

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY

4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE

0603□04A - Logistics and Engineer Equipment - Adv Dev

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	12212	15993	13375	12878	12499	13064	18869	18892	0	129243
526 MARINE ORIEN LOG EQ AD	4469	284	2992	3052	3056	3056	3054	3052	0	29458
G11 ADV ELEC ENERGY CON AD	1409	1449	1846	1980	2158	2353	1130	1138	0	14944
G14 MATERIALS HANDLING EQUIPMENT - AD	185	0	199	202	204	208	203	203	0	993
K39 FIELD SUSTAINMENT SUPPORT AD	5701	10435	5026	3217	3467	3921	11092	11083	0	53942
K41 WATER AND PETROLEUM DISTRIBUTION - AD	448	3825	3312	4427	3614	3526	3390	3416	0	29906

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 and batteries, 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.

Note: HQ DA is pursuing reprogramming of \$6.2m from 643804.K39 to the correct APE/Projects (\$1.7m to 654804.L39 and \$4.5m to 654804.L46).

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<u>B. Program Change Summary</u>	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY 2005)	10485	16822	17608
Current Budget (FY 2006/2007 PB)	15993	13375	12878
Total Adjustments	5508	-3447	-4730
Net of Program/Database Changes			
Congressional Program Reductions	-238		
Congressional Rescissions			
Congressional Increases	6200		
Reprogrammings			
SBIR/STTR Transfer	-454		
Adjustments to Budget Years		-3447	-4730

Explanation of changes: FY06/07 reductions support other higher Army requirements.

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COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
526 MARINE ORIEN LOG EQ AD	4469	284	2992	3052	3056	3056	3054	3052	0	29458

A. Mission Description and Budget Item Justification: This project supports advanced component development and prototype equipment for the Army's Logistics-Over-The-Shore (LOTS) missions. Among this equipment is the Joint High Speed Vessel (JHSV). The JHSV will operate at speeds up to four times greater than the current Logistics Support Vessels (LSVs) fleet. These capabilities will provide the Army with operational maneuver from standoff distances; by-passing of land-based chokepoints, and will reduce the logistics footprint in the Area of Responsibility. This ability to transport both troops and their equipment, and to provide an Enroute Mission Planning and Rehearsal System, does not exist today. Funds in the out years support other watercraft efforts.

The evolutionary acquisition features the current lease of two commercial fast ferries, the High Speed Vessel (HSV-X1) and the Theater Support Vessel (TSV-1X) for Advanced Concept Technology Demonstration (ACTD) purposes.

This project also supports the Harbormaster Command and Control Center (HCCC). The HCCC program will provide for safe and effective management of Army and Joint Port Operations during deployment of forces; both under LOTS conditions and operations in existing port facilities.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
HCCC Prototype design	0	0	500	0
FY05-FY07: Continue support for TSV advanced development to include programmatic documentation (i.e. TEMP, threat assessment, acquisition strategy, etc.)	4469	284	2492	3052
Totals	4469	284	2992	3052

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B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
RDTE, 0604804A, 461, Marine Oriented Logistics, Engineering	59127	62641	0	0	0	0	0	0	Continuing	Continuing
OPA 3, M11203, Theatre Support Vessel(TSV)	0	996	15000	15361	299351	301615	154195	154356	Continuing	Continuing

C. Acquisition Strategy: TSV technical efforts will be conducted primarily with the Naval Surface Warfare Center (NSWC). NSWC can provide both in-house and contract resources (based on workload and expertise). The Acquisition Strategy calls for evolutionary/spiral development of commercial based technology with military adaptations. A new acquisition strategy is under-way. A TSV Memorandum of Agreement between the Army, Navy, and Marine Corps has been signed to form a Navy-led Joint Program Office (JPO) and integrate Army, Navy and Marine Corps requirements.

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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . TSV Studies/Development	PWD	Naval Underwater Warfare Center, Newport, R.I.	3286	0		0		0		Continue	3286	0
b . TSV - composite prototype hull design	MIPR	Naval Underwater Warfare Center, Newport, R.I.	4211	0		0		0		0	4211	0
c . HCCC Prototype Design	PWD	TBD	0	0		500	1-2Q	0		0	500	0
Subtotal:			7497	0		500		0		Continue	7997	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . TSV/Matrix Support	MIPR	TACOM CBU, Warren, MI	4266	0		186	1-2Q	186	1-2Q	Continue	4638	0
b . TSV Matrix Support	MIPR	TACOM, LCCE	0	0		0		0		0	0	0
c . TSV Matrix Support	MIPR	TACOM, Legal, Warren, MI	0	0		33	1-2Q	33	1-2Q	0	66	0
d . TSV - composite prototype hull design	MIPR	CASCOM, Ft. Lee, VA	5240	0		0		0		Continue	5240	0
e . TSV/Matrix Support	MIPR	TARDEC, Warren, MI/ICI	170	0		0		0		0	170	0

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II. Support Cost (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
f . TSV/In-house	MIPR	PM Force Projection, Warren, MI	2190	0		0		0		Continue	2190	0
g . TSV/Matirx	MIPR	TACOM Acquisition Center, Warren, MI	0	0		186	1-2Q	186	1-2Q	0	372	0
h . TSV - composite prototype hull design	MIPR	USAEC, Ft. Eustis, VA	100	0		0		0		0	100	0
Subtotal:			11966	0		405		405		Continue	12776	0

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . TSV	MIPR	DTC/A TEC, MD	1071	0		95	1-2Q	95	1-2Q	Continue	1261	0
b . Harbormaster Command and Control Center (HCCC	MIPR	USATCFE, Ft. Eustis, VA	100	0		0		0		0	100	0
c . TSV	MIPR	PM WIN-T	1500	0		0		0		0	1500	0
Subtotal:			2671	0		95		95		Continue	2861	0

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IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . TSV/In-house	MIPR	PM Force Projection, TACOM, Warren, MI	510	284		1992	1Q	2552	1-2Q	0	5338	0
Subtotal:			510	284		1992		2552		0	5338	0
Project Total Cost:			22644	284		2992		3052		Continue	28972	0

Schedule Profile (R4 Exhibit)

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Event Name	FY 04				FY 05				FY 06				FY 0□				FY 0□				FY 0□				FY 10				FY 11			
	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	1	2	3	4
HSV-X1- Lease-Joint Venture	Last Option: 1st-4th qtr FY06																															
TSV-1X - Lease Spearhead - Army	Awarded Sep 02																															

Schedule Detail (R4a Exhibit)

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<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
High Speed Vessel Lease (HSV X1, Joint Venture)	1-4Q	1-4Q	1-4Q					
Theatre Support Vessel Lease (Spearhead Vessel)	1-4Q	1-4Q	1Q					

TSV: Congressional guidance in the FY05 Appropriations Act has recommended a need for a revised acquisition strategy, now on going.

HSV X1: Current lease is funded through FY04 and expires first quarter FY05.

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PROJECT
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COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
G11 ADV ELEC ENERGY CON AD	1409	1449	1846	1980	2158	2353	1130	1138	0	14944

A. Mission Description and Budget Item Justification: The Mobile Electric Power (MEP) program was established by the Department of Defense to develop a Modernized, Standard Family of Mobile Electric Power Sources for all Services throughout the Department of Defense. This project provides concept and technology development that will improve the performance, mobility, readiness and survivability of the next generation power sources in support of the Army. It support initiatives that are essential to the development and fielding to modernized Mobile Electric Power (MEP) sources from 0.5 KW to 920 KW that comply with environmental statutes and provide lower noise, improved fuel and electrical efficiency, significantly reduced weight, enhanced portability, improved reliability, and maintainability.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Investigated availability of commercial technology and components to be used for development of a new intelligent Power Management Distribution System (PMDS) and continue hardware test and evaluation.	100	0	0	0
Test and assess commercially available components for Small Tactical Electric Power (STEP)/market survey	1309	0	0	0
Develop STEP proof of principle prototypes/test technologies	0	1449	0	0
Continue STEP proof of principle prototype development	0	0	1846	0
Test STEP proof of principle prototype and transition to System Development and Demonstration	0	0	0	1880
Initiate Large Advanced Mobile Power Sources (LAMPS) Program/components	0	0	0	100
Totals	1409	1449	1846	1980

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B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
RDT&E:PE0604804A, 194 Engine Driven Generators	7017	5241	6735	10100	3809	4387	1683	1689	Continuing	Continuing
OPA 3, Generators and Associated Eq.	71645	57175	43067	33516	34284	28550	24716	25946	Continuing	Continuing

MA9800

C. Acquisition Strategy: Complete advanced development and transition to system development and demonstration phase (Milestone B) and subsequent transition to production (Milestone C).

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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . STEP Components	MIPR	CECOM - Belvoir	971	0		0		0		0	971	0
b . STEP Prototypes	MIPR	CECOM - Belvoir	0	880	1Q	1275	2Q	790	2Q	0	2945	0
c . LAMPS Components	MIPR	CECOM - Belvoir	0	0		0		100	2Q	Continue	Continue	0
Subtotal:			971	880		1275		890		Continue	Continue	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . STEP Components	MIPR	CECOM-Belvoir	670	0		0		0		0	670	0
b . PMDS Components	MIPR	CECOM-Belvoir	80	0		0		0		0	80	0
c . STEP Prototypes	MIPR	CECOM-Belvoir	0	400	1Q	271	1Q	200	1Q	0	871	0
Subtotal:			750	400		271		200		0	1621	0

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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . STEP Components	MIPR	CECOM-Belvoir	748	42	1Q	0		0		0	790	0
b . PMDS Components	MIPR	CECOM-Belvoir	60	0		0		0		0	60	0
c . STEP Prototypes	MIPR	CECOM-Belvoir	0	0		150	2Q	740	2Q	0	890	0
Subtotal:			808	42		150		740		0	1740	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . STEP Components	In-house	PEO In-house	301	0		0		0		0	301	0
b . STEP Prototypes	In-House	PEO In-house	0	127	1Q	150	1Q	150	1Q	0	427	0
Subtotal:			301	127		150		150		0	728	0

Project Total Cost:			2830	1449		1846		1980		Continue	Continue	0
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Schedule Profile (R4 Exhibit)

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Event Name	FY 04				FY 05				FY 06				FY 0□				FY 0□				FY 0□				FY 10				FY 11																															
	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	1	2	3	4																												
STEP Program																																																												
(1) Test and Assess Commercially Available Components, (2) Develop Proof of Principle Prototype (Comm. Components), (3) Complete Proof of Principle Prototype																													▲1	▲2	▲3																													
(4) Initiate Test and Evaluation, (5) Complete Test and Evaluation																																					▲4	▲5																						
(6) Transfer to System Development & Demonstration																																									▲6																			
PMDS Program																																																												
(7) Initiate Testing of Components																																																									▲7			
LAMPS Program																																																												
(8) Initiate LAMPS Program																																									▲8																			
(9) Complete Engineering Assessment and Component Market Survey, (10) Test and Assess Commercial Components, (11) Continue Prototype Development, (12) Test & Assess Prototypes																																													▲9	▲10			▲11				▲12							

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<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Initiate testing of the PMDS components	1Q							
Test and assess commercially available STEP components	1Q							
Develop STEP proof of principle prototype using best available commercial components		1Q						
Complete STEP proof of principle prototypes			2Q					
Initiate test and evaluation of STEP proof of principle prototypes			3Q					
Complete test and evaluation of STEP proof of principle prototypes/performance spec				2Q				
Transfer STEP program to System Development and Demonstration				2Q				
Initiate Large Advanced Mobile Power Sources (LAMPS) Program				2Q				
Complete engineering assessment and component market surveys for LAMPS					2Q			
Test and assess commercially available components for LAMPS						1Q		
Continue LAMPS prototypes							1Q	
Test and assess LAMPS prototypes								1Q

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COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
K39 FIELD SUSTAINMENT SUPPORT AD	5701	10435	5026	3217	3467	3921	11092	11083	0	53942

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, environmental control units 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 that provide improved safety and accuracy while increasing survivability of aircraft, personnel, and equipment. The project supports the development of tactical environmental control systems that support mobile, joint service platforms for vehicle-mounted command and control systems, medical care capabilities and high tech maintenance shelters and vans. 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 by reducing sustainment requirements, related Combat Support/Combat Service Support (CS/CSS) demands in lift, combat zone footprint, and costs for logistical support .

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
FY 04: Completed Operational Testing (OT) of Low Cost Container for Low Cost Aerial Delivery System (LCADS). Completed Design Validation (DV) of High Velocity parachute. Conducted Developmental Testing (DT) of High Velocity parachute. FY 05: Conduct DV of Low Velocity parachute. Obtain Milestone C for Low Cost Container. Complete OT for High Velocity parachute. Obtain Milestone C for High Velocity parachute. Start and complete Developmental Testing (DT) for Low Velocity parachute. Initiate OT for Low Velocity parachute. FY 06: Complete OT for Low Velocity parachute. Obtain Milestone C for Low Velocity parachute.	1890	911	350	0
FY 04: Procured, designed and fabricated 60k British Thermal Unit (BTU) Space Heater Convective (SHC) test prototypes to support development and reliability testing. Transitioned 60k SHC into System Development and Demonstration (SDD).	854	0	0	0

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Accomplishments/Planned Program (continued)

	FY 2004	FY 2005	FY 2006	FY 2007
FY 04: Conducted market survey, prepared SDD contract solicitation and developed Milestone B documentation for the 60k British Thermal Unit (BTU) Improved Environmental Control Unit (IECU). Completed development of integrated environmental control solution to fill critical capability gap within Stryker Brigade Combat Team (SBCT) Tactical Operations Centers. FY 05: Obtain 60k BTU IECU Milestone B decision, award System Design and Development (SDD) contract, fabricate test prototypes. FY 06: Conduct Production Qualification Testing (PQT) for the 60k IECU. FY 07: Obtain Milestone C production decision for 60k IECU. Obtain Milestone B decision, award SDD contract and fabricate test systems for 9, 18, 36k BTU IECUs.	1570	474	339	1217
FY 04: Conducted technical feasibility testing of two candidate Joint Precision Aerial Delivery System 2k (JPADS-2k) technologies. Supported Multi National Forces - Iraq (MNF-I) Urgent Operational Need Statement (UONS) to provide JPADS 2k. FY 05: Conclude technical feasibility testing of JPADS 2k. PM will leverage real operational data obtained from deployment of JPADS 2k in Operation Iraqi Freedom (OIF). Obtain Milestone B for JPADS 2k. Prepare Request for Procurement (RFP) and execute Source Selection process for JPADS 2k. Support JPADS 10k Advanced Concept Technology Demonstration (ACTD) program. FY 06: Obtain Milestone B for JPADS 10k. Conduct technical feasibility testing of candidate JPADS 10k technologies. Procure test prototypes and start and complete DV of JPADS 2k. Transition 2k to System Development and Demonstration. FY 07: Prepare RFP and execute Source Selection process for JPADS 10k. Start and complete DV of JPADS 10k.	1387	1550	4337	2000
FY 05: Award contract for design and development of Mobile Integrated Remains Collection System (MIRCS).	0	1300	0	0
FY 05: Funds currently on withhold. DA plan is to reprogram to L39 (Field Sustainment Support ED).	0	1700	0	0
FY 05: Funds currently on withhold. DA plan is to reprogram to L46 (Maintenance Support Equipment)	0	4500	0	0
Totals	5701	10435	5026	3217

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B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
OPA3, MF9000 Control Unit, Environmental	20717	17486	3420	5766	6090	4867	4174	4178	Continuing	Continuing

C. Acquisition Strategy: Accelerate Joint Precision Aerial Delivery System (JPADS) product development and testing to transition to System Development & Demonstration and/or Production.

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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Soldier Support Equipment	In-House	PM Force Sustainment Sys (FSS), Natick	1020	535	1-4Q	776	1-4Q	495	1-4Q	Continue	2826	0
b . Soldier Support Equipment	In-house	CECOM, Ft Belvoir	420	259	1-4Q	278	1-4Q	175	1-4Q	Continue	1132	0
c . Soldier Support Equipment	Contracts	Various	3260	1299	1-2Q	1666	1-4Q	1097	1-4Q	Continue	7322	0
Subtotal:			4700	2093		2720		1767		Continue	11280	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Soldier Support Equipment	MIPR	DTC, MD and ATC, MD	200	172	1-4Q	185	1-4Q	116	1-4Q	Continue	673	0
b . Soldier Support Equipment	MIPR	Yuma Proving Ground, AZ	1500	1830	1-4Q	1966	1-4Q	1234	1-4Q	Continue	6530	0
Subtotal:			1700	2002		2151		1350		Continue	7203	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Project Management Support	In-House	PM Force Sustainment Sys (FSS), Natick	180	140	1-4Q	155	1-4Q	100	1-4Q	Continue	575	0
b . Reprogram Actions			0	6200		0		0		0	6200	0
Subtotal:			180	6340		155		100		Continue	6775	0

Project Total Cost:			6580	10435		5026		3217		Continue	25258	0
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Schedule Profile (R4 Exhibit)

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BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603□04A - Logistics and Engineer Equipment - Adv Dev

PROJECT
K3□

Event Name	FY 04				FY 05				FY 06				FY 0□				FY 0□				FY 0□				FY 10				FY 11			
	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	1	2	3	4
(1) MS B for IECU 60K, (2) MS B for JPADS 2K, (3) MS B for JPADS 10K, (4) MS B for IECU 9, 18, 36K, (5) MS B for JPADS 30 K						▲1		▲2			▲3				▲4					▲5												
(6) MS C on LCADS Low Cost Container, (7) MS C on LCADS HV parachute, (8) MS C on LCADS LV parachute, (9) MS C for IECU 60K, (10) MS C for IECU 9, 18, 36K						▲6		▲			▲				▲					▲10												
Conduct DV on LCADS LV parachute																																
OT for LCADS Container																																
DT/OT on LCADS HV Parachute																																
DT/OT on LCADS LV parachute																																
(11) Conduct Initial Evaluation of Operational Suitability for IECU 60K																																
Conduct PQT for IECU 60K																																
DT/OT on IECU 9, 18, 36K																																
DT on JPADS 30K																																
OT on JPADS 30K																																

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<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Conducted Operational Testing on LCADS low cost container.	1-3Q							
Conduct Milestone C decision on LCADS low cost container.		1Q						
Conducted DT on LCADS High Velocity (HV) parachute.	2-4Q							
Conduct OT on LCADS HV parachute.		1-2Q						
Conducted Design Validation (DV) on LCADS Low Velocity (LV) parachute.		1-2Q						
Receive Milestone C decision on LCADS HV parachute.		3Q						
Conduct DT on LCADS LV parachute.		3-4Q						
Conduct OT on LCADS LV parachute.		4Q	1Q					
Receive Milestone C decision on LCADS LV parachute.			2Q					
Obtain Milestone B decision for Joint Precision Aerial Delivery System 2k (JPADS) .		4Q						
Obtain Milestone B decision for JPADS 10k.			1Q					
Conduct DV on JPADS 10k.				3-4Q				
Obtain Milestone B for JPADS for 30k.					3Q			
Conduct DT on JPADS 30k.							1-2Q	
Conduct OT on JPADS 30k.								1-2Q
Conduct Initial Evaluation of Operational Suitability for IECU 60k.	2Q							
Obtain Milestone B for IECU 60k.		2Q						
Conduct Production Qualification Testing for IECU 60k.			3-4Q					
Obtain Milestone C for IECU 60k.				2Q				
Obtain Milestone B for IECU 9, 18, 36k.				2Q				
Conduct DT/OT on IECU 9, 18, 36k.					1-3Q			
Obtain Milestone C for IECU 9, 18, 36k.						3Q		

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

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0603□04A - Logistics and Engineer Equipment - Adv Dev

PROJECT
K41

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
K41 WATER AND PETROLEUM DISTRIBUTION - AD	448	3825	3312	4427	3614	3526	3390	3416	0	29906

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 and lubrication 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 theatre (this includes the water from exhaust); and material and systems to decrease the logistics foot print and employment time for the transfer of liquid logistics in the theatre. The Army fights with clean fuel and drinking water. This vital equipment enables the Army to achieve its transformation vision by providing the Army with the means to be highly mobile and self-sustaining in very hostile theaters of operations.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
FY04-FY07: Completed Pre-Planned Product Improvements (P3I) to evaluate water purification components as improvements to the Lightweight Water Purifier (LWP), Tactical Water Purification System (TWPS).	177	293	1051	816
FY05-FY07: Initiate Develop improved water quality analysis equipment for LWP and TWPS.	0	964	261	250
FY04-FY07: Continued development of Advanced Petroleum Test Kit (PTK) and initiate performance testing.	194	1368	800	237
FY05: Conduct Production Qualification Testing (PQT) for the Camel	0	1200	0	0
FY06-FY07: Design, Development, Prototypes, and Testing of Versatile Tank And Pump Unit (VTPU)	0	0	400	2024
FY06-07 Initiate Water Packaging System Contract Award for prototype fabrication	0	0	800	1100
FY04: Rapidly Installed Fluid Transfer System (RIFTS), Continue development	77	0	0	0
Totals	448	3825	3312	4427

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

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B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
RDTE, 0604804.L41, Logistics and Engineer Equipment - Engineering Development	1613	8021	2187	7078	3578	3646	3607	3635	Continuing	Continuing
OPA 3, R05600, Water Purification Systems	0	12532	8888	7570	7584	7592	7599	2601	Continuing	Continuing
OPA 3, R02106, Mission Modules - Water Distribution System Module	3688	262	600	7819	3116	38254	40498	35033	Continuing	Continuing
OPA 3, MA6000, Distribution Systems, Petroleum & Water	36542	37944	66055	66320	93964	136339	137832	132762	Continuing	Continuing
OPA 3, MA4501, Modification Kits	40494	7410	9280	25241	19212	13091	26237	23442	Continuing	Continuing

C. Acquisition Strategy: Develop engineering prototypes or select Non-Developmental Item based on market surveys and proposals from industry.

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Water Purification Components (P3I)	MIPR	NFESC, Port Hueneme, CA	0	0		350	1Q	333	1Q	Continue	683	Continue
b . Water Purification Components (P3I)	Purchase Orders	TBD	182	0		250	1Q	233	1-4Q	Continue	665	Continue
c . Water Purification Components (P3I)	In-House	TARDEC, Warren, MI	408	0		100	1Q	50	1Q	Continue	558	0
d . Water Purification Components (P3I)	Task Order Contract	ICI, Dayton, OH	0	0		100	2Q	50	2Q	Continue	150	0
e . Advanced Petroleum Test Kit	In-House	TARDEC, Warren, MI	458	379	1Q	100	1Q	100	1Q	Continue	1037	Continue
f . Advanced Petroleum Test Kit	CPFF	TBD	0	100	2Q	260	1Q	0		Continue	360	Continue
g . Water Analysis for TWPS/LWP	In-House	TARDEC, Warren, MI	0	250	1Q	100	1Q	100	1Q	Continue	450	0
h . Water Analysis for TWPS/LWP	Purchase Order	TBD	0	350	2Q	100	2Q	100	2-4Q	Continue	550	0
i . Water from Engine Exhaust	CPFF	Lexcarb, Lexington KY	250	0		0		0		0	250	0

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

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0603□04A - Logistics and Engineer Equipment - Adv Dev

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I. Product Development (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
j . FSSP (P3I)			151	0		0		0		0	151	0
k . Versatile Tank and Pump Unit (VPTU)	Contract - Task Order	ICI, Dayton, Ohio	0	0		250	1Q	0		Continue	250	0
l . Versatile Tank and Pump Unit (VPTU)	In House	TARDEC, Warren, MI	0	0		50	1Q	100	1Q	Continue	150	0
m . Versatile Tank and Pump Unit (VPTU)	TBD		0	0		0		1424	1Q	Continue	1424	0
n . Packaged Water System	Contact - CPFF	TBS	0	0		600	3Q	900	3Q	Continue	1500	0
o . Rapidly Installed Fluid Transfer System (RIFTS)			77	0		0		0		0	77	0
Subtotal:			1526	1079		2260		3390		Continue	8255	Continue

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II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Water Purification Components (P3I)	In-House	TARDEC, Warren, MI	100	200	1Q	100	1Q	0		Continue	400	Continue
b . Advanced petroleum test kit	In-House	TACOM, Warren, MI	65	25	1Q	50	1Q	25	1Q	Continue	165	Continue
c . Water Analysis for TWPS/LWP	In-House	TARDEC, Warren, MI	0	200	1Q	0		0		0	200	0
d . Versatile Tank and Pump Unit (VPTU)	In-House	TARDEC, Warren, MI	0	0		25	1Q	50	1Q	Continue	75	0
e . Packaged Water System	In-House	TARDEC, Warren, MI	0	0		200	1Q	200	1Q	Continue	400	0
Subtotal:			165	425		375		275		Continue	1240	Continue

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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Water Purification Components (P3I)	In House	TARDEC, Warren, MI	379	93	1Q	151	1Q	150	1-3Q	Continue	773	Continue
b . Advanced Petroleum Test Kit	MIPR	ATEC, Aberdeen Proving Ground	0	0		350	1Q	52	1Q	0	402	0
c . Advanced Petroleum Test Kit	In-house	TARDEC, Warren, MI	65	839	1Q	15	1Q	10	1Q	Continue	929	Continue
d . Water Analysis for TWPS/LWP	In House	TARDEC, Warren, MI	0	85	1Q	0		0		0	85	0
e . Water Analysis for TWPS/LWP	MIPR	CHPPM	0	79	1Q	61	1Q	50	1Q	Continue	190	0
f . Versatile Tank and Pump Unit (VPTU)	MIPR	ATEC, Aberdeen Proving Ground, MD	0	0		0		400	3Q	Continue	400	0
g . Camel	MIPR	ATC, Aberdeen Proving, Ground, MD	0	1200	1-2Q	0		0		0	1200	0
Subtotal:			444	2296		577		662		Continue	3979	Continue

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IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Advanced Petroleum Test Kit	In-House	TACOM, Warren, MI	70	25	1Q	25	1Q	50	1Q	Continue	170	0
b . Versatile Tank and Pump Unit (VPTU)	Contract - Task Order	ICI, Dayton, OH	0	0		75	3Q	0		Continue	75	0
c . Versatile Tank and Pump Unit (VPTU)	In-House	TACOM, Warren, MI	0	0		0		50	1Q	Continue	50	0
Subtotal:			70	25		100		100		Continue	295	0
Project Total Cost:			2205	3825		3312		4427		Continue	13769	Continue

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Event Name	FY 04				FY 05				FY 06				FY 0□				FY 0□				FY 0□				FY 10				FY 11			
	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	1	2	3	4
P3I - for Hardware for the LWP/TWPS	Evaluate commercially available water purification to LWP/TWPS																															
Develop Improved Water Quality Analysis Equip for Water Systems	Water Quality Analysis Equipment																															
Develop Petroleum Test Kit (PTK) Technical Requirements, Design, and Test	Petroleum Test Kits																															
PQT&E - Camel	Camel PQT																															
Design and Develop Versatile Tank and Pump Unit (VPTU)	Design and Develop VPTU																															
Develop Water Packaging System	Develop Water Packaging System																															

Schedule Detail (R4a Exhibit)

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<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
(P3I) Evaluate commercially available water purification components as improvements to LWP & TWPS.	1-4Q	2-3Q						
Develop improved Water Quality Analysis Equipment for LWP and TWPS		1-4Q	1-4Q	1-4Q				
Develop technical requirements, design, and test of Advanced Petroleum Test Kits.	1-4Q	1-4Q	1-4Q	1-4Q				
Camel Testing	4Q	1-4Q						
Design and Development of Versatile Tank and Pump Unit (VPTU)			1-4Q	1-4Q	1-4Q			
Develop Water Packaging System		1-4Q	1-4Q	1-4Q	1-4Q	1-4Q		