DoD power spectrum. Efforts will be aimed at resolving technology gaps to meet Army User requirements. Efforts will support the Tactical Electric Power Capabilities Production Document (TEP CPD). Specific efforts will include performance testing of small generator sets, hybrid/alternative energy power sources, and intelligent power distribution/management systems. Also supports new equipment demonstrations at Network Integration Evaluation (NIE) 12.2 and 13.1.</p> <p>FY 2013 Plans: Continue evaluation and testing of various technologies related to tactical electric power and power distribution and management across the DoD power spectrum. Efforts will be aimed at resolving technology gaps to meet Army User requirements. Efforts will support the Tactical Electric Power Capabilities Production Document (TEP CPD). Specific efforts will include performance testing of small generator sets, hybrid/alternative energy power sources, and intelligent power distribution/management systems. Program also supports Rapid Equipping Force deployments of alternative energy systems in support of Village Stability Operation. Program Supports new equipment and concept demonstrations at NIE 13.2 and 14.1.</p> <p>FY 2014 Plans: Continue evaluation and testing of various technologies related to tactical electric power and power distribution and management across the DoD power spectrum. Efforts will be aimed at resolving technology gaps to meet Army User requirements. Efforts will support the Tactical Electric Power Capabilities Production Document (TEP CPD). Specific efforts will be limited to small generator system testing due to limited funding.</p>		0.080 0	0.291 0	0.350
<p>Title: Other Contracts and Gov't agencies</p> <p align="right">Articles:</p> <p>Description: Continue development of technology supporting the Large Advanced Mobile Power Sources (LAMPS) program, the Small Tactical Electric Power (STEP) programs, Intelligent Power Management and Distribution Systems (IPMDS), and Alternative Energy Sources.</p>		0.506 0	0.994 0	0.400

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>		R-1 ITEM NOMENCLATURE PE 0603804A: <i>Logistics and Engineer Equipment - Adv Dev</i>		PROJECT G11: <i>Adv Elec Energy Con Ad</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)				FY 2012
FY 2012 Accomplishments: Evaluation and testing of various technologies related to Tactical Electric Power and power distribution/management across the DoD power spectrum. Specific efforts will include development of STEP, and evaluation of hybrid/alternative energy power sources and intelligent power distribution/management systems.				
FY 2013 Plans: Evaluation and testing of various technologies related to Tactical Electric Power and power distribution/management across the DoD power spectrum. Specific efforts will include development of STEP, and evaluation of hybrid/alternative energy power sources and intelligent power distribution/management systems.				
FY 2014 Plans: Evaluation and testing of various technologies related to Tactical Electric Power and power distribution/management across the DoD power spectrum. Specific efforts will be limited to the development of STEP given limited funding.				
Title: Government Program Management				0.083
Articles:				0
Description: Continue development of technology supporting the Large Advanced Mobile Power Sources (LAMPS) program, the Small Tactical Electric Power (STEP) programs, Intelligent Power Management and Distribution Systems (IPMDS), and Alternative Energy Sources.				0.227
FY 2012 Accomplishments: Oversight and management of various technology projects related to Tactical Electric Power and power distribution/management across the DoD power spectrum. Efforts will be aimed at resolving technology gaps to meet Army User requirements. Efforts will support the STEP program and the Tactical Electric Power Capabilities Production Document (TEP CPD). Specific efforts will include development of large sets, hybrid/alternative energy power sources, and intelligent power distribution/management systems.				0.251
FY 2013 Plans: Oversight and management of various technology projects related to Tactical Electric Power and power distribution/management across the DoD power spectrum. Efforts will be aimed at resolving technology gaps to meet Army User requirements. Efforts will support the STEP program and the Tactical Electric Power Capabilities Production Document (TEP CPD). Specific efforts will include development of large sets, hybrid/alternative energy power sources, and intelligent power distribution/management systems.				
FY 2014 Plans:				

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army	DATE: April 2013
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603804A: <i>Logistics and Engineer Equipment - Adv Dev</i>	PROJECT G11: <i>Adv Elec Energy Con Ad</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
Oversight and management of various technology projects related to Tactical Electric Power and power distribution/management across the DoD power spectrum. Efforts will be aimed at resolving technology gaps to meet Army User requirements. Efforts will support the STEP program and the Tactical Electric Power Capabilities Production Document (TEP CPD). Specific efforts will be limited to small power sources given limited funding.			
Accomplishments/Planned Programs Subtotals	0.669	3.921	2.501

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
• 654804.194: <i>Logistics and Engineer Equipment - Eng Dev 194</i>	10.854	9.692	5.027		5.027	11.503	9.332	4.596	1.244	Continuing	Continuing
• MA9800: <i>OPA 3, Generators and Associated Eq.</i>	67.897	67.897	129.437		129.437	176.107	254.448	273.954	45.435	Continuing	Continuing

Remarks

D. Acquisition Strategy

Complete advanced development pre-milestone B technology assessments and analysis, and transition of tactical electric power and power distribution products to Engineering and Manufacturing Development (EMD) phase (Milestone B) and subsequent transition to production (Milestone C).

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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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603804A: <i>Logistics and Engineer Equipment - Adv Dev</i>	PROJECT G11: <i>Adv Elec Energy Con Ad</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Step Components	Various	PM-MEP:Fort Belvoir, VA	0.176	0.040	Dec 2011	0.100	Nov 2012	0.200	Nov 2013	-		0.200	Continuing	Continuing	0.000
LAMPS Components	Various	PM-MEP:Fort Belvoir, VA	0.089	-		-		-		-		-	Continuing	Continuing	Continuing
Alternative Energy	Various	PM MEP:Ft. Belvoir, VA	0.125	0.021	Dec 2011	0.067	Nov 2012	0.051	Nov 2013	-		0.051	Continuing	Continuing	Continuing
Power Distribution/Management	Various	PM MEP:Ft. Belvoir, VA	0.103	0.022	Dec 2011	0.060	Nov 2012	-		-		-	Continuing	Continuing	Continuing
Small Business Innovative Research/Small Business Technology Transfer Programs	Various	TBD:TBD	0.066	-		-		-		-		-	Continuing	Continuing	0.000
Subtotal			0.559	0.083		0.227		0.251		0.000		0.251			

Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
STEP Components	Various	CERDEC:Fort Belvoir, VA	0.590	-		1.500	Mar 2013	1.000	Mar 2014	-		1.000	Continuing	Continuing	Continuing
LAMPS Components	Various	CERDEC:Fort Belvoir, VA	0.140	-		-		-		-		-	Continuing	Continuing	Continuing
Alternative Energy	Various	Multiple Vendors:TBD	0.815	-		0.500	Mar 2013	0.250	Mar 2014	-		0.250	Continuing	Continuing	Continuing
AMMPS Components	Various	CERDEC:Fort Belvoir, VA	0.001	-		-		-		-		-	0.000	0.001	0.000
Power Distribution/Management	Various	CERDEC:Fort Belvoir, VA	0.250	-		0.409	Mar 2013	0.250	Mar 2014	-		0.250	Continuing	Continuing	Continuing
Subtotal			1.796	0.000		2.409		1.500		0.000		1.500			

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603804A: <i>Logistics and Engineer Equipment - Adv Dev</i>	PROJECT G11: <i>Adv Elec Energy Con Ad</i>
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Support (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
STEP Components	MIPR	CERDEC:Fort Belvoir, VA	0.300	0.106	Dec 2011	0.500	Nov 2012	0.400	Nov 2013	-		0.400	Continuing	Continuing	Continuing
AMMPS Components	MIPR	CERDEC:Fort Belvoir, VA	0.059	-		-		-		-		-	0.000	0.059	0.000
LAMPS Components	MIPR	CERDEC:Fort Belvoir, VA	0.300	-		-		-		-		-	Continuing	Continuing	Continuing
Alternative Energy	MIPR	CERDEC:Fort Belvoir, VA	0.465	0.200	Dec 2011	0.300	Nov 2012	-		-		-	Continuing	Continuing	Continuing
Power Distribution/Management	MIPR	CERDEC:Fort Belvoir, VA	0.474	0.200	Dec 2011	0.194	Nov 2012	-		-		-	Continuing	Continuing	Continuing
Subtotal			1.598	0.506		0.994		0.400		0.000		0.400			

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
STEP Components	MIPR	CERDEC:Fort Belvoir, VA	0.150	0.030	Feb 2012	0.200	Nov 2012	0.250	Nov 2013	-		0.250	Continuing	Continuing	Continuing
Alternative Energy	MIPR	CERDEC:Fort Belvoir, VA	0.115	0.050	Feb 2012	0.050	Nov 2012	0.050	Nov 2013	-		0.050	Continuing	Continuing	Continuing
Power Distribution/Management	MIPR	CERDEC:Fort Belvoir, VA	0.306	-		0.041	Nov 2012	0.050	Nov 2013	-		0.050	Continuing	Continuing	Continuing
Subtotal			0.571	0.080		0.291		0.350		0.000		0.350			

			All Prior Years	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			4.524	0.669	3.921	2.501	0.000	2.501			

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603804A: <i>Logistics and Engineer Equipment - Adv Dev</i>	PROJECT G11: <i>Adv Elec Energy Con Ad</i>

	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Complete Test and Evaluation-STEP																												
Transfer to Engineering and Manufacturing Development-STEP																												
Complete Proof of Principle Prototype (Commercial Components)--AEP																												
Coordinate Requirements with USMC; Analyze Field Data																												
Develop Ruggedized Prototypes for Field Evaluations																												
Complete Test and Evaluation--AEP																												
Transfer to Engineering and Manufacturing Development--AEP																												
Complete Test and Evaluation - Commercial IPD/M																												
Test Ruggedized IPP/M with AMMPS Microgrid																												
Transfer to Engineering and Manufacturing Development-IPD/M																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603804A: <i>Logistics and Engineer Equipment - Adv Dev</i>	PROJECT G11: <i>Adv Elec Energy Con Ad</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Complete Test and Evaluation-STEP	4	2014	4	2014
Transfer to Engineering and Manufacturing Development-STEP	4	2014	4	2014
Complete Proof of Principle Prototype (Commercial Components)--AEP	4	2012	4	2012
Coordinate Requirements with USMC; Analyze Field Data	1	2013	4	2013
Develop Ruggedized Prototypes for Field Evaluations	1	2014	4	2015
Complete Test and Evaluation--AEP	1	2016	4	2016
Transfer to Engineering and Manufacturing Development--AEP	1	2017	1	2017
Complete Test and Evaluation - Commercial IPD/M	3	2012	4	2012
Test Ruggedized IPP/M with AMMPS Microgrid	1	2013	4	2014
Transfer to Engineering and Manufacturing Development-IPD/M	2	2014	2	2014

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army										DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>					R-1 ITEM NOMENCLATURE PE 0603804A: <i>Logistics and Engineer Equipment - Adv Dev</i>					PROJECT G14: <i>Materials Handling Equipment - Ad</i>		
COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013[#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
G14: <i>Materials Handling Equipment - Ad</i>	-	0.000	0.149	0.649	-	0.649	0.898	0.402	0.304	0.750	Continuing	Continuing
Quantity of RDT&E Articles												

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

A. Mission Description and Budget Item Justification

This project supports component development and Material Handling Equipment (MHE) prototyping and stays abreast of emerging and available technologies to be integrated into military MHE to address identified capability gaps and warfighter objectives. This project enables the development of selected technologies and transition to system integration and development or production of MHE products. MHE includes Rough Terrain Forklifts, Rough Terrain Container Handlers and Cranes, as well as ancillary MHE equipment, to support distribution of critical supplies in the theater of operations. FY14 funding will allow innovative maintenance support technologies to be investigated with the goal to improve diagnostic tasks and to reduce safety and environmental hazards when performing maintenance on tactical MHE in the field.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2012	FY 2013	FY 2014
Title: Field Maintenance and Training Aids for Material Handling Equipment (MHE)	0.000	0.149	0.400
Articles:		0	
Description: Field Maintenance and Training Aids for Material Handling Equipment (MHE)			
FY 2013 Plans: Evaluate the efficacy of proposed devices to improve diagnostic tasks and to prevent spillage of hazardous materials.			
FY 2014 Plans: Develop a solution to eliminate the physical insertion of system faults for maintenance training.			
Title: Baseline Fuel Efficiency of Material Handling Equipment (MHE)	0.000	0.000	0.249
Description: Baseline Fuel Efficiency of Material Handling Equipment (MHE)			
FY 2014 Plans: Instrument and Test MHE equipment to baseline fuel consumption during standard operations.			
Accomplishments/Planned Programs Subtotals	0.000	0.149	0.649

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army	DATE: April 2013
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603804A: <i>Logistics and Engineer Equipment - Adv Dev</i>	PROJECT G14: <i>Materials Handling Equipment - Ad</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u> <u>Base</u>	<u>FY 2014</u> <u>OCO</u>	<u>FY 2014</u> <u>Total</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• RDT&E: <i>0604804A, Logistics and Engineer Equipment, Engineering Development (H14)</i>	1.613	1.415	0.298		0.298	0.576	0.986	0.964	0.615	Continuing	Continuing

Remarks

D. Acquisition Strategy

Procure prototype test items for engineering tests and demonstrations with subject matter experts. Conduct trades between cost and improved maintainability and environmental risk reduction. Process engineering change proposals, update technical manuals and training materials, and prepare supporting acquisition documents and data to procure new training aids.

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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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603804A: <i>Logistics and Engineer Equipment - Adv Dev</i>	PROJECT G14: <i>Materials Handling Equipment - Ad</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
System Engineering/ Program Management	MIPR	TARDEC:Warren, MI	0.000	-		0.022		0.186		-		0.186	0.000	0.208	0.000
Subtotal			0.000	0.000		0.022		0.186		0.000		0.186	0.000	0.208	0.000

Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Field Maintenance Aids for MHE	SS/FFP	Kalmar RT Center:Cibolo, TX	0.000	-		0.087		0.340		-		0.340	0.000	0.427	0.000
Subtotal			0.000	0.000		0.087		0.340		0.000		0.340	0.000	0.427	0.000

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Field Maintenance Aids for MHE	SS/FFP	Kalmar RT Center:Cibolo, TX	0.000	-		0.040		-		-		-	Continuing	Continuing	0.000
Baseline Fuel Efficiency of MHE Equipment	TBD	TBD:TBD	0.000	-		-		0.123		-		0.123	0.000	0.123	0.000
Subtotal			0.000	0.000		0.040		0.123		0.000		0.123			0.000

Project Cost Totals	All Prior Years	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
	0.000	0.000	0.149	0.649	0.000	0.649			0.000

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603804A: <i>Logistics and Engineer Equipment - Adv Dev</i>	PROJECT G14: <i>Materials Handling Equipment - Ad</i>

	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
Evaluate proposed field maintenance and training aids					██████████																											
Develop solution for field maintenance and training aids																																
Baseline fuel efficiency of equipment													██████████																			

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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603804A: <i>Logistics and Engineer Equipment - Adv Dev</i>	PROJECT G14: <i>Materials Handling Equipment - Ad</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Evaluate proposed field maintenance and training aids	1	2013	4	2013
Develop solution for field maintenance and training aids	2	2014	2	2014
Baseline fuel efficiency of equipment	1	2014	4	2014

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army										DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>					R-1 ITEM NOMENCLATURE PE 0603804A: <i>Logistics and Engineer Equipment - Adv Dev</i>				PROJECT K39: <i>Field Sustainment Support Ad</i>			
COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013[#]	FY 2014 Base	FY 2014 OCO^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
K39: <i>Field Sustainment Support Ad</i>	-	2.857	2.970	2.161	-	2.161	3.061	3.434	2.727	2.801	Continuing	Continuing
Quantity of RDT&E Articles												

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

A. Mission Description and Budget Item Justification

This project supports development of critical soldier support and sustainment systems including shelter systems (rigid and soft wall), cargo aerial delivery, field service systems, mortuary affairs equipment, heaters, camouflage systems to counter emerging enemy threat technologies, and other combat service support equipment. These systems will fill identified theater distribution and services capability gaps, improve unit sustainability, and increase combat effectiveness. This project also supports Advanced Component Development and Prototyping of Critical Distribution Capabilities to include cargo aerial delivery systems; which provide improved safety and accuracy while increasing survivability of aircraft, personnel, and equipment. The project supports the development of tactical heater systems that support mobile Joint Service command and control, medical, and maintenance platforms. This project develops critical enablers that support the Quartermaster (QM) Force Transformation Strategy and The Army's Modular Capabilities by maintaining readiness through fielding and integrating new equipment. This project also ensures Army Expeditionary Forces are capable of rapid deployment through aerial delivery initiatives and reduces sustainment requirements, related Combat Support/Combat Service Support (CS/CSS) demands in lift, combat zone footprint, and costs for logistical support.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2012	FY 2013	FY 2014
Title: Low Cost Aerial Delivery System P31 (LCADS)	0.700	0.000	0.000
Articles:	0		
Description: LCADS is a modular suite of low cost, expendable parachute/container air items that can be used in lieu of current low and high velocity systems. System includes a low-cost container, high-velocity parachute (70 - 90 feet per second (fps)) and low-velocity parachute (less than 28.5 fps). System is compatible with United States Air Force Aircraft (USAF A/C) and aerial port handling equipment. LCADS is a proven means to execute critical resupply missions without having to place soldiers and ground vehicle convoys on the road.			
FY 2012 Accomplishments: Improvement of LCLA cross and Low velocity parachutes.			
Title: Advanced Cargo Parachute Release System (ACPRS)	0.500	0.000	0.000
Articles:	0		

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>		R-1 ITEM NOMENCLATURE PE 0603804A: <i>Logistics and Engineer Equipment - Adv Dev</i>		PROJECT K39: <i>Field Sustainment Support Ad</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<p>Description: The ACPRS will replace the existing M-1 and M-2 cargo parachute release and is intended to decrease the number of inoperable payloads due to rollovers, while also providing a capability to airdrop loads at 500 ft Above Ground Level (AGL).</p> <p>FY 2012 Accomplishments: Initiate OT and work towards Milestone C/Full rate Production Decision.</p>				
<p>Title: Advanced Low Velocity Airdrop System Light and Heavy (ALVADS-L or ALVADS-H)</p> <p align="right">Articles:</p> <p>Description: ALVADS - Light and Heavy are capable of airdrop operations at an altitude of 500-ft Above Ground Level (AGL) with increased aircraft survivability, and improved accuracy. Light Gross rigged weight of 2,520-22,000 pounds (lbs) and Heavy Gross rigged weight of 22,001-42,000 lbs.</p> <p>FY 2012 Accomplishments: Conduct ALVADS-L Design Validation (DV) testing.</p> <p>FY 2013 Plans: Complete ALVADS-L Design Validation (DV), initiate Developmental Testing (DT) and complete Milestone A for ALVADS-H.</p> <p>FY 2014 Plans: Complete ALVADS Design Validation (DV) and system downselect.</p>		1.121 0	1.400 0	1.720
<p>Title: Rapid Rigging and Derigging System (RRDAS)</p> <p align="right">Articles:</p> <p>Description: RRDAS creates a roll-on and roll-off capability for rolling stock, reduces exposure time on the drop zone, and reduces reliance on energy-dissipating material (Honeycomb), thus reducing rigging and de-rigging time.</p> <p>FY 2012 Accomplishments: Award competitive contracts for prototype systems for RRDAS and conduct initial testing of potential candidate systems.</p> <p>FY 2013 Plans: Obtain MS B and award competitive contracts for prototype systems for RRDAS. Begin Design Validation (DV) testing.</p>		0.446 0	1.570 0	0.000
<p>Title: High Speed Container Delivery System (HSCDS)</p> <p>Description: Provides a high speed (250 knot), low altitude (250 ft AGL) capability for up to eight Container Delivery Systems (CDS) containers to enhance aircraft and aircrew safety while improving accuracy and reducing dispersion for receiving ground units.</p>		0.000	0.000	0.441

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603804A: <i>Logistics and Engineer Equipment - Adv Dev</i>	PROJECT K39: <i>Field Sustainment Support Ad</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
<i>FY 2014 Plans:</i> Complete HSCDS Design Validation (DV) testing.			
<i>Title:</i> SBIR+STTR	0.090	0.000	0.000
<i>Articles:</i>	0		
<i>Description:</i> SBIR+STTR			
<i>FY 2012 Accomplishments:</i> SBIR+STTR			
Accomplishments/Planned Programs Subtotals	2.857	2.970	2.161

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
• OPA MA7806: <i>Precision Airdrop</i>	16.707	5.935	9.500		9.500	7.209	7.395	7.400	5.628	Continuing	Continuing
• RDT&E 643804.VR8: <i>Combat Service Support Systems AD</i>	1.977	2.023	1.613		1.613	2.405	2.619	2.415	2.415	Continuing	Continuing
• RDT&E 654804.VR7: <i>Combat Service Support Systems</i>	2.465	1.745	1.193		1.193	1.965	2.054	1.915	1.915	Continuing	Continuing
• RDT&E 654804.L39: <i>Field Sustainment Support ED</i>	4.094		1.789		1.789	2.753	2.588	2.269	2.456	Continuing	Continuing

Remarks

D. Acquisition Strategy
Accelerate Joint Precision Aerial Delivery System (JPADS) product improvements to transition to Production.

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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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603804A: <i>Logistics and Engineer Equipment - Adv Dev</i>	PROJECT K39: <i>Field Sustainment Support Ad</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Project Management Support	Various	PM Force Sustainment Sys (FSS), Natick:Natick, MA	4.039	0.595	Dec 2011	0.470		0.450		-		0.450	Continuing	Continuing	Continuing
SBIR+STTR	TBD	Various:Various	0.000	0.090		-		-		-		-	0.000	0.090	0.000
Subtotal			4.039	0.685		0.470		0.450		0.000		0.450			

Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Soldier Support Equipment	Various	PM Force Sustainment Sys (FSS), Natick:Natick, MA	15.934	-		-		-		-		-	Continuing	Continuing	Continuing
LCADS P3I Effort	Various	Various:Various	1.200	0.100	Dec 2011	-		-		-		-	Continuing	Continuing	Continuing
JPADS 2K and 10K product improvements	Various	Various:Various	5.900	-		-		-		-		-	Continuing	Continuing	Continuing
High Speed Container Delivery System (HSCDS)	Various	Various:Various	1.097	-		-		0.116		-		0.116	Continuing	Continuing	Continuing
ALVADS Development	Various	Various:Various	7.900	0.550	Dec 2011	0.400		0.495		-		0.495	Continuing	Continuing	Continuing
RRDAS Development	Various	Various:Various	2.000	0.200	Aug 2012	0.750		-		-		-	Continuing	Continuing	Continuing
Next Generation Human Remains Transfer Case Development	Various	Various:Various	2.220	-		-		-		-		-	Continuing	Continuing	Continuing
Subtotal			36.251	0.850		1.150		0.611		0.000		0.611			

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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603804A: <i>Logistics and Engineer Equipment - Adv Dev</i>	PROJECT K39: <i>Field Sustainment Support Ad</i>
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	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Obtain Milestone B on Advanced Low Velocity Airdrop System -Light(ALVADS-L)	■																											
Conduct Milestone A on RRDAS							■																					
Conduct MS B on Rapid Rigging Derigging Airdrop System (RRDAS)							■																					
Conduct DV and DT on RRDAS								■																				
Conduct Milestone A (MS A) for ALVADS (H)								■																				
Conduct MS B for ALVADS							■																					
Conduct DV on ALVADS										■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
Conduct DV for ALVADS (L)		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
Obtain Milestone B for MBPS stand alone version	■																											
Obtain MS B for JPADS Block I upgrade														■														
Conduct DV for JPADS Block I upgrade														■	■	■	■	■	■	■	■	■	■	■	■	■	■	
Initiate DT for JPADS Block I upgrade																												
Obtain Milestone B on High Speed Container Delivery System (HSCDS)								■																				
Conduct DV on HSCDS														■	■	■	■	■	■	■	■	■	■	■	■	■	■	
Conduct DT on HSCDS																												
Complete Advanced Development on HSCDS																												
Conduct Milestone A on Autoload Hookup/ Rotary A/C																												
Fabricate DV systems on Autoload Hookup/ Rotary A/C																												
Complete DV on Autoload Hookup/Rotary A/C																												

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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603804A: <i>Logistics and Engineer Equipment - Adv Dev</i>	PROJECT K39: <i>Field Sustainment Support Ad</i>
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	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
Conduct Milestone B on Autoload Hookup/ Rotary A/C																																
Fabricate OT systems for Autoload Hookup/ Rotary A/C																																
Conduct Milestone B for Next Generation LCADS																																
Fabricate DT systems for Next Generation LCADS																																
Complete DT for Next Generation LCADS																																

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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603804A: <i>Logistics and Engineer Equipment - Adv Dev</i>	PROJECT K39: <i>Field Sustainment Support Ad</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Obtain Milestone B on Advanced Low Velocity Airdrop System -Light(ALVADS-L)	2	2012	2	2012
Conduct Milestone A on RRDAS	3	2013	3	2013
Conduct MS B on Rapid Rigging Derigging Airdrop System (RRDAS)	3	2013	3	2013
Conduct DV and DT on RRDAS	4	2013	4	2013
Conduct Milestone A (MS A) for ALVADS (H)	4	2013	4	2013
Conduct MS B for ALVADS	3	2013	3	2013
Conduct DV on ALVADS	1	2014	1	2015
Conduct DV for ALVADS (L)	3	2012	2	2013
Obtain Milestone B for MBPS stand alone version	2	2012	2	2012
Obtain MS B for JPADS Block I upgrade	1	2015	1	2015
Conduct DV for JPADS Block I upgrade	2	2015	1	2016
Initiate DT for JPADS Block I upgrade	3	2016	4	2016
Obtain Milestone B on High Speed Container Delivery System (HSCDS)	4	2013	4	2013
Conduct DV on HSCDS	3	2014	2	2015
Conduct DT on HSCDS	3	2015	1	2016
Complete Advanced Development on HSCDS	2	2016	3	2016
Conduct Milestone A on Autoload Hookup/Rotary A/C	2	2016	2	2016
Fabricate DV systems on Autoload Hookup/Rotary A/C	4	2016	4	2016
Complete DV on Autoload Hookup/Rotary A/C	1	2017	4	2017
Conduct Milestone B on Autoload Hookup/Rotary A/C	4	2017	4	2017
Fabricate OT systems for Autoload Hookup/Rotary A/C	2	2018	2	2018
Conduct Milestone B for Next Generation LCADS	2	2017	2	2017

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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603804A: <i>Logistics and Engineer Equipment - Adv Dev</i>	PROJECT K39: <i>Field Sustainment Support Ad</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
Fabricate DT systems for Next Generation LCADS	4	2017	4	2017
Complete DT for Next Generation LCADS	1	2018	4	2018

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army										DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>					R-1 ITEM NOMENCLATURE PE 0603804A: <i>Logistics and Engineer Equipment - Adv Dev</i>				PROJECT K41: <i>Water And Petroleum Distribution - Ad</i>			
COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013[#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
K41: <i>Water And Petroleum Distribution - Ad</i>	-	3.990	2.706	2.263	-	2.263	3.617	3.314	3.022	3.544	Continuing	Continuing
Quantity of RDT&E Articles												

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

A. Mission Description and Budget Item Justification

This project develops and demonstrates the potential of prototype equipment and technologies to satisfy petroleum storage, distribution, and quality surveillance system requirements. The Concept and Technology Development program supports the development and enhancement of rapidly deployable Petroleum and Water equipment. The mission includes developing onboard fuels quality analysis systems; achieving greater capabilities in the removal of Nuclear, Biological, Chemical (NBC) and other contaminants from water sources; reducing the logistics foot print; developing water reutilization systems to reduce the requirement for transport of water into the theater; and material systems to decrease the logistics foot print and employment time for the transfer of liquid logistics in the theater. This vital equipment enables the Army to achieve its mission by providing the Army with the means to be highly mobile and self-sustaining in very hostile theaters of operations. Future Force operations demand that combat systems be rapidly deployable to the theater, rapidly emplaced upon arrival, and rapidly relocated to support a fast moving non-linear battlefield.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2012	FY 2013	FY 2014
Title: Water Systems Capability Improvements	0.265	0.250	0.268
Articles:	0	0	
Description: Funding is provided for the following effort			
FY 2012 Accomplishments: Evaluate improved Tactical Water Purification Systems (TWPS) microfilters.			
FY 2013 Plans: Develop alternative pretreatment membranes for Tactical Water Purification Systems (TWPS) and Lightweight Water Purifier (LWP).			
FY 2014 Plans: Continue developing alternative pretreatment membranes for Tactical Water Purification Systems (TWPS) and Lightweight Water Purifier (LWP).			
Title: Expeditionary Water Packaging System (EWPS).	1.477	0.000	0.000
Articles:	0		

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>		R-1 ITEM NOMENCLATURE PE 0603804A: <i>Logistics and Engineer Equipment - Adv Dev</i>		PROJECT K41: <i>Water And Petroleum Distribution - Ad</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
Description: Funding is provided for the following effort.				
FY 2012 Accomplishments: Prepare program documentation and purchase demonstration system.				
Title: 3K Tactical Water Purification System (3K TWPS).		0.822	2.096	1.495
		Articles: 0	0	
Description: Funding is provided for the following effort				
FY 2012 Accomplishments: Perform pilot test of potential components.				
FY 2013 Plans: Fabricate full scale prototype 3K Tactical Water Purification System (TWPS).				
FY 2014 Plans: Continue fabrication and testing of full scale prototype 3K Tactical Water Purification System (TWPS).				
Title: Water Quality Monitoring.		0.200	0.000	0.000
		Articles: 0		
Description: Funding is provided for the following effort				
FY 2012 Accomplishments: Integrate and test in-line water quality analysis equipment developed under TARDEC S&T program.				
Title: Fuel System Supply Points (FSSPs)		1.000	0.360	0.500
		Articles: 0	0	
Description: Funding is provided for the following effort				
FY 2012 Accomplishments: Develop prototype common pumping assembly for use in all Fuel System Supply Points (FSSPs). Test prototype automated tank gauging for collapsible fabric tanks in FSSPs.				
FY 2013 Plans: Market investigation for family of meters for fuel dispensing systems and commercial on-board truck meters.				
FY 2014 Plans:				

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army	DATE: April 2013
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603804A: <i>Logistics and Engineer Equipment - Adv Dev</i>	PROJECT K41: <i>Water And Petroleum Distribution - Ad</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
Address the capability gap for automated gauging to capture fuel quantities in collapsible tanks in the Fuel System Supply Point (FSSP). This includes the development of a data device that will transmit and store the data internally for the system and externally to high command.			
Title: Modular Tactical Refueling System (MTRS)	0.100	0.000	0.000
Articles:	0		
Description: Funding is provided for the following effort			
FY 2012 Accomplishments: Product development of the Modular Tactical Refueling System (MTRS). Down select components and begin subassemble.			
Title: SBIR and STIR	0.126	0.000	0.000
Articles:	0		
Description: Funding is provided for the following effort.			
FY 2012 Accomplishments: SBIR and STIR			
Accomplishments/Planned Programs Subtotals	3.990	2.706	2.263

C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
• PM PAWS Project L41 654804: <i>Logistics and Engineer Equipment - Engineering Development</i>	2.012	3.839	2.650		2.650	4.186	4.106	3.789	3.817	Continuing	Continuing
• Distribution Sys Petroleum & Water: <i>Distribution Systems Petroleum & Water</i>	75.457	38.385	60.612		60.612	63.364	66.259	61.996	56.038	Continuing	Continuing

Remarks

D. Acquisition Strategy
C. Develop engineering prototypes or select Non-Developmental Item based on market surveys and proposals from industry. Competitive; sole source contracts.

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013
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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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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603804A: <i>Logistics and Engineer Equipment - Adv Dev</i>	PROJECT K41: <i>Water And Petroleum Distribution - Ad</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
SBIR/STTR	TBD	TBD:TBD	0.000	0.126		-		-		-		-	0.000	0.126	0.000
Subtotal			0.000	0.126		0.000		0.000		0.000		0.000	0.000	0.126	0.000

Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Water System Capability Improvements	Various	TBD:TBD	0.645	0.100	Feb 2012	0.100		0.100	Oct 2012	-		0.100	Continuing	Continuing	Continuing
3K Tactical Water Purification System (3K TWPS)	Various	TARDEC:Warren, MI	0.061	0.100	Feb 2012	0.596		0.600	Oct 2012	-		0.600	Continuing	Continuing	Continuing
Water Quality Monitoring	Various	TARDEC:Warren, MI	0.250	0.020	Feb 2012	-		-		-		-	Continuing	Continuing	Continuing
3K Tactical Water Purification System (3K TWPS)	Various	NFESC:Port Hueneme, CA	0.389	0.300	Feb 2012	0.600		0.395	Oct 2012	-		0.395	Continuing	Continuing	Continuing
Fuel Gauging Improvements	Various	TBD:TBD	0.424	-		0.360		0.500	Jan 2014	-		0.500	Continuing	Continuing	Continuing
Bulk Fuel Distribution	Various	TBD:TBD	0.704	0.700	Feb 2012	-		-		-		-	Continuing	Continuing	Continuing
Expeditionary Water Packaging System (EWPS)	SS/FFPLOE	TARDEC:Warren, MI	0.000	1.177	Feb 2012	-		-		-		-	Continuing	Continuing	Continuing
Modular Tactical Refueling System (MTRS)	RO	TARDEC:Warren, MI	0.000	0.100	Feb 2012	-		-		-		-	Continuing	Continuing	0.000
Subtotal			2.473	2.497		1.656		1.595		0.000		1.595			

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603804A: <i>Logistics and Engineer Equipment - Adv Dev</i>	PROJECT K41: <i>Water And Petroleum Distribution - Ad</i>
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Support (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Water System Capability Improvements	Various	TARDEC:Warren, MI	0.853	-		0.150		-		-		-	Continuing	Continuing	Continuing
3K Tactical Water Purification System (TWPS)	Various	TARDEC:Warren, MI	0.000	-		0.500		0.200	Oct 2012	-		0.200	Continuing	Continuing	Continuing
Subtotal			0.853	0.000		0.650		0.200		0.000		0.200			

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Water Systems Capability Improvements	Various	TARDEC:Warren, MI	1.016	0.165	Feb 2012	-		0.168	Oct 2012	-		0.168	Continuing	Continuing	Continuing
Water Quality Monitoring	Various	Aberdeen Proving Ground,MD:APG, MD	0.000	0.030	Feb 2012	-		-		-		-	Continuing	Continuing	Continuing
Water Quality Monitoring	Various	TARDEC:Warren, MI	0.150	0.150	Feb 2012	-		-		-		-	Continuing	Continuing	Continuing
3K Tactical Water Purification System (3K TWPS)	RO	TARDEC:Warren, MI	0.000	0.422	Feb 2012	0.400		0.300	Oct 2012	-		0.300	Continuing	Continuing	Continuing
Fuel Pumping Assembly Improvements	Various	TARDEC:Warren, MI	0.100	0.600	Feb 2012	-		-		-		-	Continuing	Continuing	Continuing
Subtotal			1.266	1.367		0.400		0.468		0.000		0.468			

	All Prior Years	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals		4.592	3.990	2.706	2.263	0.000		2.263	

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Army		DATE: April 2013
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	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Water from Air																												
Future Fuels Storage Systems																												
Small Unit Water Purifier																												
Waste Water/Water Recycle Systems																												
Battlefield Fluid Delivery System (BFDS) 50 Mile Early Entry																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603804A: <i>Logistics and Engineer Equipment - Adv Dev</i>	PROJECT K41: <i>Water And Petroleum Distribution - Ad</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Water from Air	1	2016	4	2017
Future Fuels Storage Systems	4	2016	4	2018
Small Unit Water Purifier	1	2015	4	2015
Waste Water/Water Recycle Systems	4	2017	4	2018
Battlefield Fluid Delivery System (BFDS) 50 Mile Early Entry	4	2014	4	2018

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603804A: <i>Logistics and Engineer Equipment - Adv Dev</i>	PROJECT VR8: <i>Combat Service Support Systems - Ad</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
VR8: <i>Combat Service Support Systems - Ad</i>	-	1.977	2.023	1.613	-	1.613	2.405	2.619	2.415	2.415	Continuing	Continuing
Quantity of RDT&E Articles												

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

A. Mission Description and Budget Item Justification

This project supports development of critical soldier support and sustainment systems including shelter systems (rigid and soft wall), base camp subsystems, field service systems, mortuary affairs equipment, heaters, camouflage systems to counter emerging enemy threat technologies, and other combat service support equipment. These systems will fill identified theater distribution and services capability gaps, improve unit sustainability, and increase combat effectiveness. This project supports Advanced Component Development and Prototyping of Critical tactical support systems that support mobile Joint Service command and control, medical, and maintenance platforms. This project develops critical enablers that support the Quartermaster (QM) Force Transformation Strategy and The Army's Modular Capabilities by maintaining readiness through fielding and integrating new equipment. This project also ensures Army Expeditionary Forces are capable of rapid deployment and reduces sustainment requirements, related Combat Support/Combat Service Support (CS/CSS) demands in lift, combat zone footprint, and costs for logistical support.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2012	FY 2013	FY 2014
<p>Title: Zero-Footprint Base Camp</p> <p style="text-align: right;">Articles:</p> <p>Description: Zero-Footprint Base Camp reduces the operational energy and logistics footprint of the expeditionary base camp system, with the goal being a significant reduction in fuel, water, and power requirements to sustain operations in the field. Operating a base camp such as Force Provider requires a significant amount of logistics support and also produces an enormous amount of by products, both of which cost money, human effort (that means a risk in the form of soldiers on the road), and represents a potential vulnerability.</p> <p>FY 2012 Accomplishments: Conduct Developmental Testing and Operational Testing (DT/OT) on Zero-Footprint Base Camp capabilities for Joint base camp systems in support of the Office of Secretary of Defense (OSD) Joint Expeditionary Basing Work Group initiative</p> <p>FY 2013 Plans: Conduct evaluation of integrated technologies that are transitioning for the RDECOM 6.3 programs in a realistic operating environment at the Ft Devens Base Camp Systems Integration Laboratory (SIL). Efforts are focused on proving out subsystem</p>	0.984 0	0.751 0	0.000

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>		R-1 ITEM NOMENCLATURE PE 0603804A: <i>Logistics and Engineer Equipment - Adv Dev</i>		PROJECT VR8: <i>Combat Service Support Systems - Ad</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
maturity and the potential of these technologies before transitioning into System Development and Demonstration and putting them into operational use within the Army Force Provider base camps as a Pre-Planned Product Improvements (P3I). Focus will be on evaluating technologies that will improve upon the environmental and energy efficiency performance of the base camp. Specifically: 1) Evaluation of a variety of high performance insulating materials that are light-weight, durable, and cost effective; 2) Integration and evaluation of micro-grid / smart power / renewable energy solutions that can be incorporated into the standard Army Force Provider modules; and 3) Integration and evaluation of smart and energy efficient Environmental Control Units / Heaters that will compliment improved shelter efficiencies and significantly reduce the fuel demand on base camp operations.				
Title: Net-Zero Energy Efficiency Solutions		0.490	1.050	0.885
		Articles: 0	0	
Description: Net-Zero Energy Efficiency Solutions reduce the logistics footprint of the expeditionary base camp system, with the goal being a significant reduction in fuel, water, and power requirements to sustain operations in the field. Operating a base camp such as Force Provider requires a significant amount of logistics support and also produces an enormous amount of by products, both of which cost money, human effort (that means a risk in the form of soldiers on the road), and represents a potential vulnerability.				
FY 2012 Accomplishments: Conduct evaluation on Net-Zero energy efficiency solutions for Force Provider				
FY 2013 Plans: Continue evaluation of Net-Zero energy efficiency solutions for Force Provider. In early FY 13 transition Energy Efficiency (E2) shelter kit solutions into System Development and Demonstration for Developmental Testing (DT).				
FY 2014 Plans: Conduct evaluation of integrated technologies that are transitioning for the RDECOM 6.3 programs in a realistic operating environment at the Ft Devens Base Camp Integration Laboratory (BCIL). Efforts are focused on proving out subsystem maturity and the potential of these technologies before transitioning into System Development and Demonstration and putting them into operational use within the Army Force Provider base camps as a Pre-Planned Product Improvements (P3I). Focus will be on evaluating technologies that will improve upon the environmental and energy efficiency performance of the base camp. Specifically: 1) Integration and evaluation of micro-grid / smart power / renewable energy/ power storage solutions that can be incorporated into Force Provider modules to complement the Advanced Medium-sized Mobile Power Source (AMMPS) for standard Army Force Provider modules; and 2) Integration and evaluation of energy efficient Expeditionary Rigid Wall Shelters with integrated Environmental Control Units / Heaters that will compliment improved shelter efficiencies and significantly reduce the fuel demand on base camp operations.				
Title: Modular Ballistic Protection System (MBPS)		0.441	0.222	0.378

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013		
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<p align="right">Articles:</p> <p>Description: MBPS is a lightweight, rapidly deployable and reusable ballistic protection system that can be installed in commonly used military shelters in expeditionary and remote base camps and outposts where more robust forms of ballistic protection (i.e. sandbags, concrete barriers) are not readily available or logistically feasible.</p> <p>FY 2012 Accomplishments: Conduct Developmental Testing (DT) on internal TEMPER Modular Ballistic Protection System (MBPS). Prepare documentation to support Milestone B for stand-alone variant of MBPS. Obtain Milestone B and initiate development of stand-alone version.</p> <p>FY 2013 Plans: Complete development of stand-alone variant, conduct DT on stand-alone variant, and transition to System Development and Demonstration.</p> <p>FY 2014 Plans: Complete DT for MBPS stand-alone variant and Rigid Wall Shelter panels. Transition into System Development and Demonstration.</p>		0	0	
<p>Title: Ultralightweight Camouflage Net System (ULCANS)</p> <p>Description: ULCANS is durable, robust, snag resistant state of the art camouflage system that provides increased survivability against multi-spectral visual, infrared and radar threats, thermal signature suppression and significant thermal/solar reduction capability. ULCANS utilizes a snag-free design and is capable of use in all types of weather and climatic conditions except in heavy snow and in winds greater than 46 MPH. ULCANS Desert Radar Scattering, Desert Radar Transparent, Woodland Radar Scattering, and Woodland Radar Transparent Variants are integrated systems that are very lightweight, easily deployable, versatile, user friendly and tailored to the equipment meeting the requirements of operations for combat systems, command and control equipment, logistic support sites, tactical facilities, and fixed facilities for mobile systems. RDT&E funding supports formal development of new ULCANS variants (snow, urban, aviation, 2 sided system) and necessary technology/signature enhancements for current ULCANS variants.</p> <p>FY 2014 Plans: Prepare documentation to obtain Milestone B decision approval, conduct contract planning and execution, and initiate development for ULCANS technology enhancements/new variants.</p>		0.000	0.000	0.350
<p>Title: SBIR+STTR</p> <p>Description: SBIR+STTR</p>		0.062 0	0.000	0.000

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603804A: <i>Logistics and Engineer Equipment - Adv Dev</i>	PROJECT VR8: <i>Combat Service Support Systems - Ad</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
FY 2012 Accomplishments: SBIR+STTR			
Accomplishments/Planned Programs Subtotals	1.977	2.023	1.613

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u> <u>Base</u>	<u>FY 2014</u> <u>OCO</u>	<u>FY 2014</u> <u>Total</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• RDT&E 643804.K39: <i>Field Sustainment Support AD</i>	2.857	2.970	2.161		2.161	3.061	3.434	2.727	2.801	Continuing	Continuing
• RDT&E 654804.L39: <i>Field Sustainment Support ED</i>	4.094	2.550	1.789		1.789	2.753	2.588	2.269	2.456	Continuing	Continuing
• RDT&E 654804.VR7: <i>Combat Service Support Systems</i>	2.465	1.745	1.193		1.193	1.965	2.054	1.915	1.915	Continuing	Continuing
• OPA M80200: <i>Force Provider</i>	68.000									0.000	68.000

Remarks

D. Acquisition Strategy

Accelerate Base Camp efficiency and safety initiatives to incorporate in deployed camps and/or incorporate during reset of equipment.

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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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603804A: <i>Logistics and Engineer Equipment - Adv Dev</i>	PROJECT VR8: <i>Combat Service Support Systems - Ad</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Project Management Support	Various	PM Force Sustainment Systems:Natick, MA	0.000	0.203		0.199		0.185		-		0.185	Continuing	Continuing	0.000
SBIR+STTR	TBD	various:Various	0.000	0.062		-		-		-		-	0.000	0.062	0.000
Subtotal			0.000	0.265		0.199		0.185		0.000		0.185			0.000

Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Soldier Support Equipment	Various	Various:Various	0.000	0.780		0.920		0.578		-		0.578	Continuing	Continuing	0.000
Subtotal			0.000	0.780		0.920		0.578		0.000		0.578			0.000

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Soldier Support Equipment	Various	Various:Various	0.000	0.932		0.904		0.850		-		0.850	Continuing	Continuing	0.000
Subtotal			0.000	0.932		0.904		0.850		0.000		0.850			0.000

	All Prior Years	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals		0.000	1.977	2.023	1.613	0.000		1.613	0.000

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603804A: <i>Logistics and Engineer Equipment - Adv Dev</i>	PROJECT VR8: <i>Combat Service Support Systems - Ad</i>
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	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Obtain Milestone B on Mobile Integrated Shop Shelter System																												
Conduct DT/OT on Mobile Integrated Shop Shelter System																												
Obtain MS B on SoS Base Camp Efficiency & Environ (E2) project																												
Conduct DT on SoS Base Camp Efficiency & Environ(E2) project																												
Obtain Milestone B on Advanced Mortuary Affairs Systems																												
Execute technology improvements to ULCANS variants and conduct DT/OT																												
Obtain Milestone B on MBPS																												
Conduct DT/OT on MBPS																												
Obtain Milestone B on ULCANS																												
Conduct DV on Force Provider Renewable Energy Kit																												
Conduct DT/OT on Microgrid Loadshedding Kit for Force Provider																												
Conduct DT/OT on Force Provider Renewable Energy Kits																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Army		DATE: April 2013
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Obtain Milestone B on Mobile Integrated Shop Shelter System	2	2015	2	2015
Conduct DT/OT on Mobile Integrated Shop Shelter System	1	2016	4	2016
Obtain MS B on SoS Base Camp Efficiency & Environ (E2) project	2	2014	2	2014
Conduct DT on SoS Base Camp Efficiency & Environ(E2) project	1	2015	2	2016
Obtain Milestone B on Advanced Mortuary Affairs Systems	2	2018	2	2018
Execute technology improvements to ULCANS variants and conduct DT/OT	3	2014	4	2018
Obtain Milestone B on MBPS	4	2013	4	2013
Conduct DT/OT on MBPS	2	2014	4	2014
Obtain Milestone B on ULCANS	2	2014	2	2014
Conduct DV on Force Provider Renewable Energy Kit	3	2017	4	2017
Conduct DT/OT on Microgrid Loadshedding Kit for Force Provider	3	2017	1	2018
Conduct DT/OT on Force Provider Renewable Energy Kits	1	2018	4	2018