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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

May 2009

BUDGET ACTIVITY		PE NUMBER AND TITLE			
5 - System Development and Demonstration		0604710A - Night Vision Systems - Eng Dev			
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	48826	116037	55410	Continuing	Continuing
L67 SOLDIER NIGHT VISION DEVICES	15750	30014	24637	Continuing	Continuing
L70 NIGHT VISION DEV ED	14831	75846	7736	Continuing	Continuing
L75 Profiler			5432	Continuing	Continuing
L76 Dismounted Fire Support Laser Targeting Systems	18245	10177	17605	Continuing	Continuing

A. Mission Description and Budget Item Justification: This program element provides night vision/reconnaissance, surveillance and target acquisition technologies required for U. S. defense forces to engage enemy forces twenty-four hours a day under conditions of degraded visibility due to darkness, adverse weather, battlefield obscurants, foliage and man-made structures. These developments and improvements to high performance night vision electro-optics, radar, laser, and thermal systems and integration of related multi-sensor suites will enable near to long range target acquisition, identification and engagement to include significant fratricide reduction, which will improve battlefield command and control in "around-the-clock" combat operations.

Project L67 focuses on night vision electro-optical, laser, and other target identification and location equipment for a variety of Future Combat System of Systems (FCS) Units of Action/Employment and Future Force soldiers. This project includes the enhanced night vision goggle, modular HTI multi-function laser activities, and thermal upgrades to include an uncooled medium thermal weapon sight.

Project L70 focuses on night vision, reconnaissance, surveillance and target acquisition (RSTA) sensor and suites of sensors to provide well-defined surveillance and targeting capabilities for a variety of Current, Modular, Future Combat System of Systems (FCS) and Future Force platforms. This project includes: System Development and Demonstration of the Thermal Imaging Engine (transitioned from an Advanced Technology Objective); night vision sensor acquisition support of FCS Unattended Ground Sensors and ASTAMIDS; development of a Standard Ground Station for Persistent Surveillance Sensors (RAID and PTDS). Future activity initiates Gunshot Detection and Persistent Surveillance System (PSS)/Rapid Aerostat Initial Deployment (RAID) program of record (PORs).

Project 75 focuses on development of Profiler Block II enhanced capabilities for meteorological measurement sensors and data. Improvements will reduce the footprint (less soldiers/vehicles) and complexity of the system, improve performance (accuracy), improve survivability, connectivity, no balloon sensor, multiple initialization data, terrain visualization and on-the-move capability. The improved MET message data will increase lethality by enabling artillery a greater probability of first round hit with indirect fire systems.

Project L76 focuses on the engineering development of technologies for insertion into Laser Target Locators and Laser Designators to improve overall performance of those systems and reduce weight. Technologies developed under this project will benefit the Lightweight Laser Designator Rangefinder (LLDR, AN/PED-1), the Mark VII-E Laser Target Locator, and future programs based on emerging Army requirements. Advanced, cooled, infrared imaging focal plane arrays are now available which, when applied to LLDR, will provide much greater range performance in a package of similar size. With an associated optical redesign, greater LLDR imaging performance can be achieved with

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

May 2009

BUDGET ACTIVITY

PE NUMBER AND TITLE

5 - System Development and Demonstration

0604710A - Night Vision Systems - Eng Dev

an overall reduction in weight. This project will also integrate the next generation uncooled, 17 micron pixel-pitch FLIRs being developed for the Thermal Weapon Sight program into the Mark VII-E/LTLM, improving its imaging performance with no impact on its weight. New laser designator technology has been developed which will reduce laser designator weight by close to 50% and cut battery usage by a factor of 10. Further reductions can be gained by reducing laser designator output energy levels below currently accepted standards, which initial modeling and testing indicate will not compromise performance of laser guided munitions. A primary focus of this project will be to perform sufficient live-fire and captive-carry range tests over a wide variety of environmental conditions with all current and future laser guided munitions to build the necessary confidence that reduced designator energy levels will not adversely impact the mission. In addition, this line will support improved accuracy (reduced target location error) in support of coordinate seeking weapons, such as JDAM and Excalibur.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604710A - Night Vision Systems - Eng Dev
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<u>B. Program Change Summary</u>	FY 2008	FY 2009	FY 2010
Previous President's Budget (FY 2009)	47317	44508	37892
Current BES/President's Budget (FY 2010)	48826	116037	55410
Total Adjustments	1509	71529	17518
Congressional Program Reductions		-171	
Congressional Rescissions			
Congressional Increases		71700	
Reprogrammings	2834		
SBIR/STTR Transfer	-1325		
Adjustments to Budget Years			17518

Change Summary Explanation:
 FY 2009-Congressional Adds - \$2.8M for Common Remote Stabilization System (CRS3) in DL70, \$2.4M for Soldier Worn Gunshot Detection System in DL67 and \$2M for Auto Aim Point Targeting Tech with Enhanced Imaging in DL76. Congressional increases also includes the anticipated Overseas Contingency Operations (OCO) increase of \$64.5 million to support Heterogeneous Airborne Reconnaissance team system development (\$36 million), Beyond Line of Sight RDA Seismic UGS development (\$6 million) and Airborne Wireless Mesh development (\$22.5 million).
 FY 2010 increase in Project L67 and L76 focus on improvements to meteorological measurement capabilities, integration of related multi-sensors suites to enable immediate improvements in near to long-range target acquisition and engagement, as well as improved battlefield command and control in "around-the-clock" combat operations.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604710A - Night Vision Systems - Eng Dev			PROJECT L67	
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
L67 SOLDIER NIGHT VISION DEVICES	15750	30014	24637	Continuing	Continuing

A. Mission Description and Budget Item Justification: This project develops, improves and miniaturizes high performance night vision electro-optics, thermal and laser systems. It also provides for systems integration of related multi-sensor suites to enable near to long-range target acquisition and engagement as well as improved battlefield command and control in around-the-clock combat operations. It focuses on technology that can bring improvements to the dismounted Soldiers' equipment. This project develops or enhances equipment that provides the individual Soldier's day/night situational awareness and individual targeting capability, sniper fire detection and location capability, and integrates improved target location and self-location capability to eliminate friendly fire incidents. Enhanced Night Vision Goggle (Digital) ENVG(D) is a head/helmet mounted night vision system for the individual Soldier. The system will use both image intensifier and uncooled thermal technology to provide a multi-spectral image to the Soldier. Other efforts include a Soldier-borne gunfire detection system to determine location of sniper gunfire and the development of Sense Through The Wall (STTW) technology giving Soldiers the ability to detect threats through walls during Military Operations in Urban Terrain (MOUT). Also developing a Fused Weapon Sight (FWS) with fused electro-optical performance, and developing focal plane and high resolution micro-display technology increasing product resolution, range, and imaging performance.

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
Continue development of next generation Enhanced Night Vision Goggles (Digital) ENVG(D). The Digital ENVG will provide Soldiers the ability to use both image intensifier and uncooled thermal technologies during day, night, and obscured battlefield conditions.	4614	10152	4953
Continue development of lightweight multi-purpose laser with a nonlethal method of warning a vehicle operator or gaining their attention beyond 75 meters and identify friend or foe (IFF).	3000	1928	2477
Continue development of Sense Through The Wall (STTW), which provides dismounted Soldiers with the capability to detect and locate threats through walls during Military Operations on Urban Terrain (MOUT).	3153	600	742
Continue the development of the Fused Weapon Sight (FWS), which is a passive fused electro-optical sight.	200		4954
Initiate the development of enhanced aiming capabilities which provides weapon sight reticle-in-goggle display for rapid target acquisition, passive aiming, and offensive operations		2000	
Continue the development, testing and evaluation of improved Focal Plane Arrays (FPA), with larger array sizes, improved sensitivity, clarity and range. Also develop next generation FPA with smaller, 12 micron, pitch.	3834	7478	5567
Continue the development of sniper fire detection and location systems, using portable sensors on Soldiers to locate gunfire.	949	3161	2972
Develop laser defense capabilities for sniper detection/laser warning system with the ability to "see" threat optics in order to locate enemy snipers.		2428	2972
Initiate developments to improve range acceleration, reduced operating temperature and extended laser life cycle for laser devices.		1382	
Small Business Innovative Research/Small Business Technology Transfer Programs.		885	

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604710A - Night Vision Systems - Eng Dev	PROJECT L67
Total	15750	30014 24637

<u>B. Other Program Funding Summary</u>	FY 2008	FY 2009	FY 2010	To Compl	Total Cost
Helmet Mounted Enhanced Vision Devices (K36400) OPA2	469596	396214	341007	Continuing	Continuing
Thermal Weapon Sight (TWS) (K22900) OPA2	379882	435637	338237	Continuing	Continuing
Sniper Night Sight (K41500) OPA2	20598	18193	14218	Continuing	Continuing
Multi-Function Aiming Light (MFAL) (K35000) OPA2	70984	28885	26123	Continuing	Continuing
Sense Throught The Wall (STTW) (KA2300) OPA2			25352	Continuing	Continuing

Comment:

C. Acquisition Strategy The various developmental programs in this project will continue to exercise competitively awarded contracts using best value source selection procedures.

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration			PE NUMBER AND TITLE 0604710A - Night Vision Systems - Eng Dev							PROJECT L67		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Enhanced Night Vision Goggles (Digital) ENVG(D)	MIPR	CACI Technologies, Chantilly VA	16676	300	2Q	300	1Q			Cont.	Cont.	
Enhanced Night Vision Goggles (Digital) ENVG	MIPR	BAE Systems, Lexington MA		739	2Q	4633	1-3Q				5372	
Enhanced Night Vision Goggles (Digital) ENVG	MIPR	DRS, Dallas TX		1868	2Q	1500	1Q				3368	
Enhanced Night Vision Goggles (Digital) ENVG	C/FP	Penn State, University Park PA		1091	2Q						1091	
Enhanced Night Vision Goggles (Digital) ENVG	MIPR	E-OIR, Virginia				2600	2Q				2600	
Enhanced Night Vision Goggles (Digital) ENVG (D)	Various	TBD				1700	2-3Q	4253	1-2Q	Cont.	Cont.	
Multi-purpose Laser	C/FP	Fibertek, Herndon VA		1000	3Q					Cont.	Cont.	
Multi-purpose Laser	MIPR	TBD		2000	4Q	982	1-3Q	1239	1-2Q		4221	
Multi-purpose Laser	MIPR	Laser Devices, CA				353	1Q				353	
Sense Through The Wall (STTW)	MIPR	CERDEC - Fort Monmouth, NJ	2444	2449	1Q					Cont.	Cont.	
Sense Through The Wall (STTW)	C/FP	Cyterra, Woburn, MA		458	2Q						458	
Sense Through The Wall (STTW)	C/FP	Raytheon, El Segundo CA		246	3Q						246	
Sense Through The Wall (STTW)	MIPR	TBD				565	4Q	668	2Q		1233	
Fused Weapon Sight (FWS)	C/FP	CACI, Technologies, Chantilly VA		200	3Q					Cont.	Cont.	
Fused Weapon Sight (FWS)	MIPR	TBD						4211	1-2Q	Cont.	Cont.	
Laser Detection/Laser Warning Device	MIPR	TBD				2842	1-3Q	1783	1-2Q	Cont.	Cont.	
Enhanced Aim Display	MIPR	TBD				2000	3Q			Cont.	Cont.	
Focal Plane Arrays (FPA)	MIPR	DOI - Ft Huachuca, AZ	17543	3834	1-2Q	4337	1-2Q	5567	1-2Q	Cont.	Cont.	

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT			
5 - System Development and Demonstration			0604710A - Night Vision Systems - Eng Dev							L67			
Focal Plane Arrays (FPA)	MIPR	CACI, Technologies, Chantilly VA				3642	3Q				3642		
Sniper Fire Detection and Location Technology Development	MIPR	ARDEC, Picatinny Arsenal, NJ	7576	280	1Q					Cont.	Cont.		
Sniper Fire Detection and Location Technology	C/FP	Planning Systems, Inc . Reston. VA		668	3Q						668		
Sniper Fire Detection and Location Technology	Various	TBD				2428	1-2Q	1783	1-2Q		4211		
STORM Diode		TBD				1382	3Q				1382		
Subtotal:			44239	15133		29264		19504		Cont.	Cont.		
II. Support Costs		Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Matrix Support				604			885	1-3Q			Cont.	Cont.	
Subtotal:				604			885				Cont.	Cont.	
III. Test And Evaluation		Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Government Test Support Activity		MIPR	Various Activities	10491	617	1-2Q	1459	1-3Q	5133	1-2Q	Cont.	Cont.	
Subtotal:				10491	617		1459		5133		Cont.	Cont.	
IV. Management Services		Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Misaligned Congressional Add Funding							-1594					-1594	

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration		PE NUMBER AND TITLE 0604710A - Night Vision Systems - Eng Dev						PROJECT L67	
Subtotal:					-1594			-1594	
Project Total Cost:		55334	15750		30014		24637	Cont. Cont.	

Schedule Profile (R4 Exhibit)

May 2009

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604710A - Night Vision Systems - Eng Dev

PROJECT
L67

Event Name	FY 08				FY 09				FY 10				FY 11				FY 12				FY 13				FY 14				FY 15															
	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												
ENVG (D) - Incremental Development					Incremental Development																																							
Enhanced Night Vision Goggles (Digital) ENVG(D) Hardware Evaluations					Hardware Evaluations																																							
(1) ENVG (D) - MS C																					▲ 1																							
ENVG (D) - P3I																					Single Sensors & Improve Display																							
Multi-Functional Aiming Light - P3I					Laser Technology Product Improvements																																							
STTW - EMD													EMD																															
(2) STTW - MS C																	▲ 2																											
STTW - P3I																	STTW P3I																											
(3) Fused Weapon Sight (FWS) Increment II- MS B																	▲ 3																											
Fused Weapon Sight (FWS) - Engineering Manufacturing & Development																	EMD																											
(4) Fused Weapon Sight (FWS) - Increment II-MS C																					▲ 4																							
Improved Focal Plane Array (FPA) Development					Evaluation and Development & Decrease Pitch																																							
GFDS - EMD													Engineering Manufacturing & Development																															
(5) GFDS - MS C																	▲ 5																											

Schedule Profile (R4 Exhibit)

May 2009

BUDGET ACTIVITY		PE NUMBER AND TITLE																PROJECT														
5 - System Development and Demonstration		0604710A - Night Vision Systems - Eng Dev																L67														
Event Name	FY 08				FY 09				FY 10				FY 11				FY 12				FY 13				FY 14				FY 15			
	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
GFDS- P3I													GFDS- P3I																			
Laser Warning Devices Development													Engineering Manufacturing & Development																			
Enhance AIM Development					Engineering Manufacturing & Development																											
Small Tactical Optical Rifle Mounted (STORM) (P3I)									STORM - P3I																							

Schedule Detail (R4a Exhibit)

May 2009

BUDGET ACTIVITY		PE NUMBER AND TITLE						PROJECT	
5 - System Development and Demonstration		0604710A - Night Vision Systems - Eng Dev						L67	
<u>Schedule Detail</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	
ENVG (D) - Incremental Development		2Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 2Q			
Enhanced Night Vision Goggles (Digital) ENVG(D) Hardware Evaluations	1Q - 4Q	1Q - 4Q	1Q - 3Q						
ENVG (D) - MS C						2Q			
ENVG (D) - P3I						2Q - 4Q	1Q - 4Q	1Q - 4Q	
Multi-Functional Aiming Light - P3I	2Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	
STTW - EMD			1Q - 4Q	1Q					
STTW - MS C				2Q					
STTW - P3I				1Q - 4Q					
Fused Weapon Sight (FWS) Increment II- MS B				2Q					
Fused Weapon Sight (FWS) - Engineering Manufacturing & Development				2Q - 4Q	1Q - 4Q				
Fused Weapon Sight (FWS) - Increment II-MS C						1Q			
Improved Focal Plane Array (FPA) Development	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	
GFDS - EMD	3Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 2Q					
GFDS - MS C				3Q					
GFDS- P3I				3Q - 4Q	1Q - 3Q				
Laser Warning Devices Development		1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q				
Enhance AIM Development					1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 2Q	
Small Tactical Optical Rifle Mounted (STORM) (P3I)		3Q - 4Q	1Q - 3Q						

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604710A - Night Vision Systems - Eng Dev			PROJECT L70	
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
L70 NIGHT VISION DEV ED	14831	75846	7736	Continuing	Continuing

A. Mission Description and Budget Item Justification: This project performs System Development and Demonstration (SDD) on high performance night vision, Reconnaissance, Surveillance, and Target Acquisition (RSTA) systems and other related systems that allow forces to locate and track enemy units in day, night, and all battlefield conditions, and through natural and man-made structures and obscurants. It also develops and integrates suites of these sensors to provide well-defined surveillance and targeting capabilities, as well as architectures for these sensors to communicate automatically. The focus is on meeting the requisite night vision and RSTA capabilities required for evolving Current Force, Modular Force, and Future Force systems.

The project transitions Advanced Thermal Imaging Technology from an Advanced Technology Objective to the development of a thermal engine intended to be common among all US Army FLIR sensor systems. This program will initiate and continue the development and qualification of the thermal Engine to meet schedule requirements of Next Gen FLIR (AN/ZSQ-2/Q-3) aviation system and Army Combat and reconnaissance systems. The thermal imaging engine provides Mid Wave Infrared and Long Wave Infrared digital video. This technology enhances the war-fighters' survivability and lethality through increased identification range performance when used in current sensor packages, while enabling detection of difficult or obscured target as well as faster threat detection through automated processes. The thermal imaging engine can also be used to enhance mobility by maintaining current range perform in significantly smaller and lighter sensor packages.

This project continues Program Office technical support of the FCS Unattended Ground Sensors (UGS) hardware and software development, demonstration and test for a family of UGS systems for Intelligence, Surveillance and Reconnaissance (ISR). This will provide FCS and the Army a networked Unattended Ground Sensor capability for ISR and physical security.

This project develops the Standard Ground Station (SGS) for PM NV/RSTA sensor systems. Leveraging the success in theater of the Persistent Surveillance and Dissemination System of Systems (PSDS2) Quick Response Capability (QRC), this effort takes the 3D visualization capability from PSDS2 and applies it to the Operator's station for RAID tower systems, aerostats and other RSTA Sensor systems. This effort was prioritized and performed on an accelerated schedule to support fielding in October 2008 as part of the RAID tower systems in response to the Base Expeditionary Target and Surveillance Systems - Combined (BETSS-C) JUONS. This SGS improves the effectiveness of RSTA systems by combining sensor videos, sensor cues and Battle Command information into a geo-registered 3D visualization of the terrain.

This project develops, integrates, and tests an upgrade to the Long Range Advanced Scout Surveillance System (LRAS3) system, making it capable of digitizing, compressing and transmitting target information and imagery across the battlefield Network using Standard Army Radios. This enables the Current Force and Modular Force with the ability to cross-cue sensors that are linked to the network as well as share/exploit imagery and data from networked sensors on the battlefield.

Common Remote Stabilized Sensor System (CRS3) is a remote operator's station and a stabilized pan and tilt for the LRAS3 and FS3 systems, allowing the effective employment of these sights while protected and with the vehicle moving, significantly increasing survivability and effectiveness. This is a Congressional plus up which is a follow on to efforts funded in FY03 with DL76 funds.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - System Development and Demonstration

0604710A - Night Vision Systems - Eng Dev

L70

FY 2010 funding supports continuation of efforts for: Third Generation FLIR development.

FY 2009 Overseas Contingency Operations (OCO) Request - At the direction of the OSD Intelligence, Surveillance and Reconnaissance (ISR) Task Force (TF), the Army is sponsoring: 1. The development of Heterogeneous Airborne Reconnaissance Technology (HART). This HART effort will develop a platform neutral system capable of tasking, coordinating and managing semi-autonomously underutilized sensor capability on multiple platforms and provide a logically organized storage system for utilization by the current and future ISR network. The effort will also develop a system for evaluation and use by deployed forces at the Brigade level. The developed system will provide FMV geo-registration capability, FMV and intelligence exploitation and storage tools, and semi-autonomous sensor management. 2. The development of an airborne wireless mesh capability. It will provide a high capacity (up to three megabit per second), two-way, secure Information Processing (IP) based network between ground forces and aerial assets for rapid integration of ISR sensors and servers, enabling real time access to ISR information across the battlefield. 3. The development of Beyond Line of Sight for the Remote Detection of Activity (RDA) Seismic Unattended Ground Sensors (UGS). RDA UGS will be employed by Soldiers and Marines for force protection and situational awareness. RDA UGS will provide a low cost and long endurance (two to four month battery life) capability to provide seismic detection of vehicles and human footsteps for monitoring of critical operational areas and extended perimeters at forward operating bases.

Accomplishments/Planned Program:

	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
FY 08 & 09 Base: Unattended Ground Sensors (UGS) - Develop ISR, Chemical, Biological, Radiological, Nuclear (CBRN) and Urban UGS for FCS and other Army customers. Funds continue spiral integration efforts to include networked sensor systems capabilities. Demonstrate viability and technical feasibility of employing a networked Unattended Ground Sensors (UGS) system from various delivery platforms. Current focus is in support of the FCS Spin-Out 1 for the Infantry BCT. FY07 and FY08 supported successful program CDR and early demonstration and evaluation of FCS Tactical and Urban UGS. FY09 will continue providing support for the FCS UGS SDD effort and FCS IBCT Spin-Out 1 activities including addressing improvements found from early field evaluations as well as migration to JTRS.	575	510	
FY08, 09, & 10 Base: Thermal Imaging: System Development and Demonstration (SDD) of Thermal Imaging Engine. Upon MS B approval in FY08, initiated SDD efforts. This activity leverages Substrate and Optical materials efforts funded in FY08 through project D131. FY08 and FY09 funds the development of the Thermal Imaging Engine for the Next Gen FLIR (AN/ZSQ-2/Q-3) aviation systems and Army Combat and reconnaissance systems, and fabricates 16 prototypes. Contractor qualification Testing and support for system integration activities are conducted with FY10 funding. FY11 will complete Qualification Testing; support system-level test activities, complete production preparation activities, and prepare for MS C, scheduled for 2QFY12.	6318	7226	7736
FY 08 & 09 Base: Development of an advanced payload technology for manned and unmanned systems in accordance with TRADOC priorities for aerial systems in the Current and Future Force. This effort provides enhanced EO/IR/LD technology for ER/MP, ARH, Kiowa Warrior and FCS. This effort is a joint program with PM Close Combat Support (CCS), expanding the capability of the Airborne Surveillance Target Acquisition and Minefield Detection System (ASTAMIDS) by adding the designator. FY08 supported conduct of Contractor Developmental Testing. FY09 supports the management and conduct of Government Developmental Testing.	1047	481	
FY 08 Base: LRS3 Netted Sensor - Development, integration, and testing of hardware and software that supports digital compression, transmission and display of imagery and data to/from the battlefield network. This provides the Current Force and Modular Force with the ability to cross-cue sensors that are linked to the network as well as share/exploit imagery and data from networked sensors on the battlefield. FY08 completed development, integration and testing of hardware and software, delivering 8 prototype units. This	705		

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604710A - Night Vision Systems - Eng Dev	PROJECT L70
capability transitions into the LRAS3 Production program as a P31 effort.		
FY 08 Base: The Standard Ground Station (SGS) efforts are an evolution from the PSDS2 system, integrating the ability to directly control the RAID sensor. With FY08 funds the SGS was developed and integrated with the RAID tower; Capabilities and Limitations (C&L) tested and evaluated by ATEC and fielded under a Urgent Material Release (UMR) in October 2008. RAID towers are being fielded with this capability, funded with FY08 Supplemental funds for BETSS-C. Integration with other RSTA sensor systems is planned to be funded within those sensor system efforts (PTDS for example).	6186	
FY 09 Base: Common Remote Stabilized Sensor System (CRS3). CRS3 FY09 will conduct the hardware environmental qualification testing to prepare the product for transition to production. The Armored Knight Program will integrate the CRS3 capability into their vehicles.		2800
FY 09 OCO: Heterogeneous Airborne Reconnaissance Team (HART) system development		36000
FY 09 OCO: Beyond Line of Sight RDA Seismic UGS development.		6000
FY 09 OCO: Airborne Wireless Mesh development		22500
Small Business Innovative Research / Small Business Technology Transfer Program		329
Total	14831	75846

<u>B. Other Program Funding Summary</u>	FY 2008	FY 2009	FY 2010	To Compl	Total Cost
Night Vision Advanced Development PE 0603774A	3432	2580		Continuing	Continuing
K38300 Long Range Advanced Scout Surveillance System (LRAS3) OPA2	158411	210766	163634		799582
Future Combat System, G86100 WTCV	80932	154583	153594	Continuing	Continuing
Advanced TUAV Payloads B00302 OPA2	42135	105991			148126
Advanced UAS Payloads A00020 APA			97702	Continuing	Continuing
Next Gen FLIR for Army Special Operations Aviation Fleet - (AN/ZSQ-2/3): RDTE			9138		12956
Next Gen FLIR for Army Special Operations Aviation Fleet - (AN/ZSQ-2/3): PROC				Continuing	Continuing

Comment:

C. Acquisition Strategy The development programs in this project are currently based on competitive awards and under cost reimbursement type contracts. The FY09 Congressional increase will be a sole source award.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY

5 - System Development and Demonstration

PE NUMBER AND TITLE

0604710A - Night Vision Systems - Eng Dev

PROJECT

L70

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ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration			PE NUMBER AND TITLE 0604710A - Night Vision Systems - Eng Dev							PROJECT L70		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
DVE Development	C/CPIF	Various	21831								21831	
Modular HTI Multifunction Laser Activities	C/CP	Insight Technologies, Londonderry, NH & DRS Technologies, Torrence, CA	3868								3868	
LLDR RAPT	C/CP	Various	4253								4253	
Light Forward Observer Optics	C/CP	Various	1258								1258	
Thermal Upgrades for DVE (Dual wavelength) and competition	C/CP	Kaiser Electric San Diego, CA, Various	3608								3608	
LLDR Advanced Demonstration System	C/CP	Litton Laser, Apopka, FL	2556								2556	
Sensor Architecture/Digital RSTA/SLP	C/CPIF & C/CP	Various	11962								11962	
Various Prototypes and Studies	C/CPIF	Various	2947								2947	
Thermal Upgrades for TWS (target location)	C/CP	Raytheon, El Segundo, CA, Various	5811								5811	
HTI Laser Trade Studies	C/CP	Various	1020								1020	
Enhanced NVG Analysis & Design (TX to DL67)	C/CP	Various	4782								4782	
HTI Laser MFS3 design and prototype activities	C/CPIF	Raytheon, Dallas, TX	565								565	
MANTECH Focal Plane Array and optics	C/CP	Raytheon, Dallas, TX	1500								1500	
Digital MELIOS Design & Fabrication	C/FP	Litton Lasers, Inc.	1000								1000	
AN/TMQ-41 Trade Studies and related activities	C/CP	Various	1232								1232	
Image Fusion for DVE	C/CP	Raytheon, Dallas, TX	1274								1274	
Digital RSTA SDD	C/CP	Booz-Allen Hamilton,	2190								2190	

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
5 - System Development and Demonstration			0604710A - Night Vision Systems - Eng Dev							L70		
		Tysons Corner, VA										
CIRISS Efforts	C/CP	Various	1500									1500
LLDR Vehicle applications	C/CP	Litton Laser, Apopka, FL Various	3487									3487
FLIR develop/integrate	Various	Various	1731									1731
Uncooled B-Kit	Various	Various	10354									10354
EO/IR/LD UAV Payloads	C/CP	Northrop Grumman, Melbourne, FL	4087	1000	2Q							5087
LLDR EMD	C/CP	Litton Lasers, Apopka, FL	19873									19873
GMTI Radar	C/FP & CP	General Atomics	2792									2792
UGS	CP/FFP	Various	708									708
FCS UGS / UGS	C/CP	FCS Boeing/Textron/Various /TBD	5099									5099
PSDS2 Efforts	C/CPFF	Various	11751									11751
LRAS3 Netted Sensor	SS/CP	Raytheon, McKinney Texas	8815	250	4Q							9065
DVD (DVE Light)	C/CP	CACI	572									572
Thermal Imaging	C/CPIF	Various	1532									1532
FY 08, 09 & 10 Base: Thermal Imaging	C/CPIF	Raytheon, Santa Barbara, CA		4637	4Q	5386	3Q	5758	1-2Q	Cont.		Cont.
SGS/RAID	C/CP	Sarnoff, Princeton, NJ		4913	2Q							4913
FY 09 Base: CRS3	SS/CP	DRS, St. Louis, MO				2800	2-4Q					2800
SBIR/STTR						329						329
FY 09 OCO: Heterogeneous Airborne Reconnaissance Team (HART) system development	TBD	TBD				36000						36000
FY 09 OCO: Beyond Line of Sight RDA Seismic UGS development.	TBD	TBD				6000						6000
FY 09 OCO: Airborne Wireless	TBD	TBD				22500						22500

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration				PE NUMBER AND TITLE 0604710A - Night Vision Systems - Eng Dev						PROJECT L70		
Mesh development												
Subtotal:				143958	10800		73015		5758		Cont.	Cont.

II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Matrix Support	MIPR	Various	19904							Cont.	Cont.	
Matrix Support	MIPR	NVESD	720								720	
Matrix Support	MIPR	TRADOC	400								400	
Matrix Support	MIPR	Various	231								231	
Thermal Imaging Support	MIPR	Various		1681	1-2Q	1454	1-2Q	1610	1-2Q	Cont.	Cont.	
EO/IR/LD(ASTAMIDS) Support	MIPR	Various		47	1-2Q	300	1-2Q				347	
LRAS3 Netted Sensor Support	MIPR	Various		500	2-4Q						500	
UGS Matrix	MIPR	Various		403	1-2Q	490	1-2Q				893	
Subtotal:			21255	2631		2244		1610		Cont.	Cont.	

III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
DT/IOT&E*	MIPR	ATEC	8769								8769	
Other Test Support*	MIPR	Various	6351							Cont.	6351	
SGS/RAID C&L	MIPR	ATEC/DTC		730	2-4Q						730	
Subtotal:			15120	730						Cont.	15850	

Remarks: * Includes PSDS2, UGS, STTW, 3GF and other sensor test and evaluation activities. Includes PSDS2 and FCS UGS test and evaluation.

IV. Management Services	Contract	Performing Activity &	Total	FY 2008	FY 2008	FY 2009	FY 2009	FY 2010	FY 2010	Cost To	Total	Target
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ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
5 - System Development and Demonstration			0604710A - Night Vision Systems - Eng Dev							L70		
	Method & Type	Location	PYs Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Complete	Cost	Value of Contract
Project Management	In house support	PM, NV/RSTA, Fort Belvoir, VA & Ft. Monmouth, NJ	6359	172	1-4Q	587	1-4Q	368	1-4Q	Cont.	Cont.	
SGS Management	C/T&M	BAH		498	2Q						498	
Subtotal:			6359	670		587		368		Cont.	Cont.	
Project Total Cost:			186692	14831		75846		7736		Cont.	Cont.	

Schedule Profile (R4 Exhibit)

May 2009

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604710A - Night Vision Systems - Eng Dev

PROJECT
L70

Event Name	FY 08				FY 09				FY 10				FY 11				FY 12				FY 13				FY 14				FY 15			
	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
UGS Dispensing/Development	█				█																											
LRAS3 Netted Sensor Development & Demonstration	█				█																											
UAV Payload Development efforts	█				█																											
(1) Thermal Imaging MS B	▲																															
Thermal Imaging SDD					█				█																							
(2) Thermal Imaging SDD Contract Award, (3) Thermal Imaging Milestone C					▲												▲															
(4) Gunshot Detection System Program Initiation																	▲															
(5) Persistent Surveillance System of Systems (PSS) Program Initiation																	▲															
Sense Through The Wall (STTW) Effort																					█											
FY 09 Overseas Contingency Operation efforts: HART, UGS, WiMesh									█																							

Schedule Detail (R4a Exhibit)

May 2009

BUDGET ACTIVITY		PE NUMBER AND TITLE						PROJECT	
5 - System Development and Demonstration		0604710A - Night Vision Systems - Eng Dev						L70	
<u>Schedule Detail</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	
UGS Dispensing/Development	1Q - 4Q	1Q - 4Q							
LRAS3 Netted Sensor Development & Demonstration	1Q - 4Q								
UAV Payload Development efforts	1Q - 4Q	1Q - 4Q							
Thermal Imaging MS B	3Q - 2Q								
Thermal Imaging SDD		1Q - 4Q	1Q - 4Q	1Q - 4Q					
Thermal Imaging SDD Contract Award		1Q							
Thermal Imaging Milestone C					2Q				
Gunshot Detection System Program Initiation					2Q				
Persistent Surveillance System of Systems (PSS) Program Initiation					2Q				
Close Surveillance Support System (CS3) MS B					1Q				
Close Surveillance Support System (CS3) Effort					1Q - 4Q	1Q - 3Q			
Close Surveillance Support System (CS3) MS C						4Q			
Sense Through The Wall (STTW) Effort						1Q - 4Q			
FY 09 Overseas Contingency Operation efforts: HART, UGS, WiMesh			1Q - 4Q						

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration		PE NUMBER AND TITLE 0604710A - Night Vision Systems - Eng Dev			PROJECT L75	
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost	
L75 Profiler			5432	Continuing	Continuing	

A. Mission Description and Budget Item Justification: The AN/TMQ-52 Meteorological Measuring Set-Profiler (MMS-P) is a replacement for the current Meteorological Measuring Set (MMS), AN/TMQ-41. Profiler uses a suite of meteorological (MET) sensors and MET data from communication satellites along with an advanced weather model to provide highly accurate MET data covering an operational area of 500 kilometers with a tested range of 60 kilometers. The current MMS relies upon a balloon-borne radiosonde to measure and transmit MET conditions such as wind speed, wind direction, temperature, pressure and humidity. It is considered accurate to 20 kilometers from the balloon launch site and cannot provide target area MET data. Profiler provides the same MET information MMS does and adds rate of precipitation, visibility, cloud height and cloud ceiling. All of these are required for precise targeting and terminal guidance. Profiler uses this information to build a four-dimensional MET model (height, width, depth and time) that includes terrain effects. By providing more accurate MET messages, Profiler will enable the artillery to have a greater probability of a first round hit with indirect fire systems. The new capabilities will increase the lethality of field artillery systems such as Multiple Launch Rocket Systems (MLRS), Paladin, and self-propelled or towed howitzers. Profiler Block II will increase MET message accuracy in addition to reducing the MET section footprint from three HMMWVs and two trailers with a crew of six, to one HMMWV and two soldiers with "on-the-move" capability. The Army will realize a significant logistics savings with the improved configuration.

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
Initiate Block II MET sensor effort for balloon/radiosonde alternatives.			1150
Design software modifications for accuracy improvements.			2575
Conduct migration effort to a common operating system hosted on one computer.			932
Reduction of Physical Configuration.			775
Total			5432

<u>B. Other Program Funding Summary</u>	FY 2008	FY 2009	FY 2010	To Compl	Total Cost
Profiler K27900	82769	10590	4766		98125

Comment:

C. Acquisition Strategy The Profiler Block II program begins in FY 2010 by conducting meteorological sensor studies for balloon/radiosonde alternatives. Software analysis and development for accuracy improvements will be conducted. Software will be consolidated from four computers in Block I to one computer with a common operating system. A Preliminary Design Review (PDR) will be conducted. Following a successful PDR, an EMD award of four Block II systems will be built. Testing will be completed

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY

5 - System Development and Demonstration

PE NUMBER AND TITLE

0604710A - Night Vision Systems - Eng Dev

PROJECT

L75

in FY 2012.

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
5 - System Development and Demonstration			0604710A - Night Vision Systems - Eng Dev							L75		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
SDD Contract	C/CPIF	Smiths Detection, Edgewood, MD	14999								14999	14950
SDD T&M	C/T&M	Smiths Detection, Edgewood, MD	103								103	
Studies and Simulations	MIPR	Army Research Lab, White Sands Missile Range, NM	429								429	
Government Furnished Equipment	MIPR	HQCPSQ/ZJ, San Antonio, TX	120								120	
Balloon/radiosonde sensor alternatives	MIPR	Army Research Lab, White Sands Missile Range, NM						975	1-4Q		975	
Software mods for accuracy improvements	TBD	TBD						2055	1Q		2055	
Reduction of Physical Configuration	TBD	TBD						870	1Q		870	
Migration to common operating system	TBD	TBD						650	1-4Q		650	
Conduct Reliability, Availability, Maintainability	TBD	TBD									375	
Subtotal:			15651					4550			20576	14950
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Matrix Support	MIPR	CECOM, Fort Monmouth NJ	2063					72	1-4Q		2211	
Sys Engr/Technical Assistance								378	1-4Q		378	
OGA	MIPR	Various	1089								1089	

ARMY RDT&E COST ANALYSIS (R3)										May 2009			
BUDGET ACTIVITY				PE NUMBER AND TITLE						PROJECT			
5 - System Development and Demonstration				0604710A - Night Vision Systems - Eng Dev						L75			
Subtotal:				3152					450			3678	
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract	
Test Planning and Preparation	MIPR	ATEC, Various, CECOM, PRD Dir, Ft. Monmouth	942								1294		
Developmental Testing	MIPR	ATEC, Various	1049								1049		
Initial Operational Test & Evaluation	MIPR	ATEC, Various	1200								1200		
Conduct Block II Testing	MIPR	ATEC, Various									500		
Subtotal:			3191								4043		
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract	
Project Management	In house support	PM Nav Sys/TIMS, Fort Monmouth, NJ	993					432			1425		
Subtotal:			993					432			1425		
Project Total Cost:			22987					5432			29722	14950	

Schedule Profile (R4 Exhibit)

May 2009

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604710A - Night Vision Systems - Eng Dev

PROJECT
L75

Event Name	FY 08				FY 09				FY 10				FY 11				FY 12				FY 13				FY 14				FY 15			
	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) IPR																																
Block II Met Sensor Effort																																
Implement Software Modifications for Accuracy Improvements																																
Migration to Common Operating System hosted on one computer																																
Reduction of Physical Configuration																																
(2) Design Readiness Review																																
EMD Award																																
Conduct Block II Testing																																

Schedule Detail (R4a Exhibit)

May 2009

BUDGET ACTIVITY		PE NUMBER AND TITLE						PROJECT	
5 - System Development and Demonstration		0604710A - Night Vision Systems - Eng Dev						L75	
<u>Schedule Detail</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	
Milestone C: Low Rate Initial Production (LRIP) Decision									
Full Rate Production (FRP) Decision In Process Review (IPR)									
System Development and Demonstration (SDD)									
Hardware/Software (HW/SW) Development									
System Functional Demonstration (SFD)									
Software (SW) Functional Qualification Test (FQT) & Report									
Developmental Test (DT) and Report									
Logistics Demonstration									
Low Rate Initial Production (LRIP)									
Full Rate Production (FRP)									
Initial Operational Test & Evaluation (IOT&E)									
First Unit Equipped (FUE)									
Continue SDD HW/SW development phase.									
System Functional Demonstration									
MS C LRIP Decision									
SW FQT and Report.									
Conduct Developmental Test									
Low Rate Initial Production (LRIP)									
Full Rate Production									
First Unit Equipped									
IPR			1Q						
Block II Met Sensor Effort			1Q - 4Q	1Q					
Implement Software Modifications for Accuracy			1Q - 4Q	1Q - 3Q					

Improvements								
Migration to Common Operating System hosted on one computer			1Q - 4Q	1Q				
Reduction of Physical Configuration			1Q - 4Q	1Q				
Design Readiness Review				2Q				
EMD Award				3Q - 4Q				
Conduct Block II Testing				4Q	1Q - 2Q			

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration		PE NUMBER AND TITLE 0604710A - Night Vision Systems - Eng Dev			PROJECT L76	
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost	
L76 Dismounted Fire Support Laser Targeting Systems	18245	10177	17605	Continuing	Continuing	

A. Mission Description and Budget Item Justification: This project will develop technologies for insertion into Laser Target Locators and Laser Designators to improve overall performance of those systems and reduce weight. Technologies developed under this project will benefit the Lightweight Laser Designator Rangefinder (LLDR, AN/PED-1), the Mark VII-E Laser Target Locator, and future systems (see JETS below). This project will integrate the next generation uncooled Forward Looking Infrared (FLIRs) into the Laser Target Locator Module (LTLM), improving its imaging performance with no impact on its weight. This project will initiate interface design for a reduced weight common laser designator to the next generation LTLM which will form a bridge to the JETS. In addition, this line will support improved targeting accuracy in support of coordinate seeking weapons, such as Joint Direct Attack Munition (JDAM), Small Diameter Bomb, and Excalibur. Development will primarily focus on affordable, non-magnetic, high accuracy, azimuth and vertical angle measurement (AVAM) devices with reduced size, weight and power characteristics.

The Joint Effects Targeting System (JETS) is a Joint (Army, Air Force, Navy and Marine) program to develop a lightweight set of mission equipment for the dismounted forward observer and controllers (including Joint Tactical Air Controllers). The JETS will provide the observer and controller the means to call for fire and control delivery of air, ground and naval surface fire support, using precision, near-precision and non-precision munitions and effects (both lethal and non-lethal). The JETS will consist of two subsystems: the Target Location and Designation System (TLDS) and the Target Effects Coordination System (TECS). The TLDS will provide the observer and controller the ability to conduct surveillance; acquire and accurately locate targets; designate targets for attack by laser seeking munitions; mark targets for aviation and ground based targeting systems; and transmit targeting data to the TECS. The TECS will provide access to the future joint targeting network, formats digital calls for fire and Close Air Support (CAS) 9-line requests to all joint fires platforms; will display information to the observer and controller to enable effective target engagement and integration of fires with Joint maneuver forces; and supports fire support planning functions. In order to achieve portability the total system weight of the JETS will be limited to 20 pounds. The limited weight available for JETS will likely have the effect of limiting the accuracy and target acquisition capabilities of JETS as compared to heavier dismounted systems, such as LLDR, especially in the case of TLDS.

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
Complete the analysis of alternatives for laser targeting systems and continue to provide LTLM Systems Engineering and Technical Assistance (SETA).	2590	500	1100
Continue the development of Azimuth and Vertical Angle Measurement (AVAM) devices and integrate into LLDR.	15655	4000	
Product improve LTLM and develop Joint Effects Targeting System (JETS) P3I.		3455	16505
Small Business Innovative Research / Small Business Technology Transfer Program.		230	
Misaligned Congressional Add funding for Auto Aim Point Targeting Technology with Enhanced Imaging - belongs to Project L67.		1992	
Total	18245	10177	17605

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration		PE NUMBER AND TITLE 0604710A - Night Vision Systems - Eng Dev			PROJECT L76	
<u>B. Other Program Funding Summary</u>		FY 2008	FY 2009	FY 2010	To Compl	Total Cost
Lightweight Laser Designator Rangefinder (LLDR) (K31100) OPA2		188984	134696	156100	Continuing	Continuing
Laser Target Locating System (LTLS) (B53800) OPA2		120304	68351	67767	Continuing	Continuing

Comment: JETS funding is also found in USAF PE 0207423F and USMC PE 0206313M and USMC PE 0206623M.

C. Acquisition Strategy The various development programs in this project will continue to exercise competitively awarded contracts using the best value source selection procedures.

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
5 - System Development and Demonstration			0604710A - Night Vision Systems - Eng Dev							L76		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Analysis and Technical Evaluation	C/CP	TBD	1340	2590	3-4Q	500	3Q	1100	2Q		5530	
Azimuth and Vertical Angle Measurement (AVAM)	C/CP	Northrop Grumman, Orlando FL	1322	10218	3Q						11540	
Azimuth and Vertical Angle Measurement (AVAM)	MIPR	TBD, Funding issued to Defense Micro-Electronics Activity (DMEA) Sacramento CA		5281	2Q						5281	
Azimuth and Vertical Angle Measurement (AVAM)	MIPR	TBD, Funding issued to Defense Micro-Electronics Activity				4000	3Q				4000	
LTLM P3I & JETS Technical Development	T&M	Johns Hopkins Applied Physics Lab, Laurel MD				3455	2-3Q				3455	
Joint Effects Targeting System (JETS)	C/CP	TBD						16505	2Q		16505	
Subtotal:			2662	18089		7955		17605			46311	
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Azimuth and Vertical Angle Measurement (AVAM)	MIPR	Booz Allen Hamilton, McLean, Virginia		50	3Q						50	
Azimuth and Vertical Angle Measurement (AVAM)	C/FP	Johns Hopkins Applied Physics Lab, Laurel MD		50	4Q						50	
Small Business Innovative Research/Small Business Technology Transfer Program						230	1Q				230	
Subtotal:				100		230					330	

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604710A - Night Vision Systems - Eng Dev

PROJECT
L76

III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Government Activity	MIPR	Fibertek, Herndon VA		46	2Q						46	
Government Test Support Activity	MIPR	Army Evaluation Center, Alexandria, VA		10	4Q						10	
Subtotal:				56							56	

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Misaligned Congressional Add Funding						1992					1992	
Subtotal:						1992					1992	

Project Total Cost:			2662	18245		10177		17605			48689	
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Schedule Profile (R4 Exhibit)

May 2009

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604710A - Night Vision Systems - Eng Dev

PROJECT
L76

Event Name	FY 08				FY 09				FY 10				FY 11				FY 12				FY 13				FY 14				FY 15			
	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
Analysis of Alternatives for Laser Targeting Systems																																
SETA for Laser Targeting Systems																																
LTLM & JETS Technical Development Design sources & prototypes																																
(1) LTLM MS C																																
AVAM Development & LLDR Integration																																
AVAM Testing																																
(2) JETS MS A																																
Technology Development/prototype Build																																
(3) JETS MS B																																
JETS Development-EMD																																
SSEB																																
(4) JETS Contract Award																																
Design																																
Prototype Build																																
JETS Testing (DT/OT)																																

Schedule Profile (R4 Exhibit)

May 2009

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604710A - Night Vision Systems - Eng Dev

PROJECT
L76

Event Name	FY 08				FY 09				FY 10				FY 11				FY 12				FY 13				FY 14				FY 15			
	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
(5) JETS MS C																									5							

Schedule Detail (R4a Exhibit)

May 2009

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604710A - Night Vision Systems - Eng Dev

PROJECT
L76

<u>Schedule Detail</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>
Analysis of Alternatives for Laser Targeting Systems	3Q - 4Q							
SETA for Laser Targeting Systems	1Q - 4Q	1Q - 4Q						
LTLM & JETS Technical Development Design sources & prototypes		3Q - 4Q						
LTLM MS C		4Q						
AVAM Development & LLDR Integration	2Q - 4Q	1Q - 4Q	1Q					
AVAM Testing	2Q - 4Q							
JETS MS A			1Q					
Technology Development/prototype Build			1Q					
JETS MS B					1Q			
JETS Development-EMD		2Q - 3Q						
SSEB				3Q - 4Q	1Q			
JETS Contract Award					1Q			
Design					1Q - 3Q			
Prototype Build					3Q - 4Q	1Q - 3Q		
JETS Testing (DT/OT)						3Q - 4Q		
JETS MS C							2Q	

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

May 2009

BUDGET ACTIVITY		PE NUMBER AND TITLE			
5 - System Development and Demonstration		0604713A - Combat Feeding, Clothing, and Equipment			
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
548 MIL SUBSISTENCE SYS	2417	2491	2092	Continuing	Continuing

A. Mission Description and Budget Item Justification: This project supports the development and demonstration and Non-Developmental Item (NDI) Commercial Off The Shelf (COTS) evaluation of combat feeding equipment to enhance soldier efficiency and survivability, and to reduce food service logistics requirements for all four services. The project supports multi-fuel, rapidly deployable field food service equipment initiatives and engineering and manufacturing development to improve equipment, enhance safety in food service, and decrease fuel and water requirements. This project develops critical enablers that support the Joint Future Capabilities and Joint Expeditionary mindset, by maintaining readiness through fielding and integrating new equipment; by enhancing the field soldier's well-being; and providing soldier usable equipment. They also reduce sustainment requirements, related Combat Support/Combat Service Support (CS/CSS) demands on lift, the combat zone footprint, and costs for logistical support.

This PE/Project supports Field Feeding programs for all the services.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

May 2009

BUDGET ACTIVITY	PE NUMBER AND TITLE		
5 - System Development and Demonstration	0604713A - Combat Feeding, Clothing, and Equipment		
<u>B. Program Change Summary</u>	FY 2008	FY 2009	FY 2010
Previous President's Budget (FY 2009)	2485	2499	2139
Current BES/President's Budget (FY 2010)	2417	2491	2092
Total Adjustments	-68	-8	-47
Congressional Program Reductions		-8	
Congressional Recissions			
Congressional Increases			
Reprogrammings			
SBIR/STTR Transfer	-68		
Adjustments to Budget Years			-47

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604713A - Combat Feeding, Clothing, and Equipment			PROJECT 548	
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
548 MIL SUBSISTENCE SYS	2417	2491	2092	Continuing	Continuing

A. Mission Description and Budget Item Justification: This project supports the development and demonstration and Non-Developmental Item (NDI) Commercial Off The Shelf (COTS) evaluation of combat feeding equipment to enhance soldier efficiency and survivability, and to reduce food service logistics requirements for all four services. The project supports multi-fuel, rapidly deployable field food service equipment initiatives and engineering and manufacturing development to improve equipment, enhance safety in food service, and decrease fuel and water requirements. This project develops critical enablers that support the Joint Future Capabilities and Joint Expeditionary mindset, by maintaining readiness through fielding and integrating new equipment; by enhancing the field soldier's well-being; and providing soldier usable equipment. They also reduce sustainment requirements, related Combat Support/Combat Service Support (CS/CSS) demands on lift, the combat zone footprint, and costs for logistical support.

This PE/Project supports Field Feeding programs for all the services.

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
FY08: Conducted test and evaluation of second iteration sink exhaust blower assembly and pump assembly for untreated gray water reuse. Finalized configuration for Food Sanitation Center (FSC) modernization kit.	164		
FY08: Conducted Production Quality Test (PQT) of the Thermal Fluid Containerized Kitchen (TFCK). Cancelled program based on position paper from the combat developer in August 08 due to an emerging requirement for removable appliance technology in new field kitchens.	760		
FY09: Analyze new closed combustion kitchen appliances and ventilation options for an improved Containerized Kitchen (CK) configuration for production and incorporation into RESET. Acquire new appliances and initiate prototype fabrication. FY 10: Complete fabrication, complete Developmental Testing (DT) and initiate Operational Testing (OT) and evaluation of the CK RESET kit prototype.		143	283
FY 10: Complete performance requirement on Water Cooling for Vehicular Mounted Units, solicit and award contract for prototype fabrication.			264
FY08: Analyzed new kitchen equipment and Mobile Kitchen Trailer (MKT) layout options and determined the optimum MKT Reset Kit concept. FY09: Solicit for, design, and build MKT Reset Kit prototype and commence developmental tests. FY10: Complete developmental and operational test and evaluation of the MKT Reset Kit prototype.	150	460	269
FY09: Complete Production Qualification Testing (PQT), Production Verification Testing (PVT) and Conduct User evaluation, complete Performance Specification, and transition Self Powered Tray Ration Heater (STRH) to procurement.		328	
FY08: Identified and tested commercial items that can be utilized to improve the quality of sanitation at forward deployed locations. Integrated selected components into a portable sanitation kit for forward deployments.	155		
FY08: Completed delivery of MRE (2009 Date of Pack (DOP)), performance based contract requirements to Defense Supply Center	159	146	176

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT						
5 - System Development and Demonstration	0604713A - Combat Feeding, Clothing, and Equipment	548						
<p>Philadelphia (DSCP) for procurement (1Q08) including ration menus, assembly contract requirements, and component standardization documents. Completed field test/field evaluation of new ration components for Meals, Ready-to-Eat (MRE) XXX (2010 DOP) with 11th Air Defense Artillery Unit, Ft. Bliss, TX. Presented recommendations to Joint Service Operational Ration Forum (JSORF) in 2QFY08 for continuous improvement of ration components of MRE (2010 DOP) with fourteen new items approved for MRE XXX. Obtained Office of the Surgeon General (OTSG) approval. Performed cutting for industry/Other Government Agencies (OGA) at NSRDEC in 3QFY08 for 13 new MRE XXIX items. Initiated Integrated Product Team (IPT) for Nutritional Analysis and Labeling of Operational Rations with industry and OGA to provide assurance to the OTSG of AR40-25 nutritional compliance and ensure new label requirements are met. Conducted joint analytical study with USARIEM on selected MRE components to identify potential vitamin and mineral loss after storage to increase accuracy of nutritional data used to develop menus. FY09/10: Based on field test results, present recommendations to JSORF (2Q09/2Q10) for continued product improvement of ration components/packaging/ technologies for MRE. Finalize MRE procurement documents and initiate transition to DSCP. Obtain OTSG approval. Perform cuttings for industry/OGA to ensure consistent ration quality, understand PCR requirements, and resolve vendor/supplier issues. Identify new components based on user feedback, focus groups, emerging products and technologies, and known user requirements. Obtain and assemble selected new items for test. Conduct field testing/field evaluation of new ration components for MRE to improve quality, acceptability, nutrition, and expand variety.</p>								
<p>FY08: Provided extensive engineering support to production of FSR 1 which was awarded to SOPAKCO of Mullins, SC in 2QFY08 for contract minimum quantity of 50K cases. Planned field testing for new ration components for FSR (2) to enhance quality and expand variety. Over 50 components were evaluated at Ft. Benning during two classes of the 75th Ranger Regiment Pre-Ranger Course. The Soldiers were supplied with one FSR per day for 4 days. Final component documents and final assembly document were transitioned to DSCP for the next procurement of the MCW/LRP. FY09: Current FSR production and prototype menus will be evaluated; field test data will be analyzed by Consumer Research/Cognitive Science team. This will be combined with data generated from the Nutritionally Optimized First Strike Ration (NOFSR) ATO and the data from both evaluations will be used to design from 3 to 6 new FSR menus. Finalize FSR procurement documents and initiate transition to DSCP. Obtain OTSG approval for menus. Perform cuttings for industry/OGA. Identify new components and conduct field testing/evaluation of new ration components for MCW/LRP, and FSR (3). FY10: Post field test results, present recommendations to JSORF for continued product improvement of ration components/packaging/ technologies for MCW/LRP and, Survival Rations and FSR (3/4). Finalize procurement documents and initiate transition to DSCP. Obtain OTSG approval for menus. Perform cuttings for industry/OGA to ensure consistent ration quality, understand PCR requirements, and resolve vendor/supplier issues. Identify new components based on user feedback, focus groups, emerging products and technologies, and known user requirements. Obtain and assemble selected new items for test. Conduct field testing/field evaluation of new ration components for MCW/LRP, Survival Rations, and FSR (4/5).</p>					137	175	199	199
<p>FY08: Presented Unitized Group Ration - Heat and Serve (UGR-H&S) (2010 DOP), UGR-A (2009 DOP), dehydrated Boil in Bag (BIB) menu item and other recommendations to JSORF for continuous improvement of ration components. Obtained OTSG approval of updated menus. Performed cuttings/production tests with industry/OGA to ensure consistent quality and producibility. Finalized all procurement documents and transitioned to DSCP (2Q08). Completed field testing of new ration components for UGR-H&S, (UGR-A (2010 DOP) and UGR - Express (UGR-E) to enhance quality and expand variety. FY09/10: Present recommendations to JSORF for UGR-H&S, UGR-A and UGR-E for continued product improvement. Obtain OTSG approval. Perform cuttings/production tests with industry/OGA to ensure consistent ration quality and producibility. Complete field testing of new ration components for UGR-H&S, UGR-A and UGR-E to improve quality and expand variety. Finalize UGR procurement documents and initiate transition to DSCP.</p>					157	175	199	199
<p>FY 08: Collaborated with Naval Support Command (NAVSUP) to identify product segments for Navy Standard Core Menu (NSCM). Conducted and completed a preliminary waste study for all packaging waste associated with the NSCM; result will be used to identify</p>					107			

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)	May 2009
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BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604713A - Combat Feeding, Clothing, and Equipment	PROJECT 548
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impacts to environmental shipboard regulations. Worked with commercial suppliers, researched advanced foods, conducted sensory evaluation panels in support of future revisions to the NSCM. Prepared yearly product recommendations and supported NAVSUP field testing for new menu item introduced.			
FY08 Participated in future naval vessel Integrated Process Team (IPT) meetings and obtain updates on crew size, food service space and foot print allocation, weight restrictions/reductions and program costs. Evaluated information and design future galleys to meet the proposed naval requirements. Utilized modeling, simulation and prototyping to validate designs to support Navy requirements for reductions in total life cycle costs in construction, design and equipment arrangement. FY09: Quantify functionality of future galley process control system as an enabler to accommodate shipboard labor reductions to minimize equipment maintenance requirements through automated internal diagnostics. A prototype of a future galley system will be constructed utilizing automated food service equipment, process controls, and ergonomic designs. The galley will be prototyped for initial operational testing and evaluation for potential inclusion into future galley designs onboard naval platforms. Galley designs will have the capacity to integrate future technologies that will significantly accommodate the reduction of shipboard manning requirements through automated processes, equipment technological advancements, and equipment diagnostics/prognostics for total system integration. FY10: Coordinate with the Navy to determine future manning and feeding requirements; identify, research, and down select automation technologies; evaluate/test food service equipment; and integrate food service equipment into complete galleys that will support optimized crewing encompassing a total systems design and approach.	221	479	383
FY08: Evaluate and consolidate Air Force requirements in conjunction with user community for TriCon Kitchen. Develop performance based Statement of Work (SOW) based on service comments. FY09: Award a contract to design and develop a prototype modular all electric Air Force kitchen. Conduct developmental testing of the prototype TriCon kitchen. Initiate user testing with the Air Force. FY10: Upgrade prototypes based on testing results. Transition soft shelter and hard shelter Electronic Single Pallet Expeditionary Kitchen (ESPEK) prototypes to Air Force Services. Develop Technical Data Package to support future Air Force procurement.	166	236	173
FY08: Additional state-of-the art field feeding equipment for the BEAR-550(i) will be evaluated. Electrical systems, lighting fixtures, potable water and drainage systems will be developed and packaged to support the BEAR-550(i) as a modular system and field tested. FY09: The BEAR-550(f) system will be developed into a modular system that will be capable of supporting feeding requirements from 550 to 3300. The system will be designed to help reduce labor, provide modern, efficient equipment, increase the food production yield, and reduce life cycle cost. Initiate field testing with the Air Force. FY10: Provide complete BEAR-550 prototype field kitchen system to a Combat Training Sites to support Services Training efforts. Transition Technical Data Package (TDD) that includes design, layout, and recommended equipment items to Air Force Services Command and the BEAR PMO to procure complete kitchen systems.	241	240	146
FY09: Transition from 6.4. Complete upgrade of Navy Communication Zone (COMMZ) COMMZ prototype. Upgrade/correct deficiencies with the Navy Communication Zone (COMMZ) kitchen identified based on results of the in-house testing. Develop equipment replacement list and an enhancement package to include cost data and transition to the Navy to support potential future procurement. The Navy will use the information developed under this program to determine feasibility of entire COMMZ fleet upgrade.		40	
Small Business Innovative Research/Small Business Technology Transfer Program (SBIR/STTR)		69	
Total	2417	2491	2092

<u>B. Other Program Funding Summary</u>	FY 2008	FY 2009	FY 2010	To Compl	Total Cost

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY	PE NUMBER AND TITLE			PROJECT	
5 - System Development and Demonstration	0604713A - Combat Feeding, Clothing, and Equipment			548	
RDTE, 0603747.610, Food Adv Dev	3634	3877	4208	Continuing	Continuing
OPA 3, M65803, Kitchen, Containerized, Field	121	105	96	Continuing	Continuing
OPA 3, M65802, Sanitation Center, Field Feeding	246	58	48	Continuing	Continuing

Comment:

C. Acquisition Strategy Complete System Development and Demonstration of food items and equipment for transition into competitive procurement contract. Complete advanced research efforts to support Engineer Change Proposals for previously developed equipment.

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
5 - System Development and Demonstration			0604713A - Combat Feeding, Clothing, and Equipment							548		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Various combat feeding equipment, multi-fuel and water equipment	In-House	RDECOM, NSC	4040	1157	1-4Q	1230	1-4Q	1016	1-4Q		7443	
DOD Field Feeding Equipment	Contracts	Various	1654	330	1-4Q	325	1-4Q	284	1-4Q		2593	
Army Field Feeding Equipment Development	In-House	PM Force Sustainment Systems (FSS)	961	285	1-4Q	274	1-4Q	245	1-4Q		2005	
Subtotal:			6655	1772		1829		1545			12041	
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:												
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Various	MIPR	TECOM/OEC/ATC	1636	345		351		294	1-4Q		2626	
Subtotal:			1636	345		351		294			2626	
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
CFP Management	In-House	RDECOM	995	231	1-4Q	311	1-4Q	253	1-4Q		1790	
SBIR/STTR			84	69							153	
Subtotal:			1079	300		311		253			1943	

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604713A - Combat Feeding, Clothing, and Equipment				PROJECT 548			
Project Total Cost:	9370	2417		2491		2092		16610

Schedule Profile (R4 Exhibit)

May 2009

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604713A - Combat Feeding, Clothing, and Equipment

PROJECT
548

Event Name	FY 08				FY 09				FY 10				FY 11				FY 12				FY 13				FY 14				FY 15							
	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				
Complete design of the BEAR (f), conduct test of the BEAR (i) and (f) systems																																				
Provide BEAR-550 prototype field kitchen system to Combat Training Sites																																				
(TDD) items to AF Services Command and BEAR PMO to procure kitchen systems																																				
Design a prototype of a future galley system																																				
Identify, research, and down select automation technologies																																				
Transition galley food service systems to the Navy for procurement and fielding																																				
Transition Adv Marine Corps (MC) equipment and systems to MC for procurement.																																				
Transition Advanced Navy Equipment and Systems to Navy for procurement.																																				
Conduct operational test of individual ration components/packaging																																				
Transition individual rations/ration components documentation to DLA /services																																				
Conduct operational test of UGR components/packaging																																				
Transition UGR component/packaging documents to DSCP for procurement																																				

Schedule Profile (R4 Exhibit)

May 2009

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT																														
5 - System Development and Demonstration	0604713A - Combat Feeding, Clothing, and Equipment	548																														
Event Name	FY 08				FY 09				FY 10				FY 11				FY 12				FY 13				FY 14				FY 15			
	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
Conduct POT on TFCK	█																															
Conduct DT and user evaluation for MKT improvements					█																											
Conduct DT and OT on ADR P3I prototype refrigeration units.																	█															
(1) Update the ADR P3I TDP and transition to the Air Force to support production con																									▲							
Evaluate and consolidate AF requirements for TriCon Kitchen. Develop SOW.	█																															
(2) Award contract to design and develop a prototype modular all electric AF kitchen					▲																											
(3) Complete DT/User Testing on prototype TriCon kitchen with the Services.																									▲							
Transition soft and hard shelter ESPEK prototypes to AF services. Develop TDP.									█																							
(4) Conduct Milestone C and transition Battlefield Ice System to Procurement																									▲							
(5) Transition Solar Powered Refrigeration to Procurement																									▲							
(6) Transition Temp Controllers for Field Kitchen Appliances to Procurement																									▲							

Schedule Detail (R4a Exhibit)

May 2009

BUDGET ACTIVITY		PE NUMBER AND TITLE						PROJECT	
5 - System Development and Demonstration		0604713A - Combat Feeding, Clothing, and Equipment						548	
<u>Schedule Detail</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	
Complete design of the BEAR (f), conduct test of the BEAR (i) and (f) systems		1Q - 4Q	1Q - 2Q						
Provide BEAR-550 prototype field kitchen system to Combat Training Sites			1Q - 2Q						
(TDD) items to AF Services Command and BEAR PMO to procure kitchen systems			2Q - 4Q						
Design a prototype of a future galley system		1Q - 4Q							
Identify, research, and down select automotion technologies			1Q - 4Q						
Transition galley food service systems to the Navy for procurement and fielding				1Q - 4Q					
Transition Adv Marine Corps (MC) equipment and systems to MC for procurement.						1Q - 4Q	1Q - 4Q	1Q - 4Q	
Transition Advanced Navy Equipment and Systems to Navy for procurement.							1Q - 4Q	1Q - 4Q	
Conduct operational test of individual ration components/packaging	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	
Transition individual rations/ration components documentation to DLA /services	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	
Conduct operational test of UGR components/packaging	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	
Transition UGR component/packaging documents to DSCP for procurement	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	
Conduct PQT on TFCK	1Q - 3Q								
Conduct DT and user evaluation for MKT improvements		2Q - 4Q	1Q						
Conduct DT and OT on ADR P3I prototype refrigeration units.					3Q - 4Q	1Q - 2Q			

Update the ADR P3I TDP and transition to the Air Force to support production con						3Q - 4Q		
Evaluate and consolidate AF requirements for TriCon Kitchen. Develop SOW.	1Q - 4Q							
Award contract to design and develop a prototype modular all electric AF kitchen		1Q - 4Q						
Complete DT/User Testing on prototype TriCon kitchen with the Services.		4Q						
Transition soft and hard shelter ESPEK prototypes to AF services. Develop TDP.			1Q - 4Q					
Conduct Milestone C and transition Battlefield Ice System to Procurement					4Q			
Transition Solar Powered Refrigeration to Procurement				4Q				
Transition Temp Controllers for Field Kitchen Appliances to Procurement					4Q			
Test prototype Water Cooler for Mounted Vehicles				2Q - 3Q				
Conduct Milestone C on Battlefield Kitchen						4Q		
Navy Future Galley Modular and Seabasing Effort							1Q - 4Q	1Q - 4Q
Joint Service Refrigeration Systems Enhancement Effort							1Q - 4Q	1Q - 4Q
Transition Assault Kitchen Refrigeration System into production						4Q		
Conduct DT/OT on Waste to Energy Converter					1Q - 4Q	1Q		
Conduct Milestone C on Waste to Energy Converter						4Q		
Conduct DT/OT on CK Reset kit			3Q - 4Q					
Conduct PQT, PVT, and user evaluation on STRH		2Q - 4Q						

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

May 2009

BUDGET ACTIVITY		PE NUMBER AND TITLE			
5 - System Development and Demonstration		0604715A - Non-System Training Devices - Eng Dev			
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	35361	38299	30209	Continuing	Continuing
241 NSTD COMBINED ARMS	32870	32865	28159	Continuing	Continuing
573 Program Executive Office Simulation, Training SPT	2011	4939	2050	Continuing	Continuing
587 ARMY DEVELOP CTIA/TENA CAPABILITY	480	495			975

A. Mission Description and Budget Item Justification: Program Element funds development of Non-System Training Devices to support force-on-force training at the Combat Training Centers (CTC), general military training, and training on more than one item/system, as compared with system devices which are developed in support of a specific item/weapon system. Training devices and training simulations contribute to the modernization of the forces by enabling and strengthening combat effectiveness through realistic training solutions for the Warfighter. Training devices maximize the transfer of knowledge, skills, and experience from the training situation to a combat situation. Force-on-force training at the National Training Center (NTC), Ft. Irwin, CA; Joint Readiness Training Center (JRTC), Ft. Polk, LA, and Joint Multinational Readiness Center (JMRC), formerly the Combat Maneuver Training Center (CMTC), Hohenfels, Germany; and battle staff training in Battle Command Training Program (BCTP) provide increased combat readiness through realistic collective training in low, mid, and high intensity scenarios. Project 241, Non-System Training Devices-Combined Arms, develops simulation training devices for Army-wide use, including the CTCs. Project 573 funds key organizational support to Army/DoD Transformation via innovative simulation and training device efforts. Program Executive Office (PEO) Simulation, Training and Instrumentation (STRI)'s unique geographic colocation with other services facilitates joint training solutions in a common environment.

FY 2010 Project 241 funds significant development efforts on the Combat Training Center Instrumentation Systems (CTC-IS), One Tactical Engagement Simulation System (OneTESS), and further implementation of Live Training Transformation (LT2) through development of the Common Training Instrumentation Architecture (CTIA); enabling Joint training with the Joint Forces Command. Exportable Training Capability-Instrumentation System (ETC-IS) program funding will provide for development, integration, and testing of tracking capability, coverage and accuracy, and new Battle Command systems architecture in order to increase training fidelity for Brigade Combat Team rotations to better prepare units for deployment. Live, Virtual, Constructive Integrating Architecture (LVC-IA) supports DoD Training Transformation (T2) and Army Training Doctrine by providing the required integrated LVC mission rehearsal and training environment that allows Commanders, leaders, battle staffs & units to "train as they operate" as part of a Joint Task Force.

FY 2010 Project 573 will provide for minimum PEO STRI core operations supporting development of training devices and simulations by PEO STRI Project Managers (PM TRADE, PM ITTS, PM CATT, PM Future Force (S) and PM Constructive Simulation).

Project 573 includes a Congressional Add of \$2,990K for the Center of Excellence for Military Operations in Urban Terrain and Cultural Training. This was moved from Project 573 to 241 subsequent to the database lock for proper execution.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604715A - Non-System Training Devices - Eng Dev
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<u>B. Program Change Summary</u>	FY 2008	FY 2009	FY 2010
Previous President's Budget (FY 2009)	35731	35424	16240
Current BES/President's Budget (FY 2010)	35361	38299	30209
Total Adjustments	-370	2875	13969
Congressional Program Reductions		-125	
Congressional Rescissions			
Congressional Increases		3000	
Reprogrammings	512		
SBIR/STTR Transfer	-882		
Adjustments to Budget Years			13969

Change Summary Explanation:
 FY 2010 includes increases for new programs under the Non-System Training Devices project line.

- Live, Virtual, Constructive Integrating Architecture (LVC-IA)
- Exportable Training Capability-Instrumentation System (ETC-IS)
- Combat Training Center Instrumentation System (CTC IS)

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604715A - Non-System Training Devices - Eng Dev			PROJECT 241	
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
241 NSTD COMBINED ARMS	32870	32865	28159	Continuing	Continuing

A. Mission Description and Budget Item Justification: This project supports development of prototype training devices to support Combined Arms (Infantry, Armor, Aviation, Air Defense, Artillery, Engineer, Chemical, and Support troops) training and multi-system training within the Army, to include the Reserve Components.

The Common Training Instrumentation Architecture (CTIA) provides the common architecture framework for developing the Live Training Transformation (LT2) Product Line of live training systems supporting Army-wide Force-On-Force (FOF) and Force-On-Target (FOT) training requirements. CTIA is a spiral development, evolutionary acquisition program that continues to provide developmental support for the LT2 Product line in compliance with the DoD Test and Training Enabling Architecture (TENA).

The One Tactical Engagement Simulation System (OneTESS) provides for an advanced, joint, collective, combined arms, live force-on-force training system using tactical weapon systems supported by a family of Training Aids, Devices, Simulations and Simulators (TADSS) that support up to brigade-level exercises, for every weapon and vehicle platform, at Homestation, Maneuver Combat Training Centers (MCTC), and deployed sites.

The Combat Training Centers (CTCs) provide high-fidelity live, virtual, and constructive brigade training rotations which prepare Brigade Combat Teams, Joint partners, and supporting units to deploy in support of Army Force Generation (ARFORGEN). Combat Training Center Instrumentation System (CTC IS) develops new data communications systems increasing tracking accuracy and coverage at the CTCs to provide greater training fidelity to training units. CTC IS also develops infrastructure to host OneTESS and FCS requirements.

Exportable Training Capability-Instrumentation System (ETC-IS) provides a rapidly deployable, self-supported, realistic training capability to deliver CTC-like training at locations other than CTCs supplementing CTC throughput by 6-8 rotations to meet Army Force Generation (ARFORGEN) requirements. ETC-IS develops new data communications systems increasing tracking accuracy and coverage and simulating weapons effects and engagements for exportable Brigade Combat Team training rotations to provide greater training fidelity to training units.

The Live, Virtual, Constructive Integrating Architecture (LVC-IA) provides net-centric linkage that collects, retrieves and exchanges data among LVC Training Aids, Devices, Simulations, and Simulators (TADSS) and Joint/Army Battle Command Systems leading to an LVC Integrated Training Environment (ITE). The LVC-IA defines "how" information is exchanged among LVC domains and Battle Command Systems. The LVC Integrating Architecture includes common LVC components such as Enterprise After Action Review (AAR), Command and Control (C2) Adapters, Terrain Databases, Multi-level Security, and Hardware/Software. The integration of Live, Virtual, and Constructive TADSS with Battle Command will enable larger, more robust, and rich training events at reduced cost. The end-state goal is an LVC Integrated Training Environment that approximates the Operating Environment and provides value-added training and mission rehearsal opportunities to Commanders and units.

FY 2010 funds significant development efforts on the Combat Training Center Instrumentation Systems (CTC-IS), One Tactical Engagement Simulation System (OneTESS), and further implementation of Live Training Transformation (LT2) through development of the Common Training Instrumentation Architecture (CTIA); enabling Joint training with the Joint Forces Command. The Exportable Training Capability-Instrumentation System (ETC-IS) program funding will provide for development, integration, and testing of

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - System Development and Demonstration

0604715A - Non-System Training Devices - Eng Dev

241

tracking capability, coverage and accuracy, as well as new Battle Command systems architecture to increase training fidelity for Brigade Combat Team rotations to better prepare units for deployment.

FY 2010 program funding will support system design, development, integration and demonstration of the Live, Virtual, Constructive Integrating Architecture (LVC-IA) Increment 1 capability to support DoD Training Transformation (T2) and Army Training Doctrine by providing the required integrated LVC mission rehearsal and training environment that allows Commanders, leaders, battle staffs & units to "train as they operate" as part of a Joint Task Force.

Project 573 includes a Congressional Add of \$2,990K for the Center of Excellence for Military Operations in Urban Terrain and Cultural Training. This was moved from Project 573 to 241 subsequent to the database lock for proper execution.

Accomplishments/Planned Program:

	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
FY08-FY10: Continue spiral development of CTIA to provide the common architecture capabilities that are essential for development and fielding of the CTC, Integrated Military Operations in Urbanized Terrain Training System (IMTS), HITS, and Digital Ranges Training System (DRTS) training instrumentation programs.	6978	5654	2053
FY10: Combat Training Center Instrumentation System (CTC IS) funds the development of the Range Communications Systems at the National Training Center and Joint Readiness Training Center increasing tracking coverage and accuracy in order to increase training fidelity for Brigade Combat Team rotations to better prepare units for deployment.			5051
FY10: Exportable Training Capability-Instrumentation System (ETC-IS) program funding will provide for development, integration, and testing of tracking capability, coverage and accuracy, and new Battle Command systems architecture to increase training fidelity for Brigade Combat Team rotations to better prepare units for deployment.			5268
FY08-FY10: Continues development of One Tactical Engagement Simulation System (One TESS). Refine systems architecture, develop FCS/Joint, Live/Virtual and Constructive solutions and integrate operational testing that supports the training and testing communities into current combat systems under development.	22441	23015	8590
FY08-FY09: Improvised Explosive Device Explosive Simulator (IEDES) - Develops realistic detection and reaction training against IED threats through simulated, but realistic battlefield cues and effects.	308	210	
FY09: Engagement Skills Trainer 2000 (EST) weapon enhancement development including: the M145 machine gun optics, call for and adjust indirect fires, vehicle skate ring and pedestal mounts, and the family of AN/PAS-13 thermal weapon sights.		1743	
FY08-FY09: Develop within the Virtual Patient System (VPS) an effective Tetherless Mannequin (TLM) training capability and a Medical Training Evaluation and Review (MeTER) System.	464	465	
FY08-FY09: The Homestation Instrumentation Training System (HITS) program will integrate and test LT2 products into HITS design.	1679	840	
FY10: Develop system, design, development, integration and demonstration of the Live, Virtual, Constructive Integrating Architecture (LVC-IA) Increment 1 capability.			7197
FY08: Continued development of relevancy capabilities for the Corps Battle Simulation (CBS) program.	1000		
FY09: Small Business Innovative Research/Small Business Technology Transfer Programs.		938	

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604715A - Non-System Training Devices - Eng Dev	PROJECT 241
Total	32870	32865 28159

<u>B. Other Program Funding Summary</u>	FY 2008	FY 2009	FY 2010	To Compl	Total Cost
OPA3, Appropriation NA0100 Training Devices, Non-System	336272	307483	289548	Continuing	Continuing
OPA3, Appropriation MA6601 CTC Support	21491	57159	83167	Continuing	Continuing

Comment:

C. Acquisition Strategy Competitive development efforts based on performance specifications.

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
5 - System Development and Demonstration			0604715A - Non-System Training Devices - Eng Dev							241		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
CTC IS	TBS	TBS						4595	3Q	Cont.	Cont.	Cont.
ETC IS	C/FFP	Inter-Coastal Electronics Inc., Mesa, AZ						5104	2Q		5104	5104
CTIA	C/FFP	Lockheed Martin Inc., Orlando, FL	46381	5977	1-2Q	4325	1-2Q	1651	1-2Q	Cont.	Cont.	Cont.
OneTESS	CPFF	General Dynamics, Fairfax, VA	71851	19945	1-2Q	20583	1-2Q	6304	1-2Q	Cont.	Cont.	Cont.
IEDES	MIPR	Multiple				210	2Q				210	210
EST 2000 Weapon Enhancement Development	FFP	Cubic Simulation Systems Division, Orlando, FL				1648	3Q				1648	1648
MSTC	Various	Multiple		436	3-4Q	150	3Q				586	586
HITS	FFP	Riptide, Ovideo, FL		1379	2-4Q						1379	1379
CBS Development	C/FFP	JPL, Cal Tech, Pasadena, CA	53847	1000	3Q						54847	53847
LVC-IA Development	TBS	TBS						5684	1-3Q	Cont.	Cont.	Cont.
Subtotal:			172079	28737		26916		23338		Cont.	Cont.	Cont.
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
CTIA	Multiple	Various	9175	1001	1-4Q	1329	1-4Q	402	1-4Q	Cont.	Cont.	Cont.
OneTESS	Multiple	Various	4590	685	1-4Q	667	1-4Q	676	1-4Q		6618	5939
Subtotal:			13765	1686		1996		1078		Cont.	Cont.	Cont.

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
5 - System Development and Demonstration			0604715A - Non-System Training Devices - Eng Dev							241		
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
OneTESS Development and Test	MIPR	Multiple	2058	496	1-4Q	488	1-4Q	580	1-3Q	Cont.	Cont.	Cont.
IEDES	MIPR	Multiple		308	3Q						308	308
HITS	Various	Multiple				740	1-2Q				740	740
LVC-IA Test Support	Various	Multiple						474	1-4Q	Cont.	Cont.	Cont.
Subtotal:			2058	804		1228		1054		Cont.	Cont.	Cont.
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
OneTESS Program Management	Various	PEO STRI, Orlando, FL 32826	4179	1315	1-4Q	1277	1-4Q	1030	1-4Q	Cont.	Cont.	Cont.
CTC IS Program Management	Various	PEO STRI, Orlando, FL 32826						456	1-4Q	Cont.	Cont.	Cont.
EST 2000 Program Management	Various	PEO STRI, Orlando, FL 32826				95	3-4Q				95	95
MSTC Program Management	Various	PEO STRI, Orlando, FL 32826		28	1-4Q	315	2-4Q				343	335
LVC-IA Program Management	Various	PEO STRI, Orlando, FL 32826						1039	1-4Q	Cont.	Cont.	Cont.
ETC IS Program Management	Various	PEO STRI, Orlando, FL 32826						164	2-4Q		164	399
HITS Program Management	Various	PEO STRI, Orlando, FL 32826		300	1-4Q	100	1-4Q				400	400
SBIR/STTR						938					938	
Subtotal:			4179	1643		2725		2689		Cont.	Cont.	Cont.

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604715A - Non-System Training Devices - Eng Dev						PROJECT 241		
Project Total Cost:	192081	32870		32865		28159	Cont.	Cont.	Cont.

Schedule Profile (R4 Exhibit)

May 2009

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604715A - Non-System Training Devices - Eng Dev

PROJECT
241

Event Name	FY 08				FY 09				FY 10				FY 11				FY 12				FY 13				FY 14				FY 15			
	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
OneTESS Development	[Redacted]																															
CTC IS Development	[Redacted]																															
ETC IS (Phase 2) Development & Testing	[Redacted]																															
EST 2000 Weapon Enhancement Development	[Redacted]																															
MSTC MeTER Development	[Redacted]																															
CTIA Version 2.0	[Redacted]																															
CTIA Version 2.1	[Redacted]																															
CTIA Version 2.2	[Redacted]																															
HITS Development	[Redacted]																															
LVC-IA - Increment 1 - EMD	[Redacted]																															
IEDES Development	[Redacted]																															

Schedule Detail (R4a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604715A - Non-System Training Devices - Eng Dev	PROJECT 241
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<u>Schedule Detail</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>
OneTESS Development	1Q - 4Q							
CTC IS Development			1Q - 4Q					
ETC IS (Phase 2) Development & Testing			2Q - 4Q					
EST 2000 Weapon Enhancement Development		3Q - 4Q	1Q - 2Q					
MSTC MeTER Development	3Q - 4Q	1Q - 4Q	1Q					
CTIA Version 1.6								
CTIA Version 2.0	2Q							
CTIA Version 2.1		4Q						
CTIA Version 2.2			4Q					
CTIA Version 2.3				4Q				
HITS Development	1Q - 4Q	1Q - 4Q						
LVC-IA - Increment 1 - EMD			1Q - 4Q	1Q - 4Q				
LVC-IA - Increment 2 - EMD					1Q - 4Q	1Q - 4Q		
LVC-IA - Increment 3 - EMD							1Q - 4Q	1Q - 4Q
IEDES Development	3Q - 4Q	1Q - 2Q						

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604715A - Non-System Training Devices - Eng Dev			PROJECT 573	
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
573 Program Executive Office Simulation, Training SPT	2011	4939	2050	Continuing	Continuing

A. Mission Description and Budget Item Justification: In support of Non-System Training Devices (NSTD), this project funds the US Army Program Executive Officer Simulation, Training and Instrumentation (PEO STRI) core operations supporting development of training devices and simulations by PEO STRI project managers (PM TRADE, PM ITTS, PM CATT, PM Constructive Simulation and PM Future Force.) FY 2010 funds labor in support of PEO operations.

Project 573 includes a Congressional Add of \$2,990K for the Center of Excellence for Military Operations in Urban Terrain and Cultural Training. This was moved from Project 573 to 241 subsequent to the database lock for proper execution.

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
FY08-FY10: Continues to support PEO STRI labor for project managers in PM TRADE, PM ITTS, PM CATT, PM Constructive Simulation and PM Future Force (Simulation).	1635	1550	1654
FY08-FY10: Public Law mandated the Army track FCS related work for accountability purposes. This funding represents salary dollars for three Department of the Army Civilians for the research and development of simulation systems to support the Army Future Combat System	376	388	396
FY09: Congressional Add - The Center of Excellence for Military Operations in Urbanized Terrain and Cultural Training (MOUT CoE for CT) will be designed to facilitate research and develop, test and integrate new MOUT technologies and products. Soldiers and Marines will validate the new capabilities.		2990	
Small Business Innovative Research/Small Business Technology Transfer Program		11	
Total	2011	4939	2050

B. Other Program Funding Summary Not applicable for this item.

C. Acquisition Strategy Not Applicable.

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
5 - System Development and Demonstration			0604715A - Non-System Training Devices - Eng Dev							573		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Congressional Add Center of Excellence for Military Operations in Urban Terrain and Cultural Trainin	TBS	PEO STRI, Orlando, FL 32826				2990	3-4Q				2990	
Subtotal:						2990					2990	
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:												
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:												
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
PEO STRI Labor		PEO STRI, Orlando, FL 32826		1635	1-4Q	1550	1-4Q	1654	1-4Q	Cont.	Cont.	
FCS Labor		PEO STRI, Orlando, FL 32826		376	1-4Q	388	1-4Q	396	1-4Q	Cont.	Cont.	
SBIR/STTR						11					11	

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration		PE NUMBER AND TITLE 0604715A - Non-System Training Devices - Eng Dev					PROJECT 573			
Subtotal:			2011		1949		2050		Cont.	Cont.
Project Total Cost:			2011		4939		2050		Cont.	Cont.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604715A - Non-System Training Devices - Eng Dev			PROJECT 587	
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
587 ARMY DEVELOP CTIA/TENA CAPABILITY	480	495			975

A. Mission Description and Budget Item Justification: This project funds the Joint NonKinetic Effects Model (JNEM)-Joint Conflict and Tactical Simulation (JCATS) Interoperability. To implement a robust and stable interface between the JNEM and JCATS model. Exercise software developed and upgraded is valid for training and includes all items approved by the Exercise Director and Commanders Training Objectives. Implementation of a JNEM-JCATS interface contributes to numerous mitigation issues: capability to provide training feedback in Information Operations (IO), Capability to provide improved Host Nation Representation, Capability to plan Human Intelligence (HUMINT), Capability to incorporate Non-Government Organizations (NGO), Private Voluntary Organizations (PVO), Multi-National Corporations (MNC), and US Forces Civil Affairs Higher Headquarters that Contribute to Stable Operations, and Capability to adequately replicate Other Government Agency (OGA) interaction with the Brigade Combat Team Staff.

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
FY08-09: Continue Development of JNEM for training	480	482	
Small Business Innovative Research/Small Business Technology Transfer Programs		13	
Total	480	495	

B. Other Program Funding Summary Not applicable for this item.

C. Acquisition Strategy Not applicable for this item.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

May 2009

BUDGET ACTIVITY	PE NUMBER AND TITLE				
5 - System Development and Demonstration	0604741A - Air Defense Command, Control and Intelligence - Eng Dev				
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	56549	22340	28936	Continuing	Continuing
126 FAAD C2 ED	1295	2971	3713	Continuing	Continuing
146 AIR & MSL DEFENSE PLANNING CONTROL SYS (AMC PCS)	9808	9484	15512	Continuing	Continuing
149 COUNTER-ROCKETS, ARTILLERY & MORTAR (C-RAM) DVPMT	45446	9885	9711	Continuing	Continuing

A. Mission Description and Budget Item Justification: The Air and Missile Defense Planning and Control System (AMDPCS) is an Army Objective Force System that provides integration of Air and Missile Defense (AMD) operations at all echelons. AMDPCS systems are deployed with Air Defense Artillery (ADA) brigades, Army Air and Missile Defense Commands (AAMDCs), and Air Defense and Airspace Management (ADAM) Cells at the Brigade Combat Teams (BCT's), Fires Brigades and Divisions. AMDPCS systems also provide air defense capabilities to Homeland Defense systems.

- AMDPCS has three major components:
- (1) The Air and Missile Defense Workstation (AMDWS) is an automated defense and staff planning tool that displays the common tactical and operational air picture. AMDWS provides the Battle Command (BC) capabilities embedded within the Warfighter Mission area. AMDWS is also the Net-centric interface to BC for all components of the AMD force. AMDWS provides an interoperability link to multinational air defense forces IAW Annex C to a Joint US/NATO Air Defense Agreement;
 - (2) The Air Defense System Integrator (ADSI) is a communications data link processor and display system that provides near-real time joint airspace situational awareness and fire direction command and control for Air and Missile Defense forces;
 - (3) The Army Air Defense shelter configurations use automated data processing equipment, tactical communications, Common Hardware Systems, standard vehicles and tactical power to provide AMD unit commanders and staffs with the capabilities to plan missions, direct forces, and control the airspace.

The Forward Area Air Defense Command, Control, and Intelligence (FAAD C2I) System provides continuously tailored situational awareness and situational understanding of the battlespace (including data on threat aircraft, cruise missiles and unmanned aerial vehicles (UAVs) to support the planning and decision process at various levels of command. The mission is to collect, digitally process and disseminate real time target cueing and tracking information, common tactical air picture, and C2I information to all Short Range Air Defense (SHORAD) weapons (Avenger, Bradley Linebacker, Manportable Air Defense System (MANPADS), joint and combined arms). Unique FAAD C2 software will provide this mission capability by integrating FAAD C2 engagement operations software with the Joint Digital Radio (JDR), Single Channel Ground and Airborne Radio System (SINCGARS), Enhanced Position Location Reporting System (EPLRS), Global Positioning System (GPS), Airborne Warning and Control System (AWACS), Sentinel and the Army Battle Command System (ABCS) architecture. Provides joint C2 interoperability and horizontal integration with PATRIOT, THAAD, MEADS, JLENS and SHORAD weapon systems by fusing sensor data to create a scalable and filterable single integrated air picture (SIAP) and common operating picture (COP) at Army divisions and below. System software will provide target data and engagement commands/status to the Surface Launched Advanced Medium Range Air-to-Air Missile (SLAMRAAM) air defense system. A small portion of RDTE funding is dedicated to SLAMRAAM C2 threshold requirements. FAAD C2 is the first system to digitize for Army Transformation in the First Digitized Division (FDD), III (Digitized) Corps, the Joint Contingency Force (JCF) and the STRYKER Brigade Combat Teams (SBCTs). The FAAD C2 netted and

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)**May 2009**

BUDGET ACTIVITY

PE NUMBER AND TITLE

5 - System Development and Demonstration**0604741A - Air Defense Command, Control and Intelligence - Eng Dev**

distributed system architecture has been briefed as the basis for a potential BM/C4I Future Combat System (FCS).

Counter-Rockets, Artillery and Mortar (C-RAM) is a spiral Initiative Non-Developmental program initiated by the Army Chief of Staff in response to Iraqi threat and twice validated theater ONS. The primary mission of the C-RAM program is to develop, procure, field and maintain a system of systems that can detect rocket, artillery or mortar launches; warn the defended area with sufficient time for personnel to take cover; intercept rounds in flight, thus preventing damage to ground forces or facilities; and enhance response to and defeat of enemy forces. C-RAM utilizes a system of systems (SoS) approach, and is comprised of a combination of multi-service fielded and non-developmental item (NDI) sensors, command and control (C2) systems and a modified U.S. Navy intercept system, with a low cost commercial off-the-shelf (COTS) warning system and wireless local area network. The system will be fielded to various fixed or sites, providing them correlated air and ground pictures and linking them to the Army Battle Command System (ABCS) and the Joint Defense Network (JDN), via various forms of communications to provide situational awareness and exchange of timely and accurate information to synchronize and optimize automated Shape, Sense, Warn, Intercept, Respond and Protect decisions.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

May 2009

BUDGET ACTIVITY	PE NUMBER AND TITLE		
5 - System Development and Demonstration	0604741A - Air Defense Command, Control and Intelligence - Eng Dev		
<u>B. Program Change Summary</u>	FY 2008	FY 2009	FY 2010
Previous President's Budget (FY 2009)	21375	22415	23267
Current BES/President's Budget (FY 2010)	56549	22340	28936
Total Adjustments	35174	-75	5669
Congressional Program Reductions		-75	
Congressional Rescissions			
Congressional Increases			
Reprogrammings	35751		
SBIR/STTR Transfer	-577		
Adjustments to Budget Years			5669

Change Summary Explanations: Funding: FY10 increase is for FAAD C2 shortfalls in IPV6 implementation and software re-hosting. Also funds AMDPCS Air Defense Software Blocking, Air Defense functionality, AMD interfaces to other Air Defense Systems, and ADSI 15.0, 15.1 functionality.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604741A - Air Defense Command, Control and Intelligence - Eng Dev			PROJECT 126	
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
126 FAAD C2 ED	1295	2971	3713	Continuing	Continuing

A. Mission Description and Budget Item Justification: The Forward Area Air Defense Command and Control (FAAD C2) system collects, digitally processes, and disseminates real-time target cuing and tracking information; the common tactical air picture; and command, control, and intelligence information to all Maneuver Air and Missile Defense (MAMD) weapon systems (Avenger and Man-Portable Air Defense System (MANPADS), and joint and combined arms systems. The FAAD C2 system provides alerting data to air defense gunners, airspace battle management, and up-linking of mission operations, thereby enhancing force protection against air and missile attack. Situational awareness and targeting data is provided on threat aircraft, cruise missiles, and unmanned aerial systems (UAS). The FAAD C2 system provides this mission capability by integrating dynamic FAAD C2 engagement operations software with the Multifunctional Information Distribution System (MIDS), Joint Tactical Terminal (JTT), Single Channel Ground and Airborne Radio System (SINCGARS), Enhanced Position Location System (EPLRS), Global Positioning System (GPS), Airborne Warning and Control Systems (AWACS), Sentinel radar, and the Army Battle Command System (ABCS) architecture. In addition, FAAD C2 provides interoperability with Joint C2 systems and horizontal integration with PATRIOT, Theater High-Altitude Area Defense (THAAD), Medium Extended Air Defense System (MEADS), and the Joint Land Attack Cruise Missile Defense Elevated Netted Sensor (JLENS) by fusing sensor data to create a scalable and filterable Single Integrated Air Picture (SIAP) and common tactical picture. The system software is a key component of the Air Defense and Airspace Management (ADAM) Cell that is being fielded to Stryker Brigade Combat Teams (SBCT), Brigade Combat Teams (BCTs), and Division Headquarters as part of the Army's modularity concept. System software is able to provide target data and engagement commands/status to MAMD Battalions. FAAD C2 is also a principal air defense system within the Homeland Security Program. Soldiers from activated ARNG MAMD battalions operate the FAAD C2 systems in the National Capital Region and other locations.

Program funding enables fielding of equipment to the current force to support the Army's Program Objective to rapidly respond to immediate threats to Soldiers, identifies promising technologies, procures and integrates those capabilities for deployed forces in the same year. As capability gaps are identified by deployed forces, this program provides the ability for the Army to procure high priority/high leverage technology from industry during the same year, with the highest priority going to candidates that cover a multitude of gap areas. Program funding provides a method to rapidly keep pace with leading edge technologies and maintain interoperability and backwards compatibility caused by improvement to other system components (upgrade from common hardware version 2 to 3 and EPLRS enhancements).

In support of the Global War on Terrorism, FAAD C2 systems are in MAMD units and ADAM Cells deployed to Iraq and Afghanistan. These FAAD systems are critical in providing the local air picture to supported units and higher headquarters. FAAD C2 systems will also provide target tracks and weapon controls for the initial C-RAM capability deployed to Iraq.

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
Support FAAD C2 software development for new Air and Missile Defense Composite Battalions, including unique software enhancements in support of Homeland Defense and security accreditation upgrades. Integrate Sentinel radar Enhanced Target, Range and Classification (ETRAC). Continue integration of interfaces for the Joint Tactical Terminal (JTT), and design Joint Tactical Radio System	1295		3267

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604741A - Air Defense Command, Control and Intelligence - Eng Dev	PROJECT 126
(JTRS) interfaces. Incorporate IFF modes 1,2 and 3 (active decode) capabilities.		
Implement software modifications necessary for Internet Protocol version 6 (IPv6).		
Small Business Innovative Research/Small Business Technology Transfer Program (SBIR/STTR)		
Total	1295	3713

<u>B. Other Program Funding Summary</u>	FY 2008	FY 2009	FY 2010	To Compl	Total Cost
OPA 2, AD5050 - FAAD C2	32001	7467	8289	Continuing	Continuing
Spares (BS9702) - FAAD C2				Continuing	Continuing

Comment:

C. Acquisition Strategy The FAAD C2 acquisition strategy relies on evolutionary software development to rapidly meet the demands of air defense battle management/command, control, communications, computers, and intelligence (BM/C4I) requirements, and to keep pace with automated information technologies. The concept of evolutionary software development is being followed and will be accomplished in Blocks I, II, and III. Blocks I and II and III have been completed. Left to be completed is the Implementation of IPv6.

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration			PE NUMBER AND TITLE 0604741A - Air Defense Command, Control and Intelligence - Eng Dev							PROJECT 126		
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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Northrop Grumman/TRW, BLK I	C/CPIF	Carson, CA	176461								176461	
Northrop Grumman/TRW, BLK II	SS/CPIF	Carson, CA	32206								32206	
Northrop Grumman/TRW, BLK III	SS/CPIF	Carson, CA	106360							Cont.	98961	
Northrop Grumman/TRW	SS/T&M	Carson, CA	13567	92	1Q	205	1Q	340	1Q	Cont.	Cont.	
Northrop Grumman			4276	769	1Q	1797	1Q	2248	1Q	Cont.	Cont.	
Program Management Administration	MIPR	Various	38159	130	2Q	296	2Q	296	2Q	Cont.	Cont.	
Sentinel GBS	MIPR	Huntsville, AL	3791								3791	
JTIDS	MIPR	Ft. Monmouth, NJ	6000							Cont.	6000	
ABCS SE&I	MIPR	Ft Monmouth, NJ	346								346	
Software Engineering	Various	Various	20852	93	1-4Q	206	1-4Q	257	1-4Q	Cont.	Cont.	
C-RAM Sense, Warn & Intercept	Various	Variuos	83842								83842	
Subtotal:			485860	1084		2504		3141		Cont.	Cont.	

II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:												

III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
ADATD	MIPR	Ft Bliss, TX	12580	37	1-4Q	83	1-4Q	104	1-4Q	Cont.	Cont.	

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration			PE NUMBER AND TITLE 0604741A - Air Defense Command, Control and Intelligence - Eng Dev						PROJECT 126			
RTTC	MIPR	WSMR, NM	2947							Cont.	Cont.	
AATD	MIPR	Ft Eustis, VA	365	7	1-4Q	13	1-4Q	23		Cont.	Cont.	
ATEC	MIPR	Alexandria, VA	2234	36	1-4Q	81	1-4Q	99		Cont.	Cont.	
Yuma Proving Ground	MIPR	Yuma, AZ	8098	131	1-4Q	290	1-4Q	346		Cont.	Cont.	
Subtotal:			26224	211		467		572		Cont.	Cont.	

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:												

Remarks: Not Applicable

Project Total Cost:			512084	1295		2971		3713		Cont.	Cont.	
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Schedule Profile (R4 Exhibit)

May 2009

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604741A - Air Defense Command, Control and Intelligence - Eng Dev

PROJECT
126

Event Name	FY 08				FY 09				FY 10				FY 11				FY 12				FY 13				FY 14				FY 15			
	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) V5.4B Materiel Release									▲ V5.4B Materiel Release																							
(2) IFPC / FAAD C2 SW Materiel Release																	▲ IFPC/FAAD C2 SW Materiel Release															
V5.4 Upgrades	V5.4 Upgrades																															
FAAD Software Modifications for Future Hardware versions	FAAD Software Modifications for Future Hardware versions																															
FAAD SW Upgrades for Homeland Defense	FAAD SW Upgrades for Homeland Defense																															
Software Upgrades for local Sensor Interfaces (Sentinel)									SW Upgrades for local Sensor Interfaces (Sentinel)																							
NCR-IADS Phase II Operational Test/Operational User Evaluation, V5.4B-11.2p1																	NCR OT															
(3) C-RAM Demo									▲ C-RAM Demo																							
(4) IFPC Increment I Operational Assessment																	▲ IFPC Inc I OA															
(5) IFPC Increment I Initial Operation Test & Evaluation													▲ IFPC Increment I IOTE																			

Schedule Detail (R4a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604741A - Air Defense Command, Control and Intelligence - Eng Dev	PROJECT 126
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<u>Schedule Detail</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>
V5.4B Materiel Release			1Q					
IFPC / FAAD C2 SW Materiel Release			4Q					
V5.4 Upgrades	2Q - 4Q	1Q - 2Q						
FAAD Software Modifications for Future Hardware versions	1Q - 4Q							
FAAD SW Upgrades for Homeland Defense	1Q - 4Q							
Software Upgrades for local Sensor Interfaces (Sentinel)			1Q - 4Q	1Q - 4Q	1Q - 4Q			
NCR-IADS Phase II Operational Test/Operational User Evaluation, V5.4B-11.2p1		3Q - 4Q						
C-RAM Demo	4Q							
IFPC Increment I Operational Assessment			2Q					
IFPC Increment I Initial Operation Test & Evaluation				2Q				

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration		PE NUMBER AND TITLE 0604741A - Air Defense Command, Control and Intelligence - Eng Dev			PROJECT 146	
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost	
146 AIR & MSL DEFENSE PLANNING CONTROL SYS (AMC PCS)	9808	9484	15512	Continuing	Continuing	

A. Mission Description and Budget Item Justification: The Air and Missile Defense Planning and Control System (AMDPCS) is an Army Objective Force System that provides integration of Air and Missile Defense (AMD) operations at all echelons. AMDPCS systems are deployed with Air Defense Artillery (ADA) brigades, Army Air and Missile Defense Commands (AAMDCs), and Air Defense and Airspace Management (ADAM) Cells at the Brigade Combat Teams (BCT's), Fires Brigades and Divisions. AMDPCS systems also provide air defense capabilities to Homeland Defense systems. The development of ADAM Cells is essential in fulfilling the Army's Modularity requirement. ADAM Cells provide the Commander at BCTs, Brigades and Divisions with air defense situational awareness and airspace management capabilities. They also provide the interoperability link with Joint, multinational and coalition forces. AMDPCS components are vital in the transformation of ADA units and the activation of the Maneuver Air & Missile Defense (MAMD) Composite Battalions. AMDPCS has three major components:

- (1) The Air and Missile Defense Workstation (AMDWS) is an automated defense and staff planning tool that displays the common tactical and operational air picture. AMDWS provides the Battle Command (BC) capabilities embedded within the Warfighter Mission area. AMDWS is also the Net-centric interface to BC for all components of the AMD force. AMDWS provides an interoperability link to multinational air defense forces IAW Annex C to a Joint US/NATO Air Defense Agreement;
- (2) The Air Defense System Integrator (ADSI) is a communications data link processor and display system that provides near-real time, 3-dimensional, joint airspace situational awareness and fire direction command and control for Air and Missile Defense forces;
- (3) The Army Air Defense shelter configurations use automated data processing equipment, tactical communications, Common Hardware Systems, standard vehicles and tactical power to provide AMD unit commanders and staffs with the capabilities to plan missions, direct forces, and control the airspace.

In support of the Global War on Terrorism (GWOT), AMDWS and ADSIs are vital components of the AMDPCS shelter systems fielded to ADAM Cells that have deployed to Iraq and Afghanistan. In addition, these components have also been integrated into non-ADA higher headquarters such as the Coalition Forces Land Component Command (CFLCC). AMDWS is a critical component in the integration and fielding of a Counter-Rocket, Artillery and Mortar (C-RAM) capability to Operating Bases in Iraq and elsewhere. In support of Homeland Defense missions, the AMDWS has been integrated as the Force Operations component into the Joint Service/Air Force architecture. These AMDPCS systems provide the common tactical air picture, a major component of the Common Operating Picture (COP), and are critical to the development and planning of offensive and defensive operations.

FY10 funds the development, software engineering, testing and certification of the AMDWS, ADSI, and sheltered subsystem software as described below.

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
Continue AMDWS development and support of LANDWARNET/Battle Command Framework. Complete AMDWS software engineering and development consistent with Software Block 2, 2+ and 3 requirements, evolving the air and missile defense planning and	5503	5716	9759

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE								PROJECT	
5 - System Development and Demonstration			0604741A - Air Defense Command, Control and Intelligence - Eng Dev								146	
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Northrop Grumman/TRW	SS/CPIF	Huntsville, AL	54950	5621		5593		9301		Cont.	Cont.	
ULTRA Electronics, ADSI	SS/CPIF	Austin, TX	5882	144		133		219		Cont.	Cont.	
Program Management Administration	Various	Various	29516	3267		3099		4990		Cont.	Cont.	
ABCS SE&I	MIPR	Ft Monmouth, NJ	619								619	
Software Engineering	Various	Various	7906	718		607		919		Cont.	Cont.	
Subtotal:			98873	9750		9432		15429		Cont.	Cont.	
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:												
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Certification	MIPR	JITC, Ft Huachuca, AZ	717	36		33		53		Cont.	Cont.	
Interoperability Assessment	MIPR	CTSF, Ft. Hood, TX	1170	22		19		30		Cont.	Cont.	
Subtotal:			1887	58		52		83		Cont.	Cont.	
IV. Management Services	Contract Method &	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award	FY 2009 Cost	FY 2009 Award	FY 2010 Cost	FY 2010 Award	Cost To Complete	Total Cost	Target Value of

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
**0604741A - Air Defense Command, Control and Intelligence - Eng
 Dev**

PROJECT
146

	Type				Date		Date		Date		Contract
Subtotal:											

Remarks: Not Applicable

Project Total Cost:	100760	9808		9484		15512		Cont.	Cont.	
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Schedule Profile (R4 Exhibit)

May 2009

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604741A - Air Defense Command, Control and Intelligence - Eng Dev

PROJECT
146

Event Name	FY 08				FY 09				FY 10				FY 11				FY 12				FY 13				FY 14				FY 15			
	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) AMDWS V6.4 Full Materiel Release (FMR), (2) ADAM FMR, (3) AMDWS V6.4.2 FMR AMDWS v6.4 FMR	▲1			▲2				▲3				▲4																				
(4) ADAM Full Rate Production Milestone Decision, (5) ATO ADAM FRP				▲4				▲5				▲6																				
AMDWS/ADSI Software Development	AMDWS/ADSI SW Development																															
AMDWS Capability Sets, ,									Capability Set 11-12								Capability Set 13-14								15-16							
AMDWS AMD Interfaces : Patriot - C2BMC - THAAD-JLENS - SLAMRAAM - MEADS- TBMCS	AMDWS AMD Interfaces																															
ADA BDE & ADAM Cell Technology Refresh	BDE & ADAM Cell Technology Refresh																															
ADSI Service Level Testing and Joint Interoperability Certification	ADSI Service Level Testing and Joint Interoperability Certification																															
ADSI Migration to Joint Common Data Link	Migration to Joint Common Data Link																															
AMDWS Software Block Testing, Certification, Test Fix Test	AMDWS SWB Testing (Includes Intra-Army Interoperability Certification)																															
(6) AMDPCS LOG DEMO, (7) C-RAM / ADAM Demo, (8) IFPC OA, (9) IFPC IOTE Log Demo C-RAM/ADAM Demo	▲6			▲7				▲8				▲9																				
(10) Joint Project Optic Windmill, (11) EWF/TATD, (12) JPOW, (13) EWF/TATD, (14) JPOW, (15) EWF/TATD, (16) JPOW, (17) EWF/TATD				▲10				▲11				▲12				▲13				▲14				▲15				▲16				▲17

Schedule Detail (R4a Exhibit)

May 2009

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604741A - Air Defense Command, Control and Intelligence - Eng Dev

PROJECT
146

<u>Schedule Detail</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>
AMDWS V6.4 Full Materiel Release (FMR)	1Q							
ADAM FMR	4Q							
AMDWS V6.4.2 FMR			1Q					
ADAM Full Rate Production Milestone Decision	4Q							
ATO			1Q					
AMDWS/ADSI Software Development	1Q - 4Q							
AMDWS Capability Sets				1Q - 4Q	1Q - 4Q			
						1Q - 4Q	1Q - 4Q	
								1Q - 4Q
AMDWS AMD Interfaces : Patriot - C2BMC - THAAD- JLENS - SLAMRAAM - MEADS-TBMCS					1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q
ADA BDE & ADAM Cell Technology Refresh					1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q
ADSI Service Level Testing and Joint Interoperability Certification	1Q - 4Q							
ADSI Migration to Joint Common Data Link					1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q
AMDWS Software Block Testing, Certification, Test Fix Test	1Q - 4Q							
AMDPCS LOG DEMO	1Q							
C-RAM / ADAM Demo	4Q							
IFPC OA			2Q					
IFPC IOTE				2Q				
Joint Project Optic Windmill	4Q							
EWf/TATD		4Q						
JPOW			3Q					

EWF/TATD				4Q				
JPOW					3Q			
EWF/TATD						4Q		
JPOW							3Q	
EWF/TATD								4Q

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration		PE NUMBER AND TITLE 0604741A - Air Defense Command, Control and Intelligence - Eng Dev			PROJECT 149
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
149 COUNTER-ROCKETS, ARTILLERY & MORTAR (C-RAM) DVPMT	45446	9885	9711	Continuing	Continuing

A. Mission Description and Budget Item Justification: Counter-Rockets, Artillery and Mortar (C-RAM) is an evolutionary Non-Developmental program initiated by the Army Chief of Staff in response to Iraqi threat and twice validated theater ONS. The primary mission of the C-RAM program is to develop, procure, field and maintain a system of systems that can detect rocket, artillery or mortar launches; warn the defended area with sufficient time for personnel to take cover; intercept rounds in flight, thus preventing damage to ground forces or facilities; and enhance response to and defeat of enemy forces. The C-RAM current capability utilizes a system of systems (SoS) approach, and is comprised of a combination of multi-service fielded and non-developmental item (NDI) sensors, command and control (C2) systems and a modified U.S. Navy intercept system, with a low cost commercial off-the-shelf (COTS) warning system and wireless local area network. The system is currently fielded to fifteen sites, providing them correlated air and ground pictures and linking them to the Army Battle Command System (ABCS) and the Joint Defense Network (JDN), via various forms of communications to provide situational awareness and exchange of timely and accurate information to synchronize and optimize automated Shape, Sense, Warn, Intercept, Respond and Protect decisions.

The fielding of the C-RAM SoS was accomplished through an incremental acquisition process driven by urgent operational needs, theater priorities and emerging capability requirements to provide counter-RAM capability to fielded forces. The C-RAM Program Office has fielded equipment to fifteen (15) Forward Operating Bases (FOBs) (Sense, Warn and Intercept to three (3) FOBs; Sense and Warn to fifteen (15) additional FOBs). The C-RAM SoS approach was validated by a Proof of Principle demonstration in December 2004 and Army Test and Evaluation Command (ATEC) tests in Feb 05, Apr 05, Jul 05, Nov-Dec 05, Sep-Oct 06 and Sep-Oct 08 with another demonstration scheduled for Aug-Sep 09.

Current development efforts include the implementation of improvements and upgrades to fielded C-RAM and the initial development of Indirect Fire Protection Capability (IFPC) capabilities. C-RAM is the current program for the Iraq theater of operations. The follow-on program to address future requirements (mobile, semi-fixed and fixed sites) will be titled Indirect Fire Protection Capability (IFPC). In parallel with a Joint Fires Integration and Interoperability Team (JFIIT) led effort to develop JCIDS documentation for IFPC program initiation, the Army is pursuing designation of IFPC as a Program of Record and establishment of a program office to provide materiel developer input to the JCIDS documentation.

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
Develop advanced user interface/capabilities	35161		
Test/demonstration support for new C-RAM capabilities	10285	1716	1993
Develop Threat Evaluation and Weapons Assignment (TEWA) capabilities		2710	2590
Integrate with Rapid Digital "Clearance of Fires"		1993	1912
Develop Advanced Defense Design System Exerciser		1993	1993

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604741A - Air Defense Command, Control and Intelligence - Eng Dev	PROJECT 149
Support Joint, Interagency and Multi-national (JIM) interoperability (Common Link Integration Processing (CLIP) integration, communications improvement)		1196
Small Business Innovative Research/Small Business Technology Transfer Program (SBIR/STTR)		277
Total	45446	9885

<u>B. Other Program Funding Summary</u>	FY 2008	FY 2009	FY 2010	To Compl	Total Cost
OPA 2 BZ0526- COUNTER-ROCKETS, ARTILLERY& MORTAR (C-RAM)	225772			Continuing	Continuing

Comment:

C. Acquisition Strategy The C-RAM program is following an evolutionary acquisition strategy for rapid acquisition of mature technology to the user. The approach will deliver capabilities in increments, recognizing up front the need for future improvements. The objective of the strategy is to balance needs and available capability with resources and put a robust capability to engage rockets, artillery, and mortars into the hands of the user quickly. Success will depend on continuous user feedback, consistent definition of capability needs, maturation of technology, and allocation of required resources. To achieve the evolutionary acquisition of C-RAM, the program director will collaborate and coordinate with the user, combat developer, tester, logistician, PEO C3T, and resource provider (e.g., G8). The program will follow the incremental development process (per DoDI 5000.02), where each increment is a military useful and supportable operational capability. The Capability Production Document (CPD) for IFPC Increment I (improved sense and warn) is currently in 3-Star Staffing with an AROC planned 3QFY09. A Capability Development Document (CDD) will be developed for IFPC Increment II (Interceptor and upgrades to other IFPC functions as required) based on the results of the Analysis of Alternatives (AoA).

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE								PROJECT	
5 - System Development and Demonstration			0604741A - Air Defense Command, Control and Intelligence - Eng Dev								149	
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Northrop Grumman	ID/IQ CPFF	Carson, CA		12000		2117		2113		Cont.	Cont.	70500
Nortrop Grumman	CPIF	Carson, CA		32010		6332		6161		Cont.	Cont.	40000
Program Management Administration	MIPR	Various		1436	2Q	1436	2Q	1437	2Q	Cont.	Cont.	
Subtotal:				45446		9885		9711		Cont.	Cont.	110500
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:												
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:												
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:												

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604741A - Air Defense Command, Control and Intelligence - Eng Dev						PROJECT 149			
Project Total Cost:		45446		9885		9711		Cont.	Cont.	110500

Schedule Profile (R4 Exhibit)

May 2009

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604741A - Air Defense Command, Control and Intelligence - Eng Dev

PROJECT
149

Event Name	FY 08				FY 09				FY 10				FY 11				FY 12				FY 13				FY 14				FY 15			
	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
C-RAM Improvements Effort	C_RAM Improvements Effort																															
C-RAM Sense, Warn & Respond Demonstration																																
(1) IFPC Increment I Army Requirements Oversight Council																																
C-RAM / IFPC LPWS Spiral 5 Demonstration																																
(2) IFPC Increment I Operational Assessment																																
(3) IFPC Increment I Milestone C																																
(4) IFPC Increment I Initial Operational Test & Evaluation																																
(5) IFPC Increment I Full Rate Production																																
IFPC Increment I Production / Fielding																																
IFPC Increment II Development																																

Schedule Detail (R4a Exhibit)

May 2009

BUDGET ACTIVITY		PE NUMBER AND TITLE						PROJECT
5 - System Development and Demonstration		0604741A - Air Defense Command, Control and Intelligence - Eng Dev						149
<u>Schedule Detail</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>
C-RAM Improvements Effort	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q
C-RAM Sense, Warn & Respond Demonstration	4Q	1Q						
IFPC Increment I Army Requirements Oversight Council		3Q						
C-RAM / IFPC LPWS Spiral 5 Demonstration		4Q						
IFPC Increment I Operational Assessment			2Q					
IFPC Increment I Milestone C			4Q					
IFPC Increment I Initial Operational Test & Evaluation				2Q				
IFPC Increment I Full Rate Production				4Q				
IFPC Increment I Production / Fielding					1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q
IFPC Increment II Development				3Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

May 2009

BUDGET ACTIVITY		PE NUMBER AND TITLE			
5 - System Development and Demonstration		0604742A - CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT			
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	30737	26158	33213	Continuing	Continuing
361 INTELLIGENCE SIMULATION SYSTEMS (MIP)	4115	2805	9298	Continuing	Continuing
362 Jnt Land Component Constructive Trng Capability	26622	23353	23915	Continuing	Continuing

A. Mission Description and Budget Item Justification: This program element funds the development of constructive and wargame simulations used to realistically train commanders and their battle staffs on today's complex battlefield conditions. Project D361 funds the development of the Intelligence Electronic Warfare Tactical Proficiency Trainer (IEWTPT) that provides Warfighting Commanders at all echelons the ability to train with Intelligence, Surveillance, and Reconnaissance (ISR) products based on realistic ISR assets, people (including the maneuver commander, G-2, G-3, collection manager, analyst/operator) and processes. IEWTPT provides embedded training capability for Future Combat Systems (FCS) ISR systems. IEWTPT will interface/stimulate ISR systems including Tactical Unmanned Aerial Vehicle (TUAV), Joint Surveillance Target Attack Radar System-Common Ground Station (JSTARS-CGS), Tactical Exploitation System/Distributed Tactical Exploitation System (TES/DTES), Guardrail, Counter Intelligence/Human Intelligence Management Systems (CHIMS), Prophet and Distributed Common Ground Station-Army (DCGS-A). IEWTPT is the only Army Simulation System supporting ISR training from the Warfighter to the Military ISR Analyst/System Operator. Project 362, Joint Land Component Constructive Training Capability (JLCCTC), develops the Army's premier wargame simulation for training leaders and Battle Staffs at Brigade, Division, Corps, and echelons above Corps. JLCCTC will provide functionality not currently available (digital, stability, support and information operations), link to unit organizational Command, Control, Communications, Computers and Integration (C4I) equipment, improve exercise generation and after-action reporting. WARSIM will interoperate with One Semi Automated Forces (OneSAF) and other simulations as an integral part of an Army simulation toolkit, so that a warfighter training exercise can represent in simulation all Army echelons and can also be represented in a Joint environment. JLCCTC pulls together current constructive simulation systems and future constructive simulations and uses a comprehensive strategy to ensure interoperability among all of those systems. This strategy will allow JLCCTC to meet current and future user needs. JLCCTC leverages the best pieces of current systems to meet current training needs and evolves to meet the training needs of the future.

FY10 funding continues product improvements with annual spiral releases of the Intelligence Electronic Warfare Tactical Proficiency Trainer (IEWTPT) and continues development of Joint Land Component Constructive Training Capability (JLCCTC).

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

May 2009

BUDGET ACTIVITY	PE NUMBER AND TITLE		
5 - System Development and Demonstration	0604742A - CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT		
<u>B. Program Change Summary</u>	FY 2008	FY 2009	FY 2010
Previous President's Budget (FY 2009)	31645	26244	16996
Current BES/President's Budget (FY 2010)	30737	26158	33213
Total Adjustments	-908	-86	16217
Congressional Program Reductions		-86	
Congressional Rescissions			
Congressional Increases			
Reprogrammings	-226		
SBIR/STTR Transfer	-682		
Adjustments to Budget Years			16217

Change Summary Explanation:

FY 2010: Funding increase of \$8,760 thousand in support of the Intelligence Electronic Warfare Tactical Proficiency Trainer (IEWTPT) program and \$7,457 thousand for the Joint Land Component Constructive Training Capability (JLCCTC) program.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration		PE NUMBER AND TITLE 0604742A - CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT			PROJECT 361	
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost	
361 INTELLIGENCE SIMULATION SYSTEMS (MIP)	4115	2805	9298	Continuing	Continuing	

A. Mission Description and Budget Item Justification: Intelligence Electronic Warfare Tactical Proficiency Trainer (IEWTPT) provides Warfighting Commanders at all echelons the ability to train with Intelligence, Surveillance, and Reconnaissance products based on realistic assets, people (including the maneuver commander, G-2, G-3, collection manager, analyst/operator) and processes. IEWTPT Technical Control Cell (TCC) and HUMINT Control Cell (HCC) provides the enhancements to simulated battlefields required to stimulate ISR systems in their go to war equipment. IEWTPT interoperates with the Army's constructive simulation training systems and actual operator level field equipment identified as Target Signature Arrays. IEWTPT will interface/stimulate ISR systems including Tactical Unmanned Aerial Vehicle (TUAV), Joint Surveillance Target Attack Radar System-Common Ground Station (JSTARS-CGS), Tactical Exploitation System/Distributed Tactical Exploitation System (TES/DTES), Guardrail, Counter Intelligence/Human Intelligence Management Systems (CHIMS), Prophet and Distributed Common Ground Station-Army (DCGS-A). IEWTPT is the only Army Simulation System supporting ISR training from the Warfighter to the Military ISR Analyst/System Operator.

The FY 2010 funding will continue product improvements with annual spiral releases in the 4th Quarter of each year. Improvements in the Human intelligence (HUMINT) and Signals Intelligence (SIGINT) will coincide with tactical fielded Intelligence, Surveillance and Reconnaissance systems.

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
FY08-09: Service Oriented Architecture (SOA) has been completed, however, upgrades are required as new functionality is added. Continue HUMINT and SIGINT capabilities development.	4115	2805	
FY10: Continue product improvement with annual version releases in the 4th Quarter of each year. Improvements in Human Intelligence (HUMINT) and Signals intelligence (SIGINT), initiate Measurement and Signatures Intelligence (MASINT) requirements development and migrate existing Imagery Intelligence (IMINT) capability into Geospatial Intelligence (GEOINT) capability. Activities will coincide with tactical fielded Intelligence, Surveillance and Reconnaissance systems.			9298
Total	4115	2805	9298

<u>B. Other Program Funding Summary</u>	FY 2008	FY 2009	FY 2010	To Compl	Total Cost
OPA3, Appropriation NA0102, Training Devices, Nonsystem, Intelligence	869	798	8949	Continuing	Continuing

Comment:

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY

5 - System Development and Demonstration

PE NUMBER AND TITLE

**0604742A - CONSTRUCTIVE SIMULATION SYSTEMS
DEVELOPMENT**

PROJECT

361

C. Acquisition Strategy Competitive development based on performance specifications.

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
5 - System Development and Demonstration			0604742A - CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT							361		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
IEWTPT Eng & Manufacturing Dev.	CPIF	Gen Dynamics C4 Systems, Orlando, FL	24520	3027	1-3Q	1456	1-3Q				29003	28833
IEWTPT Eng & Manufacturing Dev.	Multiple	Gen Dynamics C4 Systems, Orlando, FL	737			225	1-4Q	6800	1-4Q	Cont.	Cont.	Cont.
Subtotal:			25257	3027		1681		6800		Cont.	Cont.	Cont.
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
IEWTPT Engineering & Technical Support	Multiple	Various	2171	100	1-4Q	207	1-4Q	506	1-4Q	Cont.	Cont.	Cont.
Subtotal:			2171	100		207		506		Cont.	Cont.	Cont.
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
IEWTPT TEMP Support	Various	Multiple	319								319	319
IEWTPT Operational Test Event Support	Various	Multiple	359	453	1-3Q	281	1-3Q	1089	1-4Q	Cont.	Cont.	Cont.
Test Engineer Support	various	Multiple	1313			270	1-3Q	500	1-4Q	Cont.	Cont.	Cont.
Subtotal:			1991	453		551		1589		Cont.	Cont.	Cont.
IV. Management Services	Contract	Performing Activity &	Total	FY 2008	FY 2008	FY 2009	FY 2009	FY 2010	FY 2010	Cost To	Total	Target

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604742A - CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT

PROJECT
361

	Method & Type	Location	PYs Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Complete	Cost	Value of Contract
IEWTPT Program Management	Various	Multiple	1897	535	1-4Q	366	1-4Q	403	1-4Q	Cont.	Cont.	Cont.
Subtotal:			1897	535		366		403		Cont.	Cont.	Cont.
Project Total Cost:			31316	4115		2805		9298		Cont.	Cont.	Cont.

Schedule Profile (R4 Exhibit)

May 2009

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604742A - CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT

PROJECT
361

Event Name	FY 08				FY 09				FY 10				FY 11				FY 12				FY 13				FY 14				FY 15																													
	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																										
TCC/HCC Development/Integration/Improvements																																																										
(1) Version 3.0 Security Accred., (2) Version 3.0 Release	▲▲ 1 2																																																									
(3) Version 4.0 Security Accred., (4) Version 4.0 Release																													▲▲ 3 4																													
(5) Version 5.0 Security Accred., (6) Version 5.0 Release																													▲▲ 5 6																													

Schedule Detail (R4a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604742A - CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT	PROJECT 361
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<u>Schedule Detail</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>
TCC/HCC Development/Integration/Improvements	1Q - 4Q							
Version 3.0 Security Accred.	3Q							
Version 3.0 Release	3Q							
Version 4.0 Security Accred.		3Q						
Version 4.0 Release		3Q						
Version 5.0 Security Accred.			3Q					
Version 5.0 Release			3Q					
Version 6.0 Security Accred.				3Q				
Version 6.0 Release				3Q				
Version 7.0 Security Accred.					3Q			
Version 7.0 release					3Q			
Version 8.0 security Accred.						3Q		
Version 8.0 Release						3Q		
Version 9.0 Security Accred.							3Q	
Version 9.0 Release							3Q	
Version 10.0 Security Accred.								3Q
Version 10.0 Release								3Q

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration		PE NUMBER AND TITLE 0604742A - CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT			PROJECT 362
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
362 Jnt Land Component Constructive Trng Capability	26622	23353	23915	Continuing	Continuing

A. Mission Description and Budget Item Justification: This Project funds the development of the Joint Land Component Constructive Training Capability (JLCCTC), the Army's premier wargaming simulations for training leaders and Battle Staffs from Battalion through echelons above Corps. JLCCTC pulls together current constructive simulation systems and future constructive simulations and uses a comprehensive strategy to ensure interoperability among all of those systems. JLCCTC will provide functionality not currently available (digital operations, stability and support operations and information operations), link to organic Battle Commands equipment, and improve exercise generation and after-action reporting.

The FY 2010 funding continues the development of the Army training system, integration and system evaluation. The JLCCTC leverages the best capabilities of current systems to meet current training needs and evolves to meet the training needs of the future force.

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
FY08-FY10: Verify and validate JLCCTC software models.	2243	1888	1943
FY08-FY10: Continue integration of JLCCTC components for interoperability.	15623	13395	14356
FY08-FY10: Develop and integrate user interface enhancements for Army training applications.	5392	4677	4753
FY08-FY10: Develop and evaluate system performance and conduct system test events.	3364	2831	2863
Small Business Innovative Research/Small Business Technology Transfer Programs.		562	
Total	26622	23353	23915

<u>B. Other Program Funding Summary</u>	FY 2008	FY 2009	FY 2010	To Compl	Total Cost
OPA, NA0103, NSTD Command & Control	26426	17241	21571	Continuing	Continuing

Comment:

C. Acquisition Strategy Competitive development based on performance specifications.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY

5 - System Development and Demonstration

PE NUMBER AND TITLE

**0604742A - CONSTRUCTIVE SIMULATION SYSTEMS
DEVELOPMENT**

PROJECT

362

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ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
5 - System Development and Demonstration			0604742A - CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT							362		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
WARSIM Development of Army Training System	CPFF	Lockheed Martin Info Systems, Orlando, FL	72642	11091	1-3Q	10500	1-3Q	10651	1-3Q	Cont.	Cont.	Cont.
Integration of JLCCTC	Multiple	Various	26996	7207	1-2Q	5101	1-2Q	5373	1-2Q	Cont.	Cont.	Cont.
Development of logistics model	T&M	Tapestry, San Diego, CA	10692	2500	1-2Q	2300	1-2Q	2264	1-2Q	Cont.	Cont.	Cont.
Subtotal:			110330	20798		17901		18288		Cont.	Cont.	Cont.
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Engineering & Tech Spt	Multiple	Various	6069	430	1-3Q	430	1-3Q	650	1-3Q	Cont.	Cont.	Cont.
Subtotal:			6069	430		430		650		Cont.	Cont.	Cont.
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Verification, Validation and Accreditation	Multiple	Various	8334	1050	1-3Q	550	1-3Q	500	1-3Q	Cont.	Cont.	Cont.
System Evaluation and Test	Multiple	Various	11684	682	1-3Q	475	1-3Q	100	1-3Q	Cont.	Cont.	Cont.
Subtotal:			20018	1732		1025		600		Cont.	Cont.	Cont.
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
**0604742A - CONSTRUCTIVE SIMULATION SYSTEMS
 DEVELOPMENT**

PROJECT
362

	Type				Date		Date		Date			Contract
Program Management	Multiple	Various	21569	3662	1-4Q	3435	1-4Q	4377	1-4Q	Cont.	Cont.	Cont.
Cost Analysis Support	T&M	Northrup Grumman-TASC, Orlando FL	414								414	493
SBIR/STTR						562					562	
Subtotal:			21983	3662		3997		4377		Cont.	Cont.	Cont.
Project Total Cost:			158400	26622		23353		23915		Cont.	Cont.	Cont.

Schedule Profile (R4 Exhibit)

May 2009

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604742A - CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT

PROJECT
362

Event Name	FY 08				FY 09				FY 10				FY 11				FY 12				FY 13				FY 14				FY 15			
	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) JLCCTC V5, (2) JLCCTC V5.5, (3) JLCCTC V6, (4) OneSAF integration into JLCCTC	▲ 1				▲ 2				▲ 3				▲ 4																			

Schedule Detail (R4a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration		PE NUMBER AND TITLE 0604742A - CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT					PROJECT 362	
<u>Schedule Detail</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>
Milestone C								
JLCCTC V4								
JLCCTC V5	3Q							
JLCCTC V5.5		3Q						
JLCCTC V6			4Q					
OneSAF integration into JLCCTC				4Q				
P3I Development				1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604746A - Automatic Test Equipment Development				
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	11546	18521	15320	Continuing	Continuing
L59 DIAGNOST/EXPERT SYS DE	8178	14954	11759	Continuing	Continuing
L65 Test Equipment Development	3368	3567	3561	Continuing	Continuing

A. Mission Description and Budget Item Justification: This program element (PE) provides for development and testing of general-purpose test equipment and of state-of-the-art diagnostics and prognostics technology, software, and systems to support the increasingly complex electronic components of the Army's new and upgraded weapon systems. It focuses on implementation of commercial test and diagnostic technologies across multiple weapon platforms to minimize the cost of troubleshooting and maintenance of Army equipment in the field.

Modular, reconfigurable automatic and semi-automatic systems are developed under this program to satisfy weapon system test and diagnostics requirements. The Next Generation Automatic Test System (NGATS) currently under development will provide state-of-the-art test and diagnostic capabilities to support current and future weapon systems. It is a Future Combat Systems associated program, is the platform for transitioning Agile Rapid Global Combat Support System (ARGCS) technologies into the Army weapon system support structure, and will replace several aging automatic test systems (ATS) which are becoming prohibitively expensive to operate and maintain.

This PE also provides for continued development and improvement of measurement equipment with emphasis on the incorporation of digital electronics and tailoring of configurations to improve deployability, mobility, and survivability of the support equipment. Artificial intelligence and anticipatory maintenance applications are being developed to support the integration of self-diagnostic capabilities in Army weapons and support systems. The goal of these efforts is to reduce logistics burdens and improve readiness by minimizing the need for external testers and improving the troubleshooting abilities of soldiers in the field.

FY2010 funding for this program continues development in accordance with DoD and Army policies of the Army standard Next Generation Automatic Test System which will improve deployability and mobility of test and diagnostic equipment and replace aging and obsolete automated equipment currently supporting a number of the Army's vital warfighting systems. It will also develop or significantly modify test equipment to satisfy modular force and homeland security support requirements that cannot be accommodated with test equipment currently available in the commercial marketplace.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

May 2009

BUDGET ACTIVITY	PE NUMBER AND TITLE		
5 - System Development and Demonstration	0604746A - Automatic Test Equipment Development		
<u>B. Program Change Summary</u>	FY 2008	FY 2009	FY 2010
Previous President's Budget (FY 2009)	9961	23582	15633
Current BES/President's Budget (FY 2010)	11546	18521	15320
Total Adjustments	1585	-5061	-313
Congressional Program Reductions		-5061	
Congressional Rescissions			
Congressional Increases	1843		
Reprogrammings	3		
SBIR/STTR Transfer	-261		
Adjustments to Budget Years			-313

Change Summary Explanation:
 FY2008: \$1,843K in Supplemental funds provided to support GWOT aviation and ground testing.
 FY2009: \$5,000K Congressional reduction for "NGATS excessive growth."

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604746A - Automatic Test Equipment Development			PROJECT L59	
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
L59 DIAGNOST/EXPERT SYS DE	8178	14954	11759	Continuing	Continuing

A. Mission Description and Budget Item Justification: This project funds development of and system enhancements for the Next Generation Automatic Test System (NGATS). The NGATS is a general-purpose automatic test system (ATS) that will provide test and diagnostic capabilities required to support current and future weapons and combat support systems, will facilitate retirement of aging and obsolete test equipment that is imposing increasing logistics and operations and support cost burdens, and is a Future Combat Systems associated program. It is the platform for transitioning Agile Rapid Global Combat Support System (ARGCS) technologies into the Army weapon system support structure. The ARGCS initiative was sponsored by the Department of Defense, and all Services are expected to transition demonstrated technologies into their automatic test systems programs. This project also provides for continuing efforts to upgrade and improve general-purpose automatic test equipment to satisfy test and diagnostic requirements of the Army's new and upgraded weapon systems, and for development and adaptation of automatic test equipment required to overcome existing deficiencies and voids in organic test and diagnostic capabilities; development and testing of common procedures utilizing existing test program sets and software applications; and market surveys of commercially available test equipment, methods, and procedures to determine applicability to Army requirements. The test and diagnostic systems and procedures developed under this project are essential for ensuring the operational readiness, accuracy, and effectiveness of the Army's warfighting systems.

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
FY08: Complete NGATS developmental testing (Increment 1) (including environmental, dynamic, E3, reliability, and log demo)	650		
FY08: Complete NGATS (Increment 1) operational testing (OT)	900		
FY08-FY09: Develop initial NGATS logistics (including provisioning, calibration, and technical data)	2338	3000	
FY08: Test and evaluate Abrams and Bradley electronic test program sets (TPS) for use on NGATS	2790		
FY08-FY09: Continue development of the NGATS electro-optics (EO) subsystem to include the capability to support new ground and aerial sensors for unmanned air and ground vehicles	500	1000	
FY08-FY09: Develop and test hardware and software required for Increment 2 systems (Avenger, Multiple Launch Rocket System, Tube-Launched, Optically-Tracked, Wire-Guided (TOW) Missile System, Paladin and Common Remotely Operated Weapons Station (CROWS) II) and EO TPSs for Abrams and Bradley systems	500	1954	
FY08-FY09: Develop NGATS Net Centric maintenance capability to support condition-based maintenance (CBM+), embedded diagnostics and Smart TPS development for all supported platforms	500	500	
FY09: Complete NGATS design improvements and testing resulting from OT		1000	
FY09: Complete fabrication of developmental hardware		2500	
FY09-FY10: Rehost, test and evaluate the Abrams/Bradley TPSs for NGATS first unit equipped		4599	2000
FY10: Continue development of NGATS integrated EO subsystem			2500

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
5 - System Development and Demonstration	0604746A - Automatic Test Equipment Development	L59
FY10: Develop software capabilities to incorporate Common Logistics Operating Environment (CLOE) and embedded diagnostics data collection and analysis for closed loop diagnostic maintenance in support of condition-based maintenance		950
FY10: Complete rehost of Abrams and Bradley electronic and electro-optic (EO) test program sets (TPS) for use with NGATS onboard EO subsystem		1450
FY10: Develop and test hardware/software for NGATS increment 2 system and TPSs		3500
FY10: Develop enhanced Smart TPS hardware and software		500
FY10: Initiate redesign, test and evaluation of Abrams and Bradley TPSs		859
FY09: Small Business Innovative Research/Small Business Technology Transfer Programs		401
Total	8178	14954

<u>B. Other Program Funding Summary</u>	FY 2008	FY 2009	FY 2010	To Compl	Total Cost
OPA3, MB4000, Integrated Family of Test Equipment (IFTE)	159677	46093	102844	Continuing	Continuing

Comment:

C. Acquisition Strategy This developmental project consists of cooperative in-house and competitive and sole-source contractual actions. When the necessary expertise and capability are available within the Department of Defense, services required for the individual development projects are ordered from the government source; otherwise, commercial contracts are used. Equipment required for developmental projects is obtained by contract from the commercial supplier. Developmental efforts for the Next Generation Automatic Test System (NGATS) are being completed under a sole-source contract awarded to the prime contractor for the Integrated Family of Test Equipment off-platform testers. NGATS will follow an evolutionary acquisition strategy using spiral development. The NGATS Increment 1 will replace the Direct Support Electrical Systems Test Set (DSESTS). Increments 2 and 3 will replace the Base Shop Test Facility (BSTF) (V)3 and BSTF (V)5 systems respectively.

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
5 - System Development and Demonstration			0604746A - Automatic Test Equipment Development							L59		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Prototype Development	SS/CPFF(5)	Northrop Grumman, Rolling Meadows, IL	13472					2000	2-3Q	Cont.	Cont.	Cont.
Hardware/Support Items Development	SS/CPFF(5)	Northrop Grumman, Rolling Meadows, IL	47000	1299	2-4Q	3605	2-4Q	5000	2Q	Cont.	Cont.	Cont.
Software Development/Verification/Validation	SS/CPFF(5)	Northrop Grumman, Rolling Meadows, IL	4239	4304	2-4Q	9447	2-4Q	2267	2-4Q	Cont.	Cont.	Cont.
Subtotal:			64711	5603		13052		9267		Cont.	Cont.	Cont.
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Project Management/Technical Support		Various	43590	525	1-4Q	1001	1-4Q	1542	1-4Q	Cont.	Cont.	Cont.
Other Direct		Various	1390	500	1-4Q	500	1-4Q	500	1-4Q	Cont.	Cont.	Cont.
Subtotal:			44980	1025		1501		2042		Cont.	Cont.	Cont.
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Operational Testing	Various	Various	2814	900	1-3Q					Cont.	Cont.	Cont.
Developmental Testing	Various	Various	597	650	1-3Q			450	1-3Q	Cont.	Cont.	Cont.
Subtotal:			3411	1550				450		Cont.	Cont.	Cont.
Remarks: Test Program Set (TPS) test and evaluation is included in the product development cost.												
IV. Management Services	Contract	Performing Activity &	Total	FY 2008	FY 2008	FY 2009	FY 2009	FY 2010	FY 2010	Cost To	Total	Target

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
5 - System Development and Demonstration			0604746A - Automatic Test Equipment Development							L59		
	Method & Type	Location	PYs Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Complete	Cost	Value of Contract
SBIR/STTR						401	3Q				401	
Subtotal:						401					401	
Project Total Cost:			113102	8178		14954		11759		Cont.	Cont.	Cont.

Schedule Profile (R4 Exhibit)

May 2009

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604746A - Automatic Test Equipment Development

PROJECT
L59

Event Name	FY 08				FY 09				FY 10				FY 11				FY 12				FY 13				FY 14				FY 15			
	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) Milestone C, (2) Full Rate Production Decision Review							▲ ₁	MS C							▲ ₂	FRP-DR																
(3) Full Materiel Release, (4) First Unit Equipped															▲ ₃	FMR			▲ ₄	FUE												
NGATS Prototype Development (Increment 1)	█																															
NGATS System Development and Demonstration (SDD) (Increment 1)	█	█	█	█																												
NGATS Testing (Increment 1)	█	█	█	█																												
NGATS Production (Increment 1)									█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█								
NGATS SDD (Increment 2)									█	█	█	█																				
NGATS Testing (Increment 2)													█	█	█	█	█	█	█	█												
NGATS Production (Increment 2)																									█	█	█	█	█	█	█	█
NGATS SDD (Increment 3)													█	█	█	█																
NGATS Testing (Increment 3)																					█	█	█	█	█	█	█	█				
NGATS P3I - NETCENTRIC																									█	█	█	█	█	█	█	█
FCS and New Systems Test Capability																									█	█	█	█	█	█	█	█

Schedule Detail (R4a Exhibit)

May 2009

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604746A - Automatic Test Equipment Development

PROJECT
L59

<u>Schedule Detail</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>
Milestone C		3Q						
Full Rate Production Decision Review				2Q				
Full Materiel Release				2Q				
First Unit Equipped				3Q				
NGATS Prototype Development (Increment 1)	1Q							
NGATS System Development and Demonstration (SDD) (Increment 1)	1Q - 4Q							
NGATS Testing (Increment 1)	1Q - 4Q	1Q - 4Q						
NGATS Production (Increment 1)		4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q	
NGATS SDD (Increment 2)		4Q	1Q - 4Q					
NGATS Testing (Increment 2)			4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q		
NGATS Production (Increment 2)							2Q - 4Q	1Q - 4Q
NGATS SDD (Increment 3)			4Q	1Q - 4Q	1Q - 4Q			
NGATS Testing (Increment 3)					4Q	1Q - 4Q	1Q - 4Q	
NGATS P3I - NETCENTRIC						4Q	1Q - 4Q	1Q - 4Q
FCS and New Systems Test Capability						4Q	1Q - 4Q	1Q - 4Q

Test program set (TPS) compatibility testing runs continually throughout the product development process

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604746A - Automatic Test Equipment Development			PROJECT L65	
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
L65 Test Equipment Development	3368	3567	3561	Continuing	Continuing

A. Mission Description and Budget Item Justification: This project supports development and demonstration of state-of-the-art calibration standards and techniques, and upgrades/improvements to existing Army calibration systems. It provides for feasibility studies, market research, inventory analyses, bid sample testing, and prototyping to support calibration systems and general-purpose test and diagnostic equipment acquisitions. Primary efforts under this project include testing of an up-armor ready AN/GSM-421(V2) tactical calibration capability, development of calibration capability for chemical and biological agent detection systems and night vision testers, improvement of test and measurement equipment performance envelopes via preplanned product improvements (P3I), and development/evaluation of advanced technology and higher reliability calibration systems and general-purpose test, measurement and diagnostic equipment (TMDE). Preplanned product improvements are underway to current test and measurement systems to overcome deficiencies and voids in existing organic capabilities and to ensure the operational readiness, accuracy, effectiveness, and safety of Army weapons and combat support systems. These improvements will employ reconfigurable open electronics architecture and computer-based instrumentation wherever feasible and will be focused on reducing test equipment footprints to improve deployability and mobility in areas of operation.

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
FY08-FY10: Develop hardware via preplanned product improvements to enhance TMDE systems' performance capabilities	580	600	605
FY08-FY10: Test and integrate hardware developed for preplanned product improvements	775	827	850
FY08-FY10: Develop, evaluate, and integrate test and measurement equipment	1007	1100	1052
FY08-FY10: Continue development and evaluation of test and calibration procedures	200	210	230
FY08-FY10: Perform market research and evaluation of commercial equipment, and develop performance specifications for acquisitions	806	730	824
FY09: Small Business Innovative Research/Small Business Technology Transfer Programs		100	
Total	3368	3567	3561

<u>B. Other Program Funding Summary</u>	FY 2008	FY 2009	FY 2010	To Compl	Total Cost
OPA3, N10000, Calibration Sets Equipment	63382	9660	16844	Continuing	Continuing
OPA3, N11000, Test Equipment Modernization	29161	22377	19343	Continuing	Continuing

Comment:

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY

5 - System Development and Demonstration

PE NUMBER AND TITLE

0604746A - Automatic Test Equipment Development

PROJECT

L65

C. Acquisition Strategy Projects are focused on use of commercial and nondevelopmental item technologies. When programmatic and engineering expertise and capability are available within the Department of Defense, services required for the individual development projects are acquired from the government source; otherwise, commercial services contracts are used to provide these capabilities. Equipment required for development projects is obtained from the commercial supplier. Candidate commercial equipment and nondevelopmental items are identified and evaluated through market research and government testing and evaluation.

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
5 - System Development and Demonstration			0604746A - Automatic Test Equipment Development							L65		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	Various	Various	6882	1408	1-2Q	1360	1-2Q	1499	1-2Q	Cont.	Cont.	Cont.
Procedures Development and Evaluation	Various	Various	2108	200	1-3Q	210	1-3Q	230	1-3Q	Cont.	Cont.	Cont.
Government Engineering		Various	1670	515	1-4Q	515	1-4Q	520	1-4Q	Cont.	Cont.	Cont.
Subtotal:			10660	2123		2085		2249		Cont.	Cont.	Cont.
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Technical Support Services	Various	Various	967	300	2Q	310	2Q	320	2Q	Cont.	Cont.	Cont.
Subtotal:			967	300		310		320		Cont.	Cont.	Cont.
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Testing	Various	Various	1631	595	1-2Q	612	1-2Q	620	1-2Q	Cont.	Cont.	Cont.
Subtotal:			1631	595		612		620		Cont.	Cont.	Cont.
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Program Management Personnel		Various	882	350	1-4Q	460	1-4Q	372	1-4Q	Cont.	Cont.	Cont.
SBIR/STTR						100	3Q				100	

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY	PE NUMBER AND TITLE						PROJECT		
5 - System Development and Demonstration	0604746A - Automatic Test Equipment Development						L65		
Subtotal:	882	350		560		372	Cont.	Cont.	Cont.
Project Total Cost:	14140	3368		3567		3561	Cont.	Cont.	Cont.

Schedule Profile (R4 Exhibit)

May 2009

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604746A - Automatic Test Equipment Development

PROJECT
L65

Event Name	FY 08				FY 09				FY 10				FY 11				FY 12				FY 13				FY 14				FY 15			
	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
Test and Measurement Equipment - Development	[Redacted]																															
Test and Measurement Equipment - Testing	[Redacted]																															
Market research and evaluation of comm equipment/development of performance spec	[Redacted]																															

Schedule Detail (R4a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration		PE NUMBER AND TITLE 0604746A - Automatic Test Equipment Development					PROJECT L65	
<u>Schedule Detail</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>
Test and Measurement Equipment - Development	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q
Test and Measurement Equipment - Testing	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q
Market research and evaluation of comm equipment/development of performance spec	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

May 2009

BUDGET ACTIVITY	PE NUMBER AND TITLE				
5 - System Development and Demonstration	0604760A - Distributive Interactive Simulations (DIS) - Eng Dev				
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	19738	17717	15727	Continuing	Continuing
C74 DEVEL SIMULATION TECH	3523	5364	3748	Continuing	Continuing
C77 Army Geospatial Data Master Plan	2063	673	342	Continuing	Continuing
C78 One Semi-Automated Forces (OneSAF)	12490	11680	11637	Continuing	Continuing
C81 Joint Training Integration & Evaluation Center	1662				1662

A. Mission Description and Budget Item Justification: The program element "Distributive Interactive Simulations - Engineering Development" applies to the Army's Advanced Simulation Program, which enables operational readiness and the development of concepts and systems for the Future Force through the application of new simulation technology and techniques. The development and application of simulation technology will provide the means to link electronically a range of various simulation tools in a manner that is transparent to the user. The amalgam of simulations and tools is linked together to enable execution of an event; to verify the scenarios, tactics/techniques and procedures; to train testers on new hardware/software; and to conduct trial test runs before costly live field tests. The tools developed are available for reuse by developers and users of simulations throughout the Army.

Project C74 provides the resources necessary to perform the formally chartered mission of the Army's Simulation-to-C4I* Interoperability Overarching Integrated Product Team (SIMCI OIPT). (*C4I = Command, Control, Communications, Computers and Intelligence.) Project C74 includes an FY09 Congressional addition of \$1,630K for the Joint Training Integration & Evaluation Center. This was moved from C74 to C81 subsequent to the database lock for proper execution. Project C77, Army Geospatial Data Master Plan, focuses on activities that start with data acquisition from multiple sources and culminate in (1) accurate, robust and timely geospatial data and data management and (2) integration and conversion tools that support multiple battle command, training and mission-rehearsal applications. Project C78 develops the One Semi-Automated Forces (OneSAF) program, which will combine and improve the functionality and behaviors of several current semi-automated forces to provide a single SAF for Army use in simulations.

The FY2010 line of Project C74 continues management of the SIMCI OIPT's Army-wide collaborative, interoperability enhancement activities, including architecture alignment, data model alignment, common standards, components, and products. The FY2010 line of Project C77 develops geospatial data standards and integrates geospatial data into Army Battle Command (BC) systems. The FY2010 line of Project C78 continues development of the software for OneSAF Pre-Planned Product Improvements (P3Is).

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

May 2009

BUDGET ACTIVITY	PE NUMBER AND TITLE		
5 - System Development and Demonstration	0604760A - Distributive Interactive Simulations (DIS) - Eng Dev		
<u>B. Program Change Summary</u>	FY 2008	FY 2009	FY 2010
Previous President's Budget (FY 2009)	18180	16095	15629
Current BES/President's Budget (FY 2010)	19738	17717	15727
Total Adjustments	1558	1622	98
Congressional Program Reductions		-58	
Congressional Rescissions			
Congressional Increases		1680	
Reprogrammings	2007		
SBIR/STTR Transfer	-449		
Adjustments to Budget Years			98

Change Summary Explanation: FY09: Project C74 includes a Congressional Add for the Joint Training Integration & Evaluation Center. This was moved from C74 to C81 subsequent to the database lock for proper execution.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration		PE NUMBER AND TITLE 0604760A - Distributive Interactive Simulations (DIS) - Eng Dev			PROJECT C74
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
C74 DEVEL SIMULATION TECH	3523	5364	3748	Continuing	Continuing

A. Mission Description and Budget Item Justification: Project C74 funds the HQDA-chartered mission of the Simulation-to-C4I* Interoperability (SIMCI) Overarching Integrated Product Team (OIPT). (*C4I = Command, Control, Computers and Intelligence.) The SIMCI OIPT mission is to provide recommendations to Army senior leadership regarding Army policy, organization and processes for improvement of interoperability of Battle Command (BC) and Modeling & Simulation (M&S) systems. BC system capabilities encompass not only command and control functions, but also "decision and planning support capabilities that cover all functions including deployment, mission rehearsal, sustainment, Intelligence, Surveillance, Reconnaissance, etc., en route as well as from fixed locations." [Training and Doctrine Command (TRADOC) Pamphlet 525-66] The SIMCI OIPT, led by PEO-STR1, uses collaborative processes among its approximately 30 Army organizations (including HQDA staff, combat developers and material developers) to identify key interoperability shortfalls and the required materiel solutions.

The functions of the SIMCI OIPT are: (1) Technical Investment--sponsor/support initiatives that seek solutions to interoperability issues surrounding BC and M&S systems; e.g. targeted, technical investments for development projects; implementation of BC and M&S interoperability architectures, standards, and interface products; (2) Research--promote cooperative research and coordination among existing and emerging BC and M&S programs; (3) Advisor to Army Leadership--recommend and influence BC and M&S interoperability programs, policies, resourcing and procedures; (4) Facilitator--facilitate the integration of Army interoperability initiatives with Service and Joint, interagency, and multinational (JIM) programs;(5) Change Agent--serve as a catalyst for change to achieve interoperable system of systems; and (6) Outreach--conduct & participate in interoperability outreach activities such as conferences and publications.

SIMCI investments consist primarily of cost sharing opportunities, leveraging partial solutions to acquisition programs to enhance the interoperability of multiple systems in the Joint operational environment. Key programs that will benefit from the cross-domain vision and practices of SIMCI include Army Battle Command Systems (ABCS), Future Combat System (FCS), System of Systems Common Operating Environment (SOSCOE), Force XXI Battle Command Brigade and Below (FBCB2), Joint Capabilities Release (JCR), Joint Land Component Constructive Training Capability (JLCCTC), Live/Virtual/Constructive Integrating Architecture (LVC-IA), Software Blocking (SWB), Data Product Development Environment (DPDE), Joint Forces Command's Joint National Training Capability (JNTC), and Defense Information Systems Agency's Net Enabled Command Capability (NECC).

SIMCI investment will accelerate the implementation, within BC and M&S systems, of a common Joint Consultation, Command and Control Information Exchange Data Model (JC3IEDM) that is used by other Services and coalition nations, thus enhancing the inherent ability of Army systems to interoperate seamlessly in a JIM environment. The SIMCI-sponsored Army C4I and Simulation Initialization System (ACSIS) capability will be expanded to the DPDE to address key training and operational data initialization gaps. This will enable timely, flexible, and common data updates to BC and M&S systems, thus reducing data latency and inter-system ambiguity. SIMCI's direct involvement with FCS will increase the visibility of that program's needs and capabilities, providing the various OIPTs with opportunities to leverage their systems' fundamental capabilities to meet the needs of FCS, and vice versa. SIMCI investments will cement those relationships through co-development of common-use products.

FY2010 funding continues management of the SIMCI OIPT'S Army-wide collaborative, interoperability enhancement activities, including architecture alignment, data model alignment, common standards, components, and products. Objectives are: identify and articulate to HQDA senior leadership specific standards that require Army-wide

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604760A - Distributive Interactive Simulations (DIS) - Eng Dev	PROJECT C74
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implementation; co-develop data standards, architecture standards, implementation specifications and joint initialization / scenario-generation products; co-develop common JC3IEDM integration/translation capability for BC/M&S applications; co-develop BC/M&S products to meet the FCS Spin Out; continue transition of SIMCI knowledge and proof-of-principle products to Army and Joint acquisition programs.

Project C74 includes a Congressional addition of \$1,630K for the Joint Training Integration & Evaluation Center. This was moved from C74 to C81 subsequent to the database lock for proper execution.

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
FY08-10: Management of the SIMCI OIPT's Army-wide collaborative, interoperability enhancement activities, including architecture alignment, data model alignment, common standards, components, and products. Objectives are: identify and articulate to HQDA Senior Leadership specific standards that require Army-wide implementation; co-develop data standards, architecture standards, implementation specifications and joint initialization / scenario-generation products; co-develop common JC3IEDM integration/translation capability for BC/M&S applications; co-develop BC/M&S products to meet the FCS Spin Out; and continue transition of SIMCI knowledge and proof-of-principle products to Army and Joint acquisition programs.	3523	3610	3748
FY09: Congressional Addition - Joint Training Intregation and Evaluation Center; supports DoD Joint training and provides for system development to meet urgent US Joint Forces Command live virtual and constructive training requirements. This was moved from C74 to C81 subsequent to the database lock for proper execution.		1630	
Small Business Innovative Research/Small Business Technology Transfer Programs		124	
Total	3523	5364	3748

B. Other Program Funding Summary Not applicable for this item.

C. Acquisition Strategy SIMCI OIPT resources are allocated to multiple organizations and contracts to execute approved functions and projects that advance the efforts of SIMCI and components-based architecture alignment.

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
5 - System Development and Demonstration			0604760A - Distributive Interactive Simulations (DIS) - Eng Dev							C74		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
C2 Information Exchange Data Model (C2IEDM) Data Translator	T&M	COLSA Corporation, Huntsville, AL	997								997	997
JC3IEDM Migration/Implementation	CPFF	Alion Science & Technology, Tysons Corner, VA	96	198	2-4Q	203	2-4Q	246	2-4Q	Cont.	Cont.	Cont.
Implementation of Initialization Products	CPFF	Alion Science & technology, Tysons Corner, Va	187	382	2-4Q	392	2-4Q	412	2-4Q	Cont.	Cont.	Cont.
Transition of ACSIS simulation initialization capability	MIPR	NAVSEA, Pax River, MD	240	525	2-3Q	539	2-3Q	589	2-3Q	Cont.	Cont.	Cont.
Expanding Modified Table of Equipment System Architecture (SA) data	T&M	General Dynamics, Orlando, FL	175	388	2-3Q	398	2-3Q	361	2-3Q	Cont.	Cont.	Cont.
Adding JC3IEDM to the Common C4I adapter/web service	In-House	PEO STRI, Orlando, Fl	290	590	1-2Q	589	1-2Q	620	1-2Q	Cont.	Cont.	Cont.
Adding JC3IEDM to C2 systems data mediation/web service	T&M	Viecore FSD, Ft. Monmouth, NJ	110	225	1-2Q	231	1-2Q	252	1-2Q	Cont.	Cont.	Cont.
JC3IEDM sample application and reference implementation	T&M	CSC, Ft. Monmouth, NJ	288	579	1-3Q	594	1-3Q	560	1-3Q	Cont.	Cont.	Cont.
Initialization Scope Study	T&M	IDA, Alexandria, VA	50								50	50
Initialization Study Implementation	T&M	IDA, Alexandria, VA		210	1-2Q	216	1-2Q	240	1-3Q	Cont.	Cont.	Cont.
Joint Training Intregation and Evaluation Center	TBS	TBS				1394	2-4Q				1394	1394
Subtotal:			2433	3097		4556		3280		Cont.	Cont.	Cont.
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE								PROJECT	
5 - System Development and Demonstration			0604760A - Distributive Interactive Simulations (DIS) - Eng Dev								C74	
Facility Support for Digital Integration Lab (DIL)	In-House	PEO STRI (formerly STRICOM), Orlando, FL	655								655	655
SIMCI Program Support	CPFF	Alion Science & Technology	95	105	2-3Q	108	2-3Q	112	2-3Q	Cont.	Cont.	Cont.
Army Initialization Program	CPFF	Alion Science & Tecnology		183	2-3Q	188	2-3Q	94	2-3Q	Cont.	Cont.	Cont.
Subtotal:			750	288		296		206		Cont.	Cont.	Cont.
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Software Certification Testing	T&M		280								280	
Subtotal:			280								280	
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Program Management	Multiple	Various	8521	138	1-4Q	152	1-4Q	262	1-4Q	Cont.	Cont.	Cont.
Joint Training Intregation and Evaluation Center - Program Management	Multiple	Various				236	1-4Q				236	
SBIR/STTR						124					124	
Subtotal:			8521	138		512		262		Cont.	Cont.	Cont.
Project Total Cost:			11984	3523		5364		3748		Cont.	Cont.	Cont.

Schedule Profile (R4 Exhibit)

May 2009

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604760A - Distributive Interactive Simulations (DIS) - Eng Dev

PROJECT
C74

Event Name	FY 08				FY 09				FY 10				FY 11				FY 12				FY 13				FY 14				FY 15			
	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) JC3IEDM Software Development Toolkit									▲ ₁																							
(2) JC3IEDM Validator									▲ ₂																							
Sim Initialization Tool Dev and Transition																																
Productionize Thickening of DPDE Data																																
Integration of GEMS into OneSAF																																
Sensor Data Management Service Dev																																
JC3IEDM Ref Implementation Dev & Sust																																
Quarterly SIMCI OIPT Meeting																																
Annual Project Call																																

Schedule Detail (R4a Exhibit)

May 2009

BUDGET ACTIVITY		PE NUMBER AND TITLE						PROJECT	
5 - System Development and Demonstration		0604760A - Distributive Interactive Simulations (DIS) - Eng Dev						C74	
<u>Schedule Detail</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	
JC3IEDM Software Development Toolkit			1Q						
JC3IEDM Validator			1Q						
Sim Initialization Tool Dev and Transition	1Q - 4Q	1Q - 4Q							
Productionize Thickening of DPDE Data	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q					
Integration of GEMS into OneSAF	1Q - 4Q	1Q - 4Q	1Q						
Sensor Data Management Service Dev	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 2Q					
JC3IEDM Ref Implementation Dev & Sust	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 2Q					
Quarterly SIMCI OIPT Meeting	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	
Annual Project Call	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604760A - Distributive Interactive Simulations (DIS) - Eng Dev			PROJECT C77	
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
C77 Army Geospatial Data Master Plan	2063	673	342	Continuing	Continuing

A. Mission Description and Budget Item Justification: Project C77 addresses the development and maintenance of the Army Geospatial Data Integrated Master Plan (AGDIMP), approved by the Chief of Staff, Army in April 2005. The AGDIMP provides the framework for generating, analyzing and distributing geospatial data for battle management operations, training, and mission rehearsal. The AGDIMP also provides the procedures for identifying and refining Army geospatial resource requirements. Geospatial data provide Soldiers with the framework and background for displaying the location of friendly and enemy forces and the location of other critical features on the battlefield. Geospatial data -- used in Army command and control systems, course of action analysis, mission rehearsal tools, simulators and simulations -- provide insights on how the physical environment will impact combat operations. This minimizes exposure of Soldiers to hostile environments. The AGDIMP describes the operations for a complete, integrated network-centric enterprise for managing and updating geospatial data required for the Army's Future Force. Although this plan encompasses most of the issues of an enterprise solution for geospatial needs and concerns, it does not contain the full level of detail or complexity required to be considered complete. The AGDIMP includes all activities starting with data acquisition from multiple sources (including raw sensor feeds from national sensors to soldier/platform level) and concluding with accurate, robust, and timely geospatial (terrain-related) data management, integration, and conversion tools that support multiple battle command, training, and mission-rehearsal applications. The AGDIMP does not include the algorithms and functions used by the applications themselves to produce finished battle command or intelligence products. The AGDIMP will become part of a much larger effort to integrate geospatial activities across all Services while documenting the complex framework for a "net ready" geospatial information and services architecture, an environment in which the Army's current and future forces must operate to achieve information dominance within the total battle space. This larger effort is currently being developed in conjunction with the Joint Forces Command and the other Services, including Special Operations Command.

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
FY08: Funds enable the Topographical Engineering Center (TEC) to establish the Geospatial Acquisition Support Office (GASO). The GASO mission is to ensure successful development, integration, test and certification of GI&S* technologies across the Army acquisition community. GASO is responsible for data modeling, creation of standards, system-of-systems engineering, and certification of the geospatial enterprise Army-wide. *GI&S = Geospatial Information & Services.	2001		
FY08: Funds contribute to establishment of the Army geospatial data model.	62		
FY09 -10: Funds develop geospatial data standards and integrate geospatial data into the Army Battle Command (BC) systems.		654	342
Small Business Innovative Research/Small Business Technology Transfer		19	
Total	2063	673	342

B. Other Program Funding Summary Not applicable for this item.

C. Acquisition Strategy Resources are allocated to multiple organizations and contracts for approval and execution of projects in support of the AGDIMP.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY

5 - System Development and Demonstration

PE NUMBER AND TITLE

0604760A - Distributive Interactive Simulations (DIS) - Eng Dev

PROJECT

C77

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604760A - Distributive Interactive Simulations (DIS) - Eng Dev			PROJECT C78	
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
C78 One Semi-Automated Forces (OneSAF)	12490	11680	11637	Continuing	Continuing

A. Mission Description and Budget Item Justification: Project C78 develops and delivers a software system that represents activities of units and forces in simulation. This representation is used to support the concept evaluation, experimentation, materiel acquisition and training communities. The focus of this project is systems engineering and design for development and evolution of the architecture and software tools for a universal system of Army computer-generated forces -- One Semi-Automated Forces (OneSAF). OneSAF is a next-generation higher fidelity brigade-and-below SAF that represents a full range of operations, systems and control processes in support of stand-alone and embedded training and Research, Development and Acquisition (RDA) simulation applications. OneSAF will be fully interoperable with the Army's emerging virtual, live, and division-and-above constructive simulations and will provide next-generation simulation products. OneSAF will replace a variety of simulations currently used within the Army to support analytic and training simulation activities. The FY10 program will continue the development of the software required to provide OneSAF Pre-Planned Product Improvements (P3Is) as prioritized and approved by the Training and Doctrine Command (TRADOC) Project Office.

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
FY08-FY10: Development of functionality to provide architectural services, components, synthetic environment and infrastructure capable of supporting initial model development.	2900	4367	5000
FY08-FY10: Development of functionality to represent behaviors, physical models and communication models for OneSAF.	5386	5025	4967
FY08-FY10: Verification and validation of newly developed and integrated software.	2204	1993	1670
FY08: Software Distribution and Equipment Training	2000		
Small Business Innovative Research/Small Business Technology Transfer		295	
Total	12490	11680	11637

<u>B. Other Program Funding Summary</u>	FY 2008	FY 2009	FY 2010	To Compl	Total Cost
OMA, 121014000	4937	4911	5055	Continuing	Continuing

Comment: OMA funds provide for maintenance of existing OneSAF life cycle software.

C. Acquisition Strategy Development of Pre-Planned Product Improvement (P3I) requirements is based on performance specifications via multiple task orders on competitively selected contracts.

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
5 - System Development and Demonstration			0604760A - Distributive Interactive Simulations (DIS) - Eng Dev							C78		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Architecture Dev & System Integration	CPFF	Science Applications International Corp, Orlando, FL	43960	2000	1-2Q	2834	1-2Q	2280	1-2Q	Cont.	Cont.	Cont.
Integrated Environment Dev	CPFF	Advanced Systems Technology, Inc., Orlando FL	8652	450	1Q	1000	1Q	1550	1Q	Cont.	Cont.	Cont.
Synthetic Environment Dev	CPFF	Science Applications International Corp, Orlando, FL	6590	400	1Q	400	1Q	600	1Q	Cont.	Cont.	Cont.
Knowledge Acquisition/Knowledge Engineering	CPFF	Aegis Technologies Group, Huntsville, AL	4834								4834	4834
OneSAF System Development	CPFF	Various	8898	350	1-2Q	200	1-2Q	301	1-2Q	Cont.	Cont.	Cont.
Model and Tools Development	CPFF	Science Applications International Corp, Orlando, FL	19138	2725	1-2Q	2800	1-2Q	3316	2Q	Cont.	Cont.	Cont.
NETT - SW Distribution and Training	CPFF	Aegis Technologies Group, Huntsville, AL	2400	2260	1-3Q						4660	
Subtotal:			94472	8185		7234		8047		Cont.	Cont.	Cont.
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
System Analysis	Various	Multiple	4227	550	1-3Q	500	1-3Q	200	1-3Q	Cont.	Cont.	Cont.
Domain Analysis	Various	Multiple	4037	350	1-3Q	294	1-3Q	220	1-3Q	Cont.	Cont.	Cont.
Architecture Engr & Tech Spt	C/CPFF	MITRE FFRDC	2406	290	2Q	290	2Q	300	2Q	Cont.	Cont.	Cont.
Subtotal:			10670	1190		1084		720		Cont.	Cont.	Cont.

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604760A - Distributive Interactive Simulations (DIS) - Eng Dev

PROJECT
C78

III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
OneSAF integration, evaluation and test	C/CPAF	National Simulation Center, FT Leavenworth, KS/Multiple	3954	1000	1-3Q	980	1-3Q	700	1-3Q	Cont.	Cont.	Cont.
OneSAF Verification, Validation & Accreditation	Various	WSMR, NM/Aberdeen Proving Grounds, MD/Multiple	4475	500	1-3Q	487	1-3Q	270	1-3Q	Cont.	Cont.	Cont.
Subtotal:			8429	1500		1467		970		Cont.	Cont.	Cont.
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Program management	Various	Multiple	8745	1615	1-4Q	1600	1-4Q	1900	1-4Q	Cont.	Cont.	Cont.
SBIR/STTR						295					295	
Subtotal:			8745	1615		1895		1900		Cont.	Cont.	Cont.
Project Total Cost:			122316	12490		11680		11637		Cont.	Cont.	Cont.

Schedule Profile (R4 Exhibit)

May 2009

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604760A - Distributive Interactive Simulations (DIS) - Eng Dev

PROJECT
C78

Event Name	FY 08				FY 09				FY 10				FY 11				FY 12				FY 13				FY 14				FY 15			
	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 Requirements Development	P3I																															
(1) OneSAF Version Release 2.0	▲ 1				▲ 2																											
(2) OneSAF Version Release 3.0	▲ 1				▲ 2																											
(3) OneSAF Version Release 4.0	▲ 1				▲ 2				▲ 3																							
OneSAF Support	Life Cycle Software Support																															

Schedule Detail (R4a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604760A - Distributive Interactive Simulations (DIS) - Eng Dev	PROJECT C78
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<u>Schedule Detail</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>
P3I Requirements Development	1Q - 4Q							
OneSAF Version Release 2.0	2Q							
OneSAF Version Release 3.0		2Q						
OneSAF Version Release 4.0			2Q					
OneSAF Version Release 5.0				2Q				
OneSAF Version Release 6.0					2Q			
OneSAF Version Release 7.0						2Q		
OneSAF Version Release 8.0							2Q	
OneSAF Version Release 9.0								2Q
OneSAF Support	1Q - 4Q							

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604760A - Distributive Interactive Simulations (DIS) - Eng Dev			PROJECT C81	
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
C81 Joint Training Integration & Evaluation Center	1662				1662

A. Mission Description and Budget Item Justification: The Joint Training Integration and Evaluation Center (JTIEC) supports and actively participates with the Joint Forces Command (JFCOM), Joint Warfighting Center (JWFC), Joint National Training Capability (JNTC), and Joint Management Office (JMO) in combined effort to advance Joint Training. The mission of the JTIEC is aligned with the Joint Advanced Training Technology Lab (JATTL) and the Joint Development Integration Facility (JDIF) missions. The JTIEC was established to promote collaboration in the research, development, integration, interoperability, demonstration, evaluation, and verification & validation training technologies and products. The JTIEC serves as an integration and evaluation environment for training system and tools. It will serve as a common resource for evaluation of training technologies and products to address military and civilian training, education and performance requirements. Working with the JFCOM, JWFC, JNTC, JMO, the Center collaborates on the research, development, demonstration, evaluation and interoperability of training tools, live-virtual-constructive simulations, federations, architectures, databases and performance-measurement systems on projects of relevance to participating organizations, individual services and in support of Joint research & development, training exercises, mission rehearsal and experimentation. The JTIEC provides verification, validation, accreditation and certification capabilities and will be an integrated virtual battle space environment that provides connection to the JNTC as a persistent host site for Joint training exercises and experimentation. In this capacity, the Center will include capabilities such as joint training performance & effectiveness evaluations, site planning and setup, configuration control, and communications planning and setup. The JTIEC will connect to the JATTL and provide a technology integration environment and infrastructure for service research and development efforts while providing a connection to a Joint environment and exercises. Infrastructure upgrades will enable each service to conduct research and development efforts and provide a connection to the joint environment and exercises as part of the Joint Training and Experimentation Network (JTEN).

Project C74 includes a Congressional addition of \$1,630K for the Joint Training Integration & Evaluation Center. This was moved from C74 to C81 subsequent to the database lock for proper execution.

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
FY08: Integrate gaming technology.	581		
FY08: Continue functionality of the Joint development integration facility.	1081		
Total	1662		

B. Other Program Funding Summary Not applicable for this item.

C. Acquisition Strategy Not applicable for this item.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration		PE NUMBER AND TITLE 0604778A - Positioning Systems Development (SPACE)			
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
168 NAVSTAR GPS EQUIP			9446		9446

A. Mission Description and Budget Item Justification: The Navstar Global Positioning System (Navstar GPS) is a passive, space-based, radio positioning and navigation system providing precise, three dimensional position, navigation, velocity and timing information to warfighters. The Navstar GPS program is designated as a DoD Space Program and the United States Air Force (USAF) is the executive agent. The Joint Program Office develops GPS User Equipment (PE 35164F) with direct Army management and participation. NAVSTAR GPS is composed of three segments: Space, Control, and User Equipment. Project 168 provides for initial and sustained participation in the research and development of Army unique requirements that enhance the Position Navigation capabilities of Army weapons systems and platforms. These funds are used to identify/support the means to increase the functionality and performance of GPS receivers in response to the latest enemy threats to GPS.

The Defense Advanced GPS Receiver has been designated a Horizontal Technology Integration (HTI) program and provides essential capabilities to numerous weapon systems and platforms.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

May 2009

BUDGET ACTIVITY	PE NUMBER AND TITLE		
5 - System Development and Demonstration	0604778A - Positioning Systems Development (SPACE)		
<u>B. Program Change Summary</u>	FY 2008	FY 2009	FY 2010
Previous President's Budget (FY 2009)			
Current BES/President's Budget (FY 2010)			9446
Total Adjustments			9446
Congressional Program Reductions			
Congressional Rescissions			
Congressional Increases			
Reprogrammings			
SBIR/STTR Transfer			
Adjustments to Budget Years			9446

Change Summary Explanation: Funding - FY 2010: Funding increase to support the Navstar Global Positioning System (Navstar GPS) program.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604778A - Positioning Systems Development (SPACE)			PROJECT 168	
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
168 NAVSTAR GPS EQUIP			9446		9446

A. Mission Description and Budget Item Justification: The Navstar Global Positioning System (Navstar GPS) is a passive, space-based, radio positioning and navigation system providing precise, three dimensional position, navigation, velocity and timing information to warfighters. The Navstar GPS program is designated as a DoD Space Program and the United States Air Force (USAF) is the executive agent. The Joint Program Office develops GPS User Equipment (PE 35164F) with direct Army management and participation. NAVSTAR GPS is composed of three segments: Space, Control, and User Equipment. Project 168 provides for initial and sustained participation in the research and development of Army unique requirements that enhance the Position Navigation capabilities of Army weapons systems and platforms. These funds are used to identify/support the means to increase the functionality and performance of GPS receivers in response to the latest enemy threats to GPS.

The Defense Advanced GPS Receiver has been designated a Horizontal Technology Integration (HTI) program and provides essential capabilities to numerous weapon systems and platforms.

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
Transition of a classified capability of the Tactical Assurance GPS Reference (TAGR) system to augment GPS receivers ability to overcome enemy threats. Complete all required tasks for program initiation and achieve Milestone A approval.			9446
Total			9446

<u>B. Other Program Funding Summary</u>	FY 2008	FY 2009	FY 2010	To Compl	Total Cost
K47800, Other Procurement, Army, NAVSTAR GPS	128784	100631	126221	Continuing	Continuing

Comment:

C. Acquisition Strategy Transition commercial technology investments and Communication and Electronics Research, Development, and Engineering Center (CERDEC) classified program initiatives to improve and enhance functionality of GPS receivers to include unique Army requirements for GPS receivers in overcoming current enemy threats to GPS. Complete all required tasks for program initiation and achieve Milestone A approval.

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
5 - System Development and Demonstration			0604778A - Positioning Systems Development (SPACE)							168		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
C2 CONOPS Development		Overlook Systems, Vienna, VA						1046	1-3Q		1046	
Performance Specification Development		Penn State ARL, State College, PA						850	1-3Q		850	
Interface ICD Development	MIPR	CERDEC, Aberdeen Proving Ground, MD						850	1-3Q		850	
Integration Analysis/ ICD Capture		Rockwell Collins, Cedar Rapids, IA						1200			1200	
Subtotal:								3946			3946	
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Analysis of Alternatives Support	MIPR	Battle Command Battle Lab, Ft. Gordon, GA						600	1-3Q		600	
Acquisition Plan Development		ARINC, Annapolis, MD						400	1-3Q		400	
Acquisition Document Development		ARINC, Annapolis, MD						1500	1-3Q		1500	
Subtotal:								2500			2500	
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Regression / Delta / CONOPS Testing	MIPR	EPG, Ft. Huachuca, AZ						1400			1400	
Technology Readiness Assessment	MIPR	CERDEC, Aberdeen Proving Ground, MD						800			800	

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration				PE NUMBER AND TITLE 0604778A - Positioning Systems Development (SPACE)						PROJECT 168		
Subtotal:									2200			2200
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
PMO Support		PM GPS, Aberdeen Proving Ground, MD						800			800	
Subtotal:								800			800	
Project Total Cost:								9446			9446	

Schedule Detail (R4a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration		PE NUMBER AND TITLE 0604778A - Positioning Systems Development (SPACE)					PROJECT 168	
<u>Schedule Detail</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>
Initial Capabilities Document (ICD) Preparation - TRADOC	1Q - 4Q	1Q - 4Q	1Q					
Analysis of Alternatives			2Q - 3Q					
Milestone A Preparation			1Q - 4Q					
TAGR System Milestone A			4Q					

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

May 2009

BUDGET ACTIVITY		PE NUMBER AND TITLE			
5 - System Development and Demonstration		0604780A - Combined Arms Tactical Trainer (CATT) Core			
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	34684	30566	26243	Continuing	Continuing
571 CLOSE CBT TACT TRAINER	1553	2876	4858	Continuing	Continuing
577 Gaming Technology in Support of Army Training			950	Continuing	Continuing
582 SYNTHETIC ENVIR CORE	22339	26330	17944	Continuing	Continuing
585 AVIATION COMBINED ARMS TACTICAL TRAINER	10792	1360	2491	Continuing	Continuing

A. Mission Description and Budget Item Justification: The Combined Arms Tactical Trainers (CATT) is a family of combined arms simulation systems designed to support the Army's simulation-based Combined Arms Training Strategy. CATT enables units, from crew to the battalion task force level, to conduct a wide variety of combat tasks on a realistic, interactive, synthetic battlefield. CATT's combination of manned simulators and staff officer workstations enables units to train as a combined arms team in a cost effective manner. CATT reinforces the successes and corrects the shortcomings of the Simulator Network (SIMNET) and Aviation Network (AIRNET) Demonstration Programs executed by the Defense Advanced Research Projects Agency (DARPA). The initial CATT system is the Close Combat Tactical Trainer (CCTT) which provides the underlying baseline architecture and After Action Review (AAR) for CATT expansions, Pre-Planned Product Improvements (P3I) and system enhancements. The Reconfigurable Vehicle Simulator (RVS) variants supports CCTT fixed sites to train combat convoy operations. Synthetic Environment (SE) Core provides for the expansion of the Synthetic Environment baseline to include enhanced interoperability and the products and infrastructure to support current and future combat operations and Mission Rehearsal required by the Contemporary Operating Environment (COE). The first synthetic environments to be expanded are the Aviation Combined Arms Tactical Trainer (AVCATT) and the CCTT for both the Active and Reserve components. Gaming Technology provides an application to train and rehearse convoy-operations, platoon level mounted infantry tactics, dismounted operations, Rules-of-Engagement training, cross-cultural communications training, IED defeat training, route clearance, ground-air coordination, UAV integration, and other small unit and individual training and mission rehearsal requirements. Platoon members can train in a common environment on geotypical or geospecific terrain. It is also possible to link Gaming technology to actual C4I systems and other CATT simulation systems to increase the utility and realism of the training. By practicing skills in CATT, units are able to make more effective use of scarce resources and costly live fire and maneuver exercises as well as train tasks deemed too hazardous to conduct in a live training environment. Fielded in both fixed site and mobile versions, CATT enables both Active and Reserve component units to prepare for real world contingency missions. By being able to use a wide array of training terrain databases and modify the behavior of the computer generated opposing forces, CATT offers an unlimited array of training options to support the Army's many regional contingency missions. The combination of tough field and live fire training, and realistic simulation training in CATT, is the catalyst to prepare Soldiers and their Leaders for the uncertainties they face in current combat operations in Iraq and Afghanistan, and larger Overseas Contingency Operations (OCO).

Project 571 includes a Congressional Add of \$1,196K for the Light Utility Helicopter Simulator. This was moved from Project 571 to 585 subsequent to the database lock for proper execution.

FY2010 funding for Gaming Technology will provide the Army with a low cost capability to train Soldiers as individuals and teams in a realistic, semi-immersive environment at Homestation, the Institution, or while deployed. The RDTE for the program will provide the capability to rapidly introduce lessons learned and maintain concurrency of fielded

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

May 2009

BUDGET ACTIVITY

PE NUMBER AND TITLE

5 - System Development and Demonstration

0604780A - Combined Arms Tactical Trainer (CATT) Core

and new game systems for Leader and Soldier training and mission rehearsal.

FY2010 funding for CCTT will enable the development of additional variants for the Reconfigurable Vehicle Simulator (RVS) in support of Infantry Brigade Combat Teams and Stryker Brigade Combat Teams; development of Dismounted Soldier Systems in support of the Infantry Brigade Combat Teams, Stryker Brigade Combat Teams, Airborne, Ranger, and Special Forces Units and Heavy Brigade Combat Teams. It will also provide for the replacement of obsolete components.

FY2010 funds for SE Core will provide the U.S. Army with continued development of a series of interoperable software and hardware components that will enable an Army Common Virtual Environment to train with integrated, virtual simulations. The result will be a "Fair Fight" capability; no simulator will have an inherent advantage over another, thus allowing for air and ground coordination and integrated training missions that accurately replicate combat operations being experienced in the Contemporary Operational Environment (COE). SE Core will provide a standardized, rapid terrain generation process, a master terrain database facility, OneSAF Integration, and Common Virtual Components (CVCs).

FY2010 funding will develop refinements to the AVCATT system to include SE Core integration and Non-Rated Crew Member Manned Module (NCM3) interoperability with other combined arms simulators. These refinements will improve readiness by providing more realistic collective training in support of current and future combat operations, OCO and the flexibility to support the ARFORGEN.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

May 2009

BUDGET ACTIVITY	PE NUMBER AND TITLE		
5 - System Development and Demonstration	0604780A - Combined Arms Tactical Trainer (CATT) Core		
<u>B. Program Change Summary</u>	FY 2008	FY 2009	FY 2010
Previous President's Budget (FY 2009)	36800	29468	20927
Current BES/President's Budget (FY 2010)	34684	30566	26243
Total Adjustments	-2116	1098	5316
Congressional Program Reductions		-102	
Congressional Rescissions			
Congressional Increases		1200	
Reprogrammings	-1104		
SBIR/STTR Transfer	-1012		
Adjustments to Budget Years			5316
<p>Change Summary Explanation:</p> <p>FY09 includes Congressional Add for the Light Utility Helicopter Simulator</p> <p>FY10 includes increases for the following:</p> <p>Gaming Technology in Support of Army Training - Project 577 (new program)</p> <p>Close Combat Tactical Trainer - Project 571</p> <p>Aviation Combined Arms Tactical Trainer - Project 585</p>			

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604780A - Combined Arms Tactical Trainer (CATT) Core			PROJECT 571	
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
571 CLOSE CBT TACT TRAINER	1553	2876	4858	Continuing	Continuing

A. Mission Description and Budget Item Justification: This program provides for Engineering and Manufacturing Development (EMD), Pre-Planned Product Improvements (P3I), and Reconfigurable Vehicle Simulator (RVS) variants for the Close Combat Tactical Trainer (CCTT), which will enhance readiness for both Active and Reserve component forces to support the execution of current and future combat operations including Overseas Contingency Operations (OCO). The program develops a networked system of interactive computer driven simulators, emulators, and semi-automated forces that replicate combat vehicles and weapon systems, combat support systems, combat service support systems, and command and control systems to create a fully integrated, real-time collective task training environment. This trainer will allow Soldiers to practice Tactics, Techniques and Procedures (TTP) that, if performed on real equipment, would be too hazardous, time-consuming and expensive. These trainers enhance realism and allow Soldiers and Units to learn tactical combat lessons on maneuver, command and control, convoy operations, and improved teamwork for increased survivability. The P3I enhance CCTT's capabilities as a tactical trainer and maintain concurrency with fielded tactical equipment and force structure. These improvements will provide interoperability with the Aviation Combined Arms Tactical Trainer (AVCATT), Army Battle Command System (ABCS), including Force XXI Battle Command Brigade and Below (FBCB2), and other simulation systems needed to execute training for current and future combat operations.

Project 571 includes a Congressional Add of \$1,196K for the Light Utility Helicopter Simulator. This was moved from Project 571 to 585 subsequent to the database lock for proper execution.

FY2010 funding for CCTT will enable the development of additional vehicle variants for the Reconfigurable Vehicle Simulator (RVS) in support of Infantry Brigade Combat Teams and Stryker Brigade Combat Teams, the development of Dismounted Soldier Systems in support of Infantry Brigade Combat Teams, Stryker Brigade Combat Teams, Airborne, Ranger and Special Forces Units and Heavy Brigade Combat Teams. It will also address the obsolescence of components.

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
FY08-FY10: Supports government program management, engineering, technical, and contracting support, and continues operational evaluation support.	129	228	236
FY08-FY10: Development of the CCTT Dismounted Soldier System.	1424		1200
FY09: Development of the Up-Armored HMMWV vehicle variant of the Reconfigurable Vehicle Simulator.		1424	
FY10: Development of the TOW and Knight vehicle variants of the Reconfigurable Vehicle Simulator.			3422
FY09: Congressional Add for initial Light Utility Helicopter (LUH) simulator development.		1196	
FY09: Small Business Innovative Research/Small Business Technology Transfer Programs		28	
Total	1553	2876	4858

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration		PE NUMBER AND TITLE 0604780A - Combined Arms Tactical Trainer (CATT) Core			PROJECT 571
<u>B. Other Program Funding Summary</u>	FY 2008	FY 2009	FY 2010	To Compl	Total Cost
OPA3, Appropriation NA0170 SIMNET/CCTT	60204	62890	65155	Continuing	Continuing

Comment:

C. Acquisition Strategy FY2010 will continue development of RVS vehicle variants, Dismounted Soldier System and obsolescence through Small Business 8A Set Asides and competitive awards.

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
5 - System Development and Demonstration			0604780A - Combined Arms Tactical Trainer (CATT) Core							571		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
P3I , RVS Vehicle Variants and Dismounted Soldier	C/CPFF	TBS						1200	1Q	Cont.	Cont.	Cont.
Development of Dismounted Soldier System Component	8A Set Aside/CPFF	Applied Visual Technologies		1424	1Q						1424	1344
Development of Up-Armored HMMWV Vehicle Variant for RVS	CPFF	Lockheed Martin Corporation, Orlando, FL				1424	3Q				1424	1458
Development of TOW and Knight Vehicle Variants for RVS	C/8A Set Aside/CPFF	TBS						3422	2Q		3422	3500
Light Utility helicopter Simulator - Add	C/CPAF	L3 Communications Corporation, Arlington, Texas				1196	2Q				1196	1196
Subtotal:				1424		2620		4622		Cont.	Cont.	Cont.
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:												
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:												

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration			PE NUMBER AND TITLE 0604780A - Combined Arms Tactical Trainer (CATT) Core							PROJECT 571		
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Project Office Support	Various	PEO STRI, Orlando, FL	16157	129	1-4Q	228	1-4Q	236	1-4Q	Cont.	Cont.	Cont.
SBIR/STTR						28					28	
Subtotal:			16157	129		256		236		Cont.	Cont.	Cont.
Project Total Cost:			16157	1553		2876		4858		Cont.	Cont.	Cont.

Schedule Profile (R4 Exhibit)

May 2009

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604780A - Combined Arms Tactical Trainer (CATT) Core

PROJECT
571

Event Name	FY 08				FY 09				FY 10				FY 11				FY 12				FY 13				FY 14				FY 15			
	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
Develop the Dismounted Soldier System																																
Develop the Up-Armored HMMWV Vehicle Variant for the RVS																																
Develop the TOW and Knight Variant for the Reconfigurable Vehicle Simulator																																
Development of P3I for the Dismounted Soldier System																																

Schedule Detail (R4a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration		PE NUMBER AND TITLE 0604780A - Combined Arms Tactical Trainer (CATT) Core					PROJECT 571	
<u>Schedule Detail</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>
Develop the Dismounted Soldier System	1Q - 4Q	1Q - 4Q						
Develop the Up-Armored HMMWV Vehicle Variant for the RVS		3Q - 4Q	1Q - 3Q					
Develop the TOW and Knight Variant for the Reconfigurable Vehicle Simulator			2Q - 4Q	1Q				
Development of P3I for the Dismounted Soldier System			1Q - 4Q	1Q - 4Q				

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration		PE NUMBER AND TITLE 0604780A - Combined Arms Tactical Trainer (CATT) Core			PROJECT 577
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
577 Gaming Technology in Support of Army Training			950	Continuing	Continuing

A. Mission Description and Budget Item Justification: The Games for Training Program will provide a commercial-off-the-shelf (COTS) product line of personal computer based gaming applications to train Soldiers in decision-making, team and individual tasks at different skill levels, using multiple mission scenarios. The program will leverage the commercial game industry to provide state of the art training solutions. The program will provide Army-wide licenses from the commercial market or from Research and Development agencies and the hardware required to operate the systems. The individual products will permit Soldiers and units to conduct training in a real-time, semi-immersive environment that will leverage Synthetic Environment Core capabilities.

FY2010 funding will integrate SE Core products and new commercial and government technology into the current gaming systems.

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
FY10: Funding will provide modifications to the system to integrate and provide interoperability with battle command systems and other simulators and simulations in support of Overseas Contingency Operations (OCO).			805
FY10: Funding will provide Government program management, engineering, technical contract and test support for Gaming.			145
Total			950

<u>B. Other Program Funding Summary</u>	FY 2008	FY 2009	FY 2010	To Compl	Total Cost
OPA 3, Appropriation NA0176 Gaming Technology in Support of Training			7870	Continuing	Continuing

Comment:

C. Acquisition Strategy Competitive contract against approved Capabilities Production Document (CPD), 29 Oct 08.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604780A - Combined Arms Tactical Trainer (CATT) Core			PROJECT 582	
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
582 SYNTHETIC ENVIR CORE	22339	26330	17944	Continuing	Continuing

A. Mission Description and Budget Item Justification: This project supports the Synthetic Environment Core (SE Core) Program. SE Core is a key U.S. Army initiative specifically designed to enhance the training capability we provide our Warfighters. SE Core's mission is to ensure the Army's virtual training systems and simulators are fully integrated and interoperable. The result will be a "Fair Fight" capability; no simulator will have an inherent advantage over another, allowing for air and ground coordination and integrated training missions that accurately replicate combat operations being experienced in the Contemporary Operational Environment (COE). SE Core provides the capability that is sufficient for current and future combat operations, Mission Rehearsal, and COE training. SE Core will reduce redundancy and increase realism. SE Core is building the Army's Common Virtual Environment (CVE) that provides the linkage between simulators and the common environment for interoperability. Additionally, SE Core will link to the Live and Constructive environments for an integrated capability to support ARFORGEN and the Combined Arms Training Strategy. SE Core is a key element in the Army's Training Transformation Plan linking the Future Combat System's (FCS) embedded, multi-mode Live, Virtual, Constructive (LVC) training capability with current systems.

SE Core will enable the Army to execute combined arms and joint training, mission planning and rehearsals at home station and deployed locations critical to training for COE operations. SE Core consists of a series of interoperable software components that will be integrated into the Army's CVE and will facilitate interoperability in a LVC Training Environment (TE). The components are One Semi-Automated Forces (OneSAF) integration; a Standard Terrain Database Generation Capability (STDGC); a Master Terrain Database; an extensive Library of Common Visual Models in open format; Dynamic Terrain; Atmospheric Effects; Chemical, Biological, Radiological, Nuclear and High Explosive (CBRNE) effects; common After Action Review (AAR); a Long Haul Networking capability; Command, Control, Communications, Computers, Intelligence Surveillance and Reconnaissance (C4ISR) interfaces; Training Support Packages and Exercise Management Tools. The STDGC uses automated tools, processes and standard source data to create a Master Database (MDB). The MDB provides open format data that can be translated into correlated runtime terrain databases to support the LVC TE and for mission planning/rehearsal/execution in support of Overseas Contingency Operations (OCO). SE Core's Common Virtual Components (CVCs) reduce redundancy, increase realism and facilitate an integrated LVC TE.

FY2010 funds for SE Core will provide for common terrain databases to be generated by the Central Terrain Database Center (CTDC). The CTDC will continue development and refinement of the STDGC. FY2010 funds will continue the integration and enhancement of OneSAF into the SE Core Architecture, CCTT and AVCATT baselines. Integration of OneSAF as the SAF for virtual simulations enables interoperability with the LVC TE and reduces costs as CCTT and AVCATT will no longer develop and maintain separate SAFs. The SE Core Product Line of Common Virtual Components will continue with upgrades, integration and refinement, and the continued development of common visual models.

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
FY08-FY10: Provides program management, engineering, technical, contract, and test support for development of SE Core.	2953	3080	3160
FY08-FY10: SE Core will provide common terrain databases from the Central Terrain Database Center and the establishment of the Primary Production Terrain Database Center. Continued refinement of the STDGC will be made with the incorporation of advanced	19386	22512	14784

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604780A - Combined Arms Tactical Trainer (CATT) Core	PROJECT 582
automated processing tools. Planned enhancements to OneSAF will continue to be integrated into the SE Core Architecture. SE Core will continue work to meet the six Key Performance Parameters defined in the Increment 1 Capability Development Document: OneSAF Integration, Standard Terrain Process Capability, Dynamic Terrain, Atmospheric Effects, Net Ready, and C4ISR. Common Moving Model development will also continue.		
FY08: Small Business Innovative Research/Small Business Technology Transfer Programs		738
Total		22339 26330 17944

<u>B. Other Program Funding Summary</u>	FY 2008	FY 2009	FY 2010	To Compl	Total Cost
OPA3, Appropriation NA0173 Aviation Combined Arms Tactical Trainer	66931	23038	12794	Continuing	Continuing
OPA3, Appropriation NA0170 Close Combat Tactical Trainer (CCTT)	60204	62890	65155	Continuing	Continuing
RDTE, Appropriation 654760 One Semi-Automated Forces (OneSAF)	12490	11680	11637	Continuing	Continuing

Comment:

C. Acquisition Strategy An extension to the Architecture & Integration (A&I) contract was awarded to Science Applications International Corp (SAIC) in 2Q09. A competitive, CPFF type contract for the development of SE Core Database Virtual Environment Development (DVED) project was awarded in FY06 to CAE with yearly options until FY11. The PM is considering an Acquisition Strategy which will combine the future A&I and DVED contracts, potentially reducing the number of Prime Vendors to one.

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
5 - System Development and Demonstration			0604780A - Combined Arms Tactical Trainer (CATT) Core							582		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Architecture and Integration	C/CPFF	Science Applications International Corporation, Orlando, FL	23165	10191	1-2Q	8721	1-2Q	4942	1-2Q	Cont.	Cont.	Cont.
Database Virtual Environment Development	C/CPFF	CAE, USA, Tampa, FL	14939	9195	1-2Q	13791	1-2Q	9842	1-2Q	Cont.	Cont.	Cont.
Subtotal:			38104	19386		22512		14784		Cont.	Cont.	Cont.
Remarks: Not Applicable												
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Engineering Services & Technical Support	C/FPF/T&M	Stanley Corporation, Orlando, FL	1554	488	1-4Q	536	1-4Q	550	1-4Q	Cont.	Cont.	Cont.
Subtotal:			1554	488		536		550		Cont.	Cont.	Cont.
Remarks: Not Applicable												
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Test Support	MIPR	Test Community		125	2Q						125	125
Subtotal:				125							125	125
Remarks: Not Applicable												
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
5 - System Development and Demonstration			0604780A - Combined Arms Tactical Trainer (CATT) Core							582		
Project Office Support	Various	PEO STRI/NAVAIR Orlando	5291	2340	1-4Q	2544	1-4Q	2610	1-4Q	Cont.	Cont.	Cont.
SBIR/STTR						738					738	
Subtotal:			5291	2340		3282		2610		Cont.	Cont.	Cont.
Project Total Cost:			44949	22339		26330		17944		Cont.	Cont.	Cont.

Schedule Profile (R4 Exhibit)

May 2009

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604780A - Combined Arms Tactical Trainer (CATT) Core

PROJECT
582

Event Name	FY 08				FY 09				FY 10				FY 11				FY 12				FY 13				FY 14				FY 15			
	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
Architecture and Integration Development	[Redacted]																															
Database Virtual Environment Development	[Redacted]																															
	[Redacted]																															

Schedule Detail (R4a Exhibit)

May 2009

BUDGET ACTIVITY		PE NUMBER AND TITLE						PROJECT
5 - System Development and Demonstration		0604780A - Combined Arms Tactical Trainer (CATT) Core						582
<u>Schedule Detail</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>
Architecture and Integration Development	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q
Database Virtual Environment Development	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q
OneSAF Integration (KPP #1)	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q
Standard Terrain Process Capability (KPP #2)	1Q - 4Q	1Q - 4Q	1Q - 4Q					
Dynamic Terrain (KPP #3)	1Q - 4Q	1Q - 4Q	1Q - 2Q					
Atmospheric Effects (KPP #4)	1Q - 4Q	1Q - 4Q	1Q - 2Q					
Net Ready (KPP #5)	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 2Q				
C4ISR (KPP #6)	1Q - 4Q	1Q - 4Q	1Q - 4Q					

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration		PE NUMBER AND TITLE 0604780A - Combined Arms Tactical Trainer (CATT) Core			PROJECT 585
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
585 AVIATION COMBINED ARMS TACTICAL TRAINER	10792	1360	2491	Continuing	Continuing

A. Mission Description and Budget Item Justification: This project supports the Aviation Combined Arms Tactical Trainer (AVCATT) which is the Army's Aviation Collective training system for Active, Reserve and Army National Guard components to provide mission rehearsal and training in support of Overseas Contingency Operations (OCO). AVCATT completed Initial Operational Test & Evaluation (IOT&E) on 1 August 2003 and received a Full Rate Production Decision on 19 December 2003. A single suite of equipment consists of two (2) mobile trailers housing six (6) reconfigurable networked simulators that support the AH-64A/D, UH-60A/L, CH-47D, and OH-58D aircraft. Supporting roleplayer, Semi-Automated Forces (SAF), and after action review (AAR) workstations are also provided as part of each suite. AVCATT is a fully mobile system capable of using shore and generator power and is transportable worldwide. The AVCATT system permits aviation units to conduct collective task training on a real-time, virtual battlefield in a combined arms scenario by leveraging Synthetic Environment Core (SE Core) capabilities. Other required elements that are present on the modern, high intensity battlefield, such as the Combat Support (CS) and Combat Service Support (CSS) elements, are an integral part of the simulation database. AVCATT is designed to provide realistic, high intensity collective and combined arms training to aviation units as well as the full spectrum of operations in support of current and future contingency operations. AVCATT supports the Aviation Combined Arms Training Strategy, the Army Campaign Plan and OCO. AVCATT also supports the Aviation Functional Area Assessment (FAA), providing collective, combined arms training for aviation units. This system is designated a complementary program for the Future Combat Systems (FCS).

Project 571 includes a Congressional Add of \$1,196K for the Light Utility Helicopter Simulator. This was moved from Project 571 to 585 subsequent to the database lock for proper execution.

FY2010 funding will develop refinements to the AVCATT system to include SE Core and Non-Rated Crew Member Manned Module (NCM3) integration and interoperability with other combined arms simulators.

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
FY08-10: Continue refinements to the system to include: interoperability enhancements through implementation of SE Core common products such as OneSAF, Environmental Runtime Control (ERC), Common Virtual Components (CVC), and common terrain databases. In addition, provide improved interoperability and interaction between live and virtual systems by adopting real world, digital messaging formats. Integration of NCM3 First Article into the AVCATT program baseline.	10407	1007	2324
FY08-10: Provides Government program management, engineering, technical, contract, and test support for AVCATT refinements.	385	282	167
Small Business Innovative Research (SBIR)/Small Business Technology Transfer Programs (STTR)		71	
Total	10792	1360	2491

<u>B. Other Program Funding Summary</u>	FY 2008	FY 2009	FY 2010	To Compl	Total Cost

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604780A - Combined Arms Tactical Trainer (CATT) Core				PROJECT 585
OPA3, Appropriation NA0173 Aviation Combined Arms Tactical Trainer	66931	23038	12794	Continuing	Continuing

Comment:

C. Acquisition Strategy Engineering and Manufacturing Development (EMD) competitive contract against a performance specification.

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
5 - System Development and Demonstration			0604780A - Combined Arms Tactical Trainer (CATT) Core							585		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
AVCATT	C/CPAF	L3 Communications Corporation, Arlington, Texas	28579	10407	2Q	1007	2Q	2324	2Q	Cont.	Cont.	Cont.
Subtotal:			28579	10407		1007		2324		Cont.	Cont.	Cont.
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:												
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:												
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Project Office Support		PEO STRI, Orlando, Florida	506	385	1-4Q	282	1-4Q	167	1-4Q	Cont.	Cont.	Cont.
SBIR/STTR						71					71	
Subtotal:			506	385		353		167		Cont.	Cont.	Cont.

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - System Development and Demonstration

0604780A - Combined Arms Tactical Trainer (CATT) Core

585

Project Total Cost:

29085

10792

1360

2491

Cont.

Cont.

Cont.

Schedule Profile (R4 Exhibit)

May 2009

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604780A - Combined Arms Tactical Trainer (CATT) Core

PROJECT
585

Event Name	FY 08				FY 09				FY 10				FY 11				FY 12				FY 13				FY 14				FY 15			
	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
Synthetic Environment Core (SE Core) Integration (includes OneSAF Integration)	█				█				█																							
Mission Rehearsal Capability/ Enhanced Image Generator (IG)	█				█				█																							
Required Interoperability With Other Combined Arms Simulators	█				█				█				█																			
Life Cycle Baseline Enhancements to the Infrastructure and Techn. Obsolescence	█				█				█																							
Classified Operations	█				█				█																							
Gunner Chief Crew Station	█				█				█																							
Longbow Block III	█				█				█																							
Light Utility Helicopter Simulator Development					█				█																							

Schedule Detail (R4a Exhibit)

May 2009

BUDGET ACTIVITY		PE NUMBER AND TITLE						PROJECT	
5 - System Development and Demonstration		0604780A - Combined Arms Tactical Trainer (CATT) Core						585	
<u>Schedule Detail</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	
Synthetic Environment Core (SE Core) Integration (includes OneSAF Integration)	1Q - 4Q	1Q - 4Q	1Q - 4Q						
Mission Rehearsal Capability/ Enhanced Image Generator (IG)	1Q - 4Q	1Q - 2Q							
Required Interoperability With Other Combined Arms Simulators	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q					
Life Cycle Baseline Enhancements to the Infrastructure and Techn. Obsolescence	1Q - 4Q	1Q - 4Q							
Classified Operations	1Q - 4Q								
Gunner Chief Crew Station	1Q - 2Q								
Longbow Block III	1Q - 2Q								
Light Utility Helicopter Simulator Development		3Q - 4Q	1Q - 3Q						
NCM3 Integration				1Q - 4Q					

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

May 2009

BUDGET ACTIVITY		PE NUMBER AND TITLE			
5 - System Development and Demonstration		0604783A - JOINT NETWORK MANAGEMENT SYSTEM			
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
363 JOINT NETWORK MANAGEMENT SYSTEM	2658	673			3331

A. Mission Description and Budget Item Justification: This program element supports the Joint Network Management System (JNMS) RDTE development effort. The JNMS is a Combatant Commander and Commander, Joint Task Forces (CJTF), joint communications planning and management tool. JNMS is an automated software system. It will provide communication planners with a common set of tools to conduct high level planning (war planning), detailed planning and engineering, monitoring, control and reconfiguration, spectrum planning and management, and security of communications and data systems used to support a Joint Task Force (JTF). These systems include circuit switches, data switches, message switches, single channel networks, transmission systems and satellite systems. It will promote force level situational awareness; provide enhanced flexibility to support the commander's intent; improve management of scarce spectrum resources; and provide increased security of these critical systems and networks. This development effort entails development of the JNMS architecture, software development and integration of Government-Off-the-Shelf and Commercial-Off-the Shelf software, functional and operational testing, and development of Integrated Logistics Support data and documentation. Initial software baseline was developed to provide base capability to the user with subsequent baselines developed providing additional functionality and capability.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

May 2009

BUDGET ACTIVITY	PE NUMBER AND TITLE		
5 - System Development and Demonstration	0604783A - JOINT NETWORK MANAGEMENT SYSTEM		
<u>B. Program Change Summary</u>	FY 2008	FY 2009	FY 2010
Previous President's Budget (FY 2009)	2759	676	
Current BES/President's Budget (FY 2010)	2658	673	
Total Adjustments	-101	-3	
Congressional Program Reductions		-3	
Congressional Rescissions			
Congressional Increases			
Reprogrammings	-27		
SBIR/STTR Transfer	-74		
Adjustments to Budget Years			

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration		PE NUMBER AND TITLE 0604783A - JOINT NETWORK MANAGEMENT SYSTEM			PROJECT 363
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
363 JOINT NETWORK MANAGEMENT SYSTEM	2658	673			3331

A. Mission Description and Budget Item Justification: This program element supports the Joint Network Management System (JNMS) RDTE development effort. The JNMS is a Combatant Commander and Commander, Joint Task Forces (CJTF), joint communications planning and management tool. JNMS is an automated software system. It will provide communication planners with a common set of tools to conduct high level planning (war planning), detailed planning and engineering, monitoring, control and reconfiguration, spectrum planning and management, and security of communications and data systems used to support a Joint Task Force (JTF). These systems include circuit switches, data switches, message switches, single channel networks, transmission systems and satellite systems. It will promote force level situational awareness; provide enhanced flexibility to support the commander's intent; improve management of scarce spectrum resources; and provide increased security of these critical systems and networks. This development effort entails development of the JNMS architecture, software development and integration of Government-Off-the-Shelf and Commercial-Off-the Shelf software, functional and operational testing, and development of Integrated Logistics Support data and documentation. Initial software baseline was developed to provide base capability to the user with subsequent baselines developed providing additional functionality and capability.

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
Software Development (System Design, Software Integration, and Functional Qualification Testing) for Baseline 1.5	2658	658	
Small Business Innovative Research/Small business Technology Transfer Programs		15	
Total	2658	673	

<u>B. Other Program Funding Summary</u>	FY 2008	FY 2009	FY 2010	To Compl	Total Cost
B95700 JOINT NETWORK MGT SYSTEM	10745	11026		Continuing	Continuing

Comment:

C. Acquisition Strategy TRADOC approved Revision 2 to the JNMS Operational Requirements Document (ORD) on 16 May 00. Milestone A/B approval led to two contract awards to SAIC on 14 May 2001. The first contract, a cost-plus-fixed-fee (CPFF) and firm fixed price (FFP) contract, is for software integration/development, non-recurring engineering efforts, and optional hardware and software procurement for limited and full rate production quantities. This development contract provides the vehicle for the phased development of the JNMS operational baselines, combined build Key Performance Parameter (KPP) Threshold Baselines and subsequent Baselines. The second contract, a time-and-materials contract, covers tasks such as fielding, training, technical assistance, and an option for Post Deployment/Post Production Software Support (PD/PPSS). The SAIC contracts were awarded based on a competitive, best value source selection process. The Initial Operational Test and Evaluation (IOT&E) was conducted in 2QFY04. The

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY

5 - System Development and Demonstration

PE NUMBER AND TITLE

0604783A - JOINT NETWORK MANAGEMENT SYSTEM

PROJECT

363

Milestone C decision review with the Milestone Decision Authority (MDA), the Program Executive Officer, Command, Control, and Communications - Tactical (PEO C3T) was held in 3QFY04 resulting in Low Rate Initial Production (LRIP) approval. After successful development testing and a satisfactory Government Assessment, a subsequent Milestone decision review was held 2QFY05 with the MDA approving an increase in the LRIP to 35%. In 4QFY05, a Limited User Test (LUT) was successfully conducted which supported the approval of the Full Rate Production Decision (FRPD) on 8 Dec 05 signaling entry into full production and fielding. Fieldings began 2QFY06.

The SAIC contract option for the development of software Build 2 awarded 3QFY05 was scheduled into several incremental releases (1.4/1.5) due to a re-prioritization of the software development based on recent Joint Staff J6 guidance. The J6 desired smaller software increments to expedite releases to enable the field to utilize the additional capabilities sooner. Functional enhancements were added to builds 1.4 and 1.5 in order to meet the J6 guidance. FY09 will provide PDSS support to the JNMS Program to include Software maintenance, Information Assurance Vulnerability Management (IAVM), and Enhancements Requests/Problem Reports.

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE								PROJECT	
5 - System Development and Demonstration			0604783A - JOINT NETWORK MANAGEMENT SYSTEM								363	
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
JNMS Software Development	CPFF	SAIC - San Diego, CA	36619	223	2-3Q						34250	
Hardware/Software Suites	FFP	SAIC - San Diego, CA	1972								1972	
Subtotal:			38591	223							36222	
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Integrated Logistics Support	Various	Misc	541	155	2Q					Cont.	Cont.	
Software Development Support	Various	Misc	2965	250	2Q					Cont.	Cont.	
Contractor Engineering	MIPR	Various	2243	350	2Q	144	2Q			Cont.	Cont.	
Government Engineering	MIPR	Various	4868	252	2Q	100	2Q			Cont.	Cont.	
Subtotal:			10617	1007		244				Cont.	Cont.	
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test Support	T&M	SAIC - San Diego, CA	1929	50	2Q					Cont.	Cont.	
Operational Test Support	T&M	Misc	5368							Cont.	Cont.	
Initial Operational Test & Evaluation (IOTE)	T&M	SAIC, San Diego CA & Piscataway,NJ	478							478	478	
Other Test Support (Cert, GA, etc)	Various	Misc	955	250	1-2Q	79	1-2Q			Cont.	Cont.	
Subtotal:			8730	300		79				Cont.	Cont.	

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration			PE NUMBER AND TITLE 0604783A - JOINT NETWORK MANAGEMENT SYSTEM							PROJECT 363		
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
PM Support	Various	Ft Monmouth, NJ	3667	685	1-4Q	350	1-4Q			Cont.	Cont.	
JNMS MITRE Support	PWD	Eatontown, NJ	1041							Cont.	Cont.	
NETOPS Integration & Engineering Spt				443	3-4Q						443	
Subtotal:			4708	1128		350				Cont.	Cont.	
Project Total Cost:			62646	2658		673				Cont.	Cont.	

Schedule Profile (R4 Exhibit)

May 2009

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604783A - JOINT NETWORK MANAGEMENT SYSTEM

PROJECT
363

Event Name	FY 08				FY 09				FY 10				FY 11				FY 12				FY 13				FY 14				FY 15			
	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
SOFTWARE DEVELOPMENT BUILD 1.5	SW DEV 1.5																															
1.5	FQT 1.5																															
Government Assessment 1.5	GA 1.5																															
PDSS Support					PDSS Support																											
Software Maintenance					Software Maintenance																											
Information Assurance Vulnerability Mgmt (IAVM)&Enhancement Req/Problem Rpt					IAVM & ERs/PRs																											

Schedule Detail (R4a Exhibit)

May 2009

BUDGET ACTIVITY		PE NUMBER AND TITLE						PROJECT	
5 - System Development and Demonstration		0604783A - JOINT NETWORK MANAGEMENT SYSTEM						363	
<u>Schedule Detail</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	
FRPD									
FIRST UNIT EQUIPPED (FUE)									
SOFTWARE DEVELOPMENT BUILD 1.3									
SOFTWARE DEVELOPMENT BUILD 1.4									
SOFTWARE DEVELOPMENT BUILD 1.5	1Q - 3Q								
FUNCTIONAL QUALIFICATION TESTS; 1.4									
1.5	3Q								
Government Assessment 1.5	3Q								
PDSS Support		1Q - 4Q							
Software Maintenance		1Q - 4Q							
Information Assurance Vulnerability Mgmt (IAVM)&Enhancement Req/Problem Rpt		1Q - 4Q							

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

May 2009

BUDGET ACTIVITY		PE NUMBER AND TITLE			
5 - System Development and Demonstration		0604802A - Weapons and Munitions - Eng Dev			
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	63434	57948	34878	Continuing	Continuing
613 MORTAR SYSTEMS	2699				9455
AS5 Artillery Munitions Engineering Development	7636	3987			24463
S23 SURF LNCH ADV MED RNG AIR-TO-AIR MSL (SLAMRAAM)	33570	33662	11736	Continuing	Continuing
S36 PRECISION GUIDANCE KIT	19529	20299	23142	Continuing	Continuing

A. Mission Description and Budget Item Justification: This program element funds multiple efforts for engineering development of weapons and munitions systems.

Project 613, FY 08 funds the 81mm Mortar Anti-Personnel Anti-Materiel (MAPAM) Program. MAPAM is an improved High Explosive Mortar Cartridge with increased lethality.

Project AS5, FY08 funds the Hybrid Propellant program for the Future Combat System (FCS). Hybrid Propellant is a unique propellant under development for future application in small, medium and large caliber munitions. Hybrid propellant releases energy more efficiently than conventional propellants and provides FCS munitions with the highest possible muzzle velocity for extended ranges/lethality, the prospect of lighter barrels with less recoil, extended wear characteristics and the ability to use heavier projectiles at standard muzzle velocities for greater lethality. FY08 also funds Lightweight Multi-Functional Material Technology (LMFMT), a materials development program for Ammunition containers. It includes the use of advanced composite and non-composite materials in developing the design of mortar containers and barrier applications.

Project S23, the Surface Launched Advanced Medium Range Air-To-Air Missile (SLAMRAAM), is the initial kinetic energy component of Integrated Air & Missile Defense (IAMD), an Air and Missile Defense (AMD) Future Force system. SLAMRAAM's force protection mission is to engage the low-altitude aerial threats out to 18km.

Project S36 funds engineering development of precision guidance systems applicable to Indirect Fire weapon systems (artillery and mortars). This includes the Precision Guidance Kit which is a Global Positioning guidance kit with fuzing functions. PGK will be adaptable to existing ammunition. It corrects the trajectory of projectiles to reduce delivery errors, improving accuracy. Precision guidance systems will effectively reduce target delivery error reducing the number of rounds required to conduct a fire mission. This capability will benefit indirect fire systems.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604802A - Weapons and Munitions - Eng Dev
--------------------------------------------------------------------	--------------------------------------------------------------------------

<u>B. Program Change Summary</u>	FY 2008	FY 2009	FY 2010
Previous President's Budget (FY 2009)	65236	52140	23662
Current BES/President's Budget (FY 2010)	63434	57948	34878
Total Adjustments	-1802	5808	11216
Congressional Program Reductions		-192	
Congressional Rescissions			
Congressional Increases		6000	
Reprogrammings	20		
SBIR/STTR Transfer	-1822		
Adjustments to Budget Years			11216

Change Summary Explanation:

FY 2009: Congressional Increases for Hybrid Propellant for Medium and Large Caliber Ammunition (\$3.2M); Lightweight Multi-Functional Material Technology for Combat Munitions Logistics (\$0.8M) and Extended Range Modular Sniper Rifle System (\$2.0M).

FY 2010: Funds increased for Project S23, the Surface Launched Advanced Medium Range Air-To-Air Missile (SLAMRAAM) program to develop Engage on Remote (EOR) capability, Training, Aids, Devices, Simulators and Simulations (TADSS) and complete Initial Operational Test and Evaluation (IOTE).

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration		PE NUMBER AND TITLE 0604802A - Weapons and Munitions - Eng Dev			PROJECT S23	
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost	
S23 SURF LNCH ADV MED RNG AIR-TO-AIR MSL (SLAMRAAM)	33570	33662	11736	Continuing	Continuing	

A. Mission Description and Budget Item Justification: The Surface Launched Advanced Medium Range Air-To-Air Missile (SLAMRAAM) is a critical component of the Army's future Integrated Air & Missile Defense (IAMD) system. SLAMRAAM consists of launcher platforms employing the proven AIM-120-C7 Advanced Medium Range Air-to-Air Missile; Integrated Fire Control Station (IFCS) command, control, and communications platforms; and Improved Sentinel Sensors. SLAMRAAM is a lightweight, day or night, adverse weather, non-line-of-sight system that counters cruise missiles (CM), unmanned aerial vehicle (UAV), fixed wing, and rotary wing threats. SLAMRAAM is highly mobile and able to operate in a variety of combat situations to protect maneuver forces and strategic-level critical assets. SLAMRAAM represents a substantial increase in performance over current short-range air defense systems.

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
Product Development	12532	237	
Contractor Support Cost	3852	5334	
Test and Evaluation	7712	22340	
System Engineering/ Program Management (SE/PM)	9474	4808	11736
Training (TADSS)			
Small Business Innovative Research/Small Business Technology Transfer Program		943	
Total	33570	33662	11736

<u>B. Other Program Funding Summary</u>	FY 2008	FY 2009	FY 2010	To Compl	Total Cost
PE 0604869A, Proj M06, Patriot/MEADS Combined Aggregate Program (CAP)	401565	429846	569182	Continuing	Continuing
SSN C50001, PATRIOT/MEADS CAP		30957	16406	Continuing	Continuing
PE 0102419A, Proj E55, JLENS	464877	355257	360076	Continuing	Continuing
SSN BZ0525, JLENS Production				Continuing	Continuing
PE 0604802A, Proj S23, SLAMRAAM	33570	33662	11736	Continuing	Continuing
SSN C81002, SLAMRAAM Launcher		40349	72920	Continuing	Continuing
SSN C81004, Surfaced-Launched AMRAAM Missile				Continuing	Continuing

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY	PE NUMBER AND TITLE			PROJECT	
5 - System Development and Demonstration	0604802A - Weapons and Munitions - Eng Dev			S23	
PE 0604820A, Proj E10, SENTINEL	6828			Continuing	Continuing
PE 0303327A, Proj S34, AMD System of System Engineering and Integration	123712	114673	209531	Continuing	Continuing
SSN BZ5075000, ARMY IAMD BATTLE COMMAND SYSTEM (IBCS)				Continuing	Continuing
PE 0643305, Proj TR7, Mobile Directed Energy Weapon System (MDEWS)				Continuing	Continuing

Comment: This program is an integral part of the PEO, Missiles and Space Integrated Air and Missile Defense (IAMD) architecture.

C. Acquisition Strategy System Development and Demonstration (SDD) contract award in 2nd Quarter FY04. SDD is an ongoing effort that will result in completion of Milestone C 1QTRFY10, followed by a First Unit Equipped (FUE) 4QTRFY11.

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE								PROJECT	
5 - System Development and Demonstration			0604802A - Weapons and Munitions - Eng Dev								S23	
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Contractor Hardware/Software Development	SS/CP/IF/CPF F*	Raytheon, Tewksbury, MA	109849	12532	1-3Q	237	1-3Q				107053	107053
Government Prototype Manufacturing (Government Furnished Equipment)	Not Applicable (N/A)	Multiple	3625								3625	
Subtotal:			113474	12532		237					110678	107053
Remarks: *SS/CP/IF/CPF - Sole Source/Cost Plus Incentive Fee/Cost Plus Fixed Fee												
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Contractor Support Costs	SS/CP/IF/CPF F*	Raytheon, Tewksbury, MA	14923	3852	1Q	5334	1Q				24109	20962
Government Training (TADSS)	Not Applicable (N/A)	Multiple									19110	
Subtotal:			14923	3852		5334					43219	20962
Remarks: *SS/CP/IF/CPF - Sole Source/Cost Plus Incentive Fee/Cost Plus Fixed Fee												
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Government Modeling and Simulation	N/A	Multiple	6600								6600	
Government System Test and Evaluation	N/A	Multiple	5136	6324	1-2Q	19193	1-2Q		1Q		30653	
Contractor System Test and Evaluation	SS/CP/IF/CPF F*	Raytheon, Tewksbury, MA	7467	1388	1Q	3147					12002	12002

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604802A - Weapons and Munitions - Eng Dev							PROJECT S23	
Subtotal:	19203	7712		22340				49255	12002

Remarks: *SS/CPIF/CPFF - Sole Source/Cost Plus Incentive Fee/Cost Plus Fixed Fee

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Contractor SE/PM	SS/CPIF/CPF F*	Raytheon, Tewksbury, MA	33441	7628	1Q	2074	1Q		1Q		43143	43247
Government SE/PM	N/A	Multiple	16438	1846	1-2Q	3677	1-2Q	11736		7642	41339	
Subtotal:			49879	9474		5751		11736		7642	84482	43247

Remarks: Government Modeling and Simulation in FY08 and beyond is included in Test and Evaluation.
*SS/CPIF/CPFF - Sole Source/Cost Plus Incentive Fee/Cost Plus Fixed Fee

Project Total Cost:	197479	33570		33662		11736		7642	287634	183264
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Schedule Detail (R4a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration		PE NUMBER AND TITLE 0604802A - Weapons and Munitions - Eng Dev					PROJECT S23		
<u>Schedule Detail</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	
System Development & Demonstration	1Q - 4Q	1Q - 4Q							
Air & Missile Defense Common Software (ACS) Development	1Q - 2Q								
Government DT/LUT		3Q - 4Q	1Q						
Long Lead LRIP Decision		3Q							
MS C LRIP Decision			1Q						
Low Rate Initial Production			1Q - 4Q						

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604802A - Weapons and Munitions - Eng Dev			PROJECT S36	
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
S36 PRECISION GUIDANCE KIT	19529	20299	23142	Continuing	Continuing

A. Mission Description and Budget Item Justification: This program funds engineering development of precision guidance systems applicable to Indirect Fire weapon systems (artillery and mortars). This includes the Precision Guidance Kit which is a Global Positioning guidance kit with fuzing functions. PGK will be adaptable to existing ammunition. It corrects the trajectory of projectiles to reduce delivery errors while improving accuracy. Precision guidance systems will effectively reduce target delivery error reducing the number of rounds required to conduct a fire mission. This capability will benefit indirect fire systems. The increase in effectiveness gives commanders the operational capability to defeat more targets with the same basic load, while reducing the logistical burden associated with current mission requirements.

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
Complete Phase 2 Engineering and Manufacturing Development (EMD)- Increment 1	10970	12465	690
Initiate Engineering and Manufacturing Development (EMD)- Increment 2			6952
Continue Engineering Support and Platform Integration	7329	3712	4650
Continue Developmental Testing	1230	3554	5850
Conduct Technology maturation			5000
Small Business Innovative Research/Small Business Technology Transfer Programs		568	
Total	19529	20299	23142

<u>B. Other Program Funding Summary</u>	FY 2008	FY 2009	FY 2010	To Compl	Total Cost
E99250 Course Correcting Fuze (CCF)		15587	27670	Continuing	Continuing

Comment:

C. Acquisition Strategy The Acquisition Strategy/Acquisition Plan for the PGK program was approved by the Milestone Decision Authority (MDA) on 20 October 2005. The PGK program is using an incremental development approach to provide a combat capability to the Soldier as quickly as possible, and to deliver advanced capabilities and lower costs as technology matures. The Army approved Milestone A (MS A) for Increment 1 in FY06, and following a Technology Development Demonstration proceeded to Milestone B in May 2007. Alliant Techsystems (ATK) was awarded the Engineering and Manufacturing Development (EMD) program. Approval to build First Article/Production Verification Test will occur at In-Process Review (IPR)1 (3QFY09), and Milestone C (MSC)/Type Classification Limited Procurement (TCLP) is scheduled

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY

5 - System Development and Demonstration

PE NUMBER AND TITLE

0604802A - Weapons and Munitions - Eng Dev

PROJECT

S36

for 4QFY09. Materiel Release of Increment 1 is scheduled for 4QFY10. A Milestone B for Increment 2 is scheduled for 2QFY10. The PGK program will be supported by several guidance technology maturation efforts.

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
5 - System Development and Demonstration			0604802A - Weapons and Munitions - Eng Dev							S36		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
PGK TD Contract	CPIF	ATK, Plymouth, MN	7956								3978	
PGK TD Contract	CPIF	BAE, Minneapolis, MN	5956								5956	
Soft Recovery Modules	MIPR	SubSystems Technology, Rosslyn, VA	116								116	
PGK EMD Contract - Increment 1	CPAF	ATK, Plymouth, MN	7544	10970	1-2Q	12245	1-4Q			Cont.	30759	
PGK EMD Contract Award Fee Incr 1	CPAF	ATK, Plymouth, MN				220	4Q	690	1Q		910	
PGK EMD Contract- Increment 2	CPIF	TBD						6952	2Q	Cont.	Cont.	
M107 Metal Parts	MIPR	US ARMY Field Support Command, RIA, IL	79								79	
Subtotal:			21651	10970		12465		7642		Cont.	Cont.	

Remarks: 6952

II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Product Manager's Office	In House	PM CAS, Picatinny NJ	889	734	1-4Q	640	1-4Q	700	1-4Q	Cont.	Cont.	
Government IPT Support	MIPR	ARDEC, Picatinny NJ	11430	2050	1-4Q	2200	1-4Q	1800	1-4Q	Cont.	Cont.	
Platform Integration		Various		3390	1-4Q	865	1-2Q	1300	1-2Q	Cont.	Cont.	
Miscellaneous Support	Various	Various	5008	715	1-4Q	200	1-4Q	700	1-4Q	Cont.	Cont.	
Future Increments Technology Maturation	Various	Various						5000	1-4Q	Cont.	Cont.	
Subtotal:			17327	6889		3905		9500		Cont.	Cont.	

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
5 - System Development and Demonstration			0604802A - Weapons and Munitions - Eng Dev							S36		
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Component Air Gun/Railgun Testing	MIPR	ARDEC, Picatinny, NJ	317							Cont.	Cont.	
System Demonstration Testing Incr 1	MIPR	Yuma Proving Ground, Yuma, AZ	2340	1230	2Q	2938	2-4Q			Cont.	6508	
System Demonstration Testing Incr 2	MIPR							2000	3-4Q		2000	
Other Development Testing		Various				616	1-4Q			Cont.	Cont.	
IOT&E Incr 1	MIPR	Yuma Proving Ground, Yuma, AZ						3500	3Q		3500	
Cold Region Testing Incr 1	MIPR	Cold Region Test Center, Ft. Greely, Alaska						350	2Q		350	
Subtotal:			2657	1230		3554		5850		Cont.	Cont.	
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
PGK Management Support Contract	FFP	Camber, Mt. Arlington, NJ	150	440	2Q	150	1Q	150	3Q	Cont.	Cont.	
PGK Analysis Support	MIPR	Command and Control Directorate, Ft. Monmouth, NJ				75	1Q				75	
PGK Support Contract	FFP	MITRE Corporation, Bedford, MA				150	1Q				150	
Subtotal:			150	440		375		150		Cont.	Cont.	
Project Total Cost:			41785	19529		20299		23142		Cont.	Cont.	

Schedule Profile (R4 Exhibit)

May 2009

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604802A - Weapons and Munitions - Eng Dev

PROJECT
S36

Event Name	FY 08				FY 09				FY 10				FY 11				FY 12				FY 13				FY 14				FY 15			
	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
PGK - Increment 1	TD/EMD																															
(1) Milestone B1	▲ ₁ MS B1																															
(2) IPR1- Approve FAT/PVT									▲ ₂ IPR1																							
(3) Milestone C1-Type Classification Limited Procurement									▲ ₃ MS C1- TC LP																							
First Article Testing/Production Verification Test- Increment 1									■ FAT/PVT																							
(4) IPR1- Authorize IOTE/Production Hardware									▲ ₄ IPR2																							
IOTE- Increment 1									■ IOTE- Incr 1																							
(5) Type Classification Standard/Full Materiel Release - Increment 1									▲ ₅ TC/FMR																							
(6) Milestone B2									▲ ₆ MS B2																							
PGK - Increment 2									■ EMD- Incr 2																							

Schedule Detail (R4a Exhibit)

May 2009

BUDGET ACTIVITY		PE NUMBER AND TITLE						PROJECT	
5 - System Development and Demonstration		0604802A - Weapons and Munitions - Eng Dev						S36	
<u>Schedule Detail</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	
PGK - Increment 1	1Q - 4Q	1Q - 4Q							
Milestone B1	3Q								
IPR1- Approve FAT/PVT		3Q							
Milestone C1-Type Classification Limited Procurement		4Q							
First Article Testing/Production Verification Test- Increment 1			1Q - 2Q						
IPR1- Authorize IOTE/Production Hardware			2Q						
IOTE- Increment 1			3Q - 4Q						
Type Classification Standard/Full Materiel Release - Increment 1			4Q						
Milestone B2			2Q						
PGK - Increment 2			2Q - 4Q						

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

May 2009

BUDGET ACTIVITY		PE NUMBER AND TITLE			
5 - System Development and Demonstration		0604804A - Logistics and Engineer Equipment - Eng Dev			
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	40019	38391	36018	Continuing	Continuing
194 ENGINE DRIVEN GEN ED	11439	6348	1390	Continuing	Continuing
H01 COMBAT ENGINEER EQ ED	2959	3259	8496	Continuing	Continuing
H02 TACTICAL BRIDGING - ENGINEERING DEVELOPMENT	6530	12211	9784	Continuing	Continuing
H14 MATERIALS HANDLING EQUIPMENT - ED	134	452	501		1087
L39 Field Sustainment Support ED	7335	2084	4527	Continuing	Continuing
L41 WATER AND PETROLEUM DISTRIBUTION - ED	5167	5839	2503	Continuing	Continuing
L42 CAMOUFLAGE SYSTEM ED	240	247			487
L43 ENGINEER SUPPORT EQUIPMENT - ED	495	513	978	Continuing	Continuing
L46 Maintenance Support Equipment	1406	1507	3266	Continuing	Continuing
L47 IMPROVED ENVIRONMENTAL CONTROL UNITS ED	4314	5931	4573		14818

A. Mission Description and Budget Item Justification: This Program Element (PE) provides system development and demonstration for various projects. This PE includes the development of military tactical bridging, material handling equipment, construction equipment, engineer support equipment, soldier support equipment (to include shelter systems, environmental control, field service equipment, camouflage systems and aerial delivery equipment), water purification equipment, petroleum distribution equipment, mobile electric power and water craft.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

May 2009

BUDGET ACTIVITY	PE NUMBER AND TITLE		
5 - System Development and Demonstration	0604804A - Logistics and Engineer Equipment - Eng Dev		
<u>B. Program Change Summary</u>	FY 2008	FY 2009	FY 2010
Previous President's Budget (FY 2009)	47108	37718	47619
Current BES/President's Budget (FY 2010)	40019	38391	36018
Total Adjustments	-7089	673	-11601
Congressional Program Reductions		-127	
Congressional Rescissions			
Congressional Increases		800	
Reprogrammings	-5791		
SBIR/STTR Transfer	-1298		
Adjustments to Budget Years			-11601

Change Summary Explanation: Funding - FY 2008 and FY 2010: Funds realigned to support Army higher priority requirements.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604804A - Logistics and Engineer Equipment - Eng Dev			PROJECT 194	
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
194 ENGINE DRIVEN GEN ED	11439	6348	1390	Continuing	Continuing

A. Mission Description and Budget Item Justification: This project supports the Mobile Electric Power (MEP) program which is established to develop a Modernized, Standard Family of Mobile Electric Power Sources for All Services throughout the Department of Defense. Building on the device/component evaluations conducted in PE 0603804A project G11, this project supports the system development and demonstration of a series of innovative mobile electric power sources that are essential to the development and eventual fielding of modernized mobile electric power sources from 0.5 kW to 920 kW. These sources will ensure compliance with federally mandated environmental statutes and significantly lower noise and thermal signatures (thereby improving battlefield survivability), improve fuel and electrical efficiency, reduce weight, enhance portability, improve reliability and maintainability, and reduce operational and support costs. FY09 will fund Advanced Medium Mobile Power Sources (AMMPS) pre-production tests, development tests and operational tests, complete type classification, materiel release and other actions required for Milestone C production award.

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
FY08: Begin AMMPS pre-production test sets. Continue engineering and logistics data deliverables.	11439		
FY09: Complete AMMPS pre-production test sets. Continue engineering and logistics data deliverables. Begin Developmental Testing.		6192	
FY08: 2KW Military Tactical Generator Product Improvement			
FY10: Complete DT Operational Test (OT) for AMMPS. Complete Documentation for Type Classification (TC), Materiel Release (MR) and other actions required for Milestone C Production Award, e.g., TM's, sustainment test, fielding plans.			1210
FY10-FY11: LAMPS Prepare performance Spec. Begin PHASE I SDD.			180
Small Business Innovative Research/Small Business Technology Transfer Program		156	
Total	11439	6348	1390

<u>B. Other Program Funding Summary</u>	FY 2008	FY 2009	FY 2010	To Compl	Total Cost
0603804A - Logistics and Engineer Equipment - Adv Dev G11	3067	3346	2636	Continuing	Continuing
OPA3, MA9800, Generators and Associated Equipment	241798	254809	208277	Continuing	Continuing

Comment:

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY

5 - System Development and Demonstration

PE NUMBER AND TITLE

0604804A - Logistics and Engineer Equipment - Eng Dev

PROJECT

194

C. Acquisition Strategy Perform Developmental Testing (DT)/Operational Testing (OT) for the AMMPS family; perform phase II contract award through a down select. Developmental test and evaluation of technologies that transition into procurement after Milestone C. Complete Delivery of Technical Drawing Packages, Repair Parts and Special Tools List (RPSTL), Technical Manuals and Training Packages in preparation of Milestone C and Phase III-Production and Fielding.

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
5 - System Development and Demonstration			0604804A - Logistics and Engineer Equipment - Eng Dev							194		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
AMMPS(5-60kW)	CPFF	Various	28137	7256	2-4Q	700	2Q	600	1Q	Cont.	Cont.	
Follow-on 2kW Improvement Program	CPFF	Various	3300		4Q						3300	
IECU	CPFF	Various	613							Cont.	Cont.	
LAMPS (100-200kw)											1415	
Subtotal:			32050	7256		700		600		Cont.	Cont.	
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
AMMPS(5-60kW)	In-house	CECOM, Ft Belvoir, VA	2375	1319	2Q	400	1Q	200	2Q	Cont.	Cont.	
Follow-on 2kW Improvement Program	In-house	CECOM, Ft Belvoir, VA	65								65	
IECU		CECOM, Ft Belvoir, VA/	372							Cont.	Cont.	
Subtotal:			2812	1319		400		200		Cont.	Cont.	
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
AMMPS(5-60kW)	MIPR	Various	2031	2559	2Q	4790	1Q	200	1Q	Cont.	Cont.	
Follow-on 2kW Improvement Program	MIPR	CECOM, Ft Belvoir, VA	216								216	
Subtotal:			2247	2559		4790		200		Cont.	Cont.	

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604804A - Logistics and Engineer Equipment - Eng Dev

PROJECT
194

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
AMMPS(5-60kW)	In-house	CECOM, Ft Belvoir, VA	2507	305	1-4Q	458	1-4Q	210	1-4Q	Cont.	Cont.	
IECU		CECOM, Ft Belvoir, VA	15							Cont.	Cont.	
LAMPS (100-200kw)								180	1-4Q		180	
Subtotal:			2522	305		458		390		Cont.	Cont.	
Project Total Cost:			39631	11439		6348		1390		Cont.	Cont.	

Schedule Profile (R4 Exhibit)

May 2009

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604804A - Logistics and Engineer Equipment - Eng Dev

PROJECT
194

Event Name	FY 08				FY 09				FY 10				FY 11				FY 12				FY 13				FY 14				FY 15			
	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
AMMPS Program																																
Award Phase II / Conduct DT & OT																																
(1) MS C																																
(2) Production Release																																
Transition to Production																																
2kW Follow-on Improvement Program																																
Award Multiple Contracts																																
LAMPS (Large Advanced Mobile Power Systems)																																
Prepare Performance Spec																																

Schedule Detail (R4a Exhibit)

May 2009

BUDGET ACTIVITY		PE NUMBER AND TITLE						PROJECT	
5 - System Development and Demonstration		0604804A - Logistics and Engineer Equipment - Eng Dev						194	
<u>Schedule Detail</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	
AMMPS Program	1Q - 4Q	1Q - 4Q	1Q - 3Q						
Award Phase II / Conduct DT & OT	1Q - 4Q	1Q - 4Q	1Q						
MS C			3Q						
Production Release			4Q						
Transition to Production			4Q						
2kW Follow-on Improvement Program	1Q - 4Q								
Award Multiple Contracts	1Q - 4Q								
LAMPS (Large Advanced Mobile Power Systems)			3Q - 4Q						
Prepare Performance Spec			3Q - 4Q						

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration		PE NUMBER AND TITLE 0604804A - Logistics and Engineer Equipment - Eng Dev			PROJECT H01	
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost	
H01 COMBAT ENGINEER EQ ED	2959	3259	8496	Continuing	Continuing	

A. Mission Description and Budget Item Justification: This project supports the System Development and Demonstration of military Construction Equipment used in support of horizontal and vertical engineer construction tasks; required in order to develop a variety of enabling systems that will support and improve mobility for Engineers in the Brigade Combat Teams (BCT) and Combat Support Brigades (CSB) modular forces. This project also supports the SDD of enabling systems to meet critical capabilities of joint interdependence through Air and Ground (A/G) Line of Communication (LOC) and Rapid Tactical Earthmoving (RTE) repair and construction which increase the operational reach of modular forces. The BCT and CSB systems include: High Mobility Engineer Excavators (HMEE, Types I and III); Scrapers, Scoop Loaders, Skid Steer Loaders, Deployable Universal Combat Earthmover (DEUCE), Hydraulic Excavators (HYEX), Dozers and Graders.

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
FY08-FY09: Conducts market research and update specs for future engineer transformation.	67	270	
FY08-FY09: Continues development of engineer and acquisition documents required for Milestone Decisions.	67	20	
FY08-FY09: Conducts Test and Evaluation of future engineer equipment.		150	
FY08-FY11: Design armor kits for Construction Equipment.	1592		
FY08: Conducts Armor Test and Evaluation for Construction Equipment Systems	1233		
FY09: Development of Robotics Research		1319	260
FY09: Simulator Development		1409	1250
FY10: Forced Entry (Airborne/Air Assault) HMEE Type II Development			5274
FY10-FY11: Survivability Enhancements and Armor for Construction Equipment			1712
Small Business Innovative Research/Small Business Technology Transfer Program		91	
Total	2959	3259	8496

<u>B. Other Program Funding Summary</u>	FY 2008	FY 2009	FY 2010	To Compl	Total Cost
OPA3, R05900, High Mobility Engineer Excavator I	25637	24309	24997	Continuing	Continuing
OPA3, R05910, High Mobility Engineer Excavator III	14179	30199	15299		71179
OPA3, R03801, Grader, Mtzd, Hvy	14908	37698	56267	Continuing	Continuing

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY	PE NUMBER AND TITLE				PROJECT
5 - System Development and Demonstration	0604804A - Logistics and Engineer Equipment - Eng Dev				H01
OPA3, R14200, Scraper, Elevating SP 11 CY Min Sec	22980				22980
OPA3, M06400, Loader, Scoop Type, 2 1/2 CU YD	6547	14212		12393	57140
OPA3, R03900, Loader, Scoop Type, 4 - 5 CU YD	13205	13776		11189	38170
OPA3, X01500, Hydraulic Excavator	3904	9565		14762	40675
OPA3, M08100, Plant, Asphalt Mixing		7960		14278	56950
OPA3, M06100, Tractor Full Tracked, Med T-9	8134	33727		55388	544912

Comment:

C. Acquisition Strategy Conduct research, development, and investigations on future Construction Equipment (CE) and identify the path forward for programs to be transitioned for PEO program management. Identify technical advancements that can improve reliability, availability, and maintainability and reduce the logistical footprints for future CE equipment.

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
5 - System Development and Demonstration			0604804A - Logistics and Engineer Equipment - Eng Dev							H01		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Non-split rim wheel development	FFP	Hutchinson Tire, Hutchinson, KS	400								400	400
Complete SDD Contracts for HMEE Type I	FFP	ADI, Australia; JCB, Pooler, GA	4047								4047	4047
Market Research, Studies, Update Specs for future engineer	various	multiple activities	1423	20	1-4Q	20	1-4Q			Cont.	Cont.	Cont.
Continue development of engineer and acquisition documents	various	multiple activities	1622	20	1-4Q	20	1-4Q			Cont.	Cont.	Cont.
Design armor kits for Construction Equipment	various	multiple activities	3372	1592	1-2Q					Cont.	Cont.	Cont.
Conduct feasibility studies to armor Construction Equipment Systems	various	multiple activities	200							Cont.	Cont.	Cont.
Development of Robotic Research for Construction Equipment	TBD	TBD				1319	1-4Q	260			1579	
Armor Development for HMEE I Light & Heavy Loaders and HYEX	TBD	TBD	8352	1233	2-4Q						9585	
Development of Simulator	MIPR	PEO Stricom, Orlando, FL				1500	1-4Q	1250	1-4Q		2750	
Survivability Enhancements and Armor for Construction Equipment	MIPR	Multiple Activities						850	1-4Q		1700	
Forced Entry Airborne(Air Assault) HMEE Type II Development	MIPR	Multiple Activities						4774	1-4Q		4774	
Subtotal:			19416	2865		2859		7134		Cont.	Cont.	Cont.
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Matrix Support	MIPR	TACOM & TARDEC,	10580					913	1-2Q	Cont.	Cont.	Cont.

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE								PROJECT	
5 - System Development and Demonstration			0604804A - Logistics and Engineer Equipment - Eng Dev								H01	
		Warren, MI										
Engineering Operational Integrator Support	MIPR	DA/Pentagon, Washington, DC	156								156	156
Construction Equipment Lease Study	MIPR	TACOM & TARDEC, Warren, MI	200			250	1-4Q				450	400
Subtotal:			10936			250		913		Cont.	Cont.	Cont.
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
HMEE Type I (6 prototypes)	MIPR	ATEC, Aberdeen, MD	784								784	784
Armor Tests for IHMEE & DEUCE	MIPR	ATEC, Aberdeen, MD	484							Cont.	Cont.	Cont.
Future Engineer Equipment (various)	MIPR	ATEC, Aberdeen, MD	2882			150	1-4Q			Cont.	Cont.	Cont.
Subtotal:			4150			150				Cont.	Cont.	Cont.
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Program Mgt	In-house	PM CE/MHE, Warren, MI	762	94	1-2Q			449	1-2Q	Cont.	Cont.	Cont.
Subtotal:			762	94				449		Cont.	Cont.	Cont.
Project Total Cost:			35264	2959		3259		8496		Cont.	Cont.	Cont.

Schedule Profile (R4 Exhibit)

May 2009

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604804A - Logistics and Engineer Equipment - Eng Dev

PROJECT
H01

Event Name	FY 08				FY 09				FY 10				FY 11				FY 12				FY 13				FY 14				FY 15			
	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
Market Surveillance/Investigation of Future Engineer Equipment	█				█																											
T&E of Technologies for Engineer Equip (from components to major systems)	█				█																											
Design Armor Kits	█				█																											
SDD of Air & Ground Line of Communication (LOC) enabling technologies	█				█																											
T&E of Air & Ground LOC technologies (graders, scrapers, earthmover)	█				█																											
Develop Acquisition Documents	█				█																											
T&E of Armor Systems	█				█				█																							
(1) Market Surveillance/Investigation	▲																															
(2) Test and Evaluation of Future Engineer Equipment	▲																															
Design Armor Kits for various Construction Equipment systems	█				█																											
(3) Air & Ground Line Of Communication (LOC) SDD	▲																															
(4) Air & Ground LOC Test & Evaluation	▲																															

Schedule Profile (R4 Exhibit)

May 2009

BUDGET ACTIVITY		PE NUMBER AND TITLE																												PROJECT			
5 - System Development and Demonstration		0604804A - Logistics and Engineer Equipment - Eng Dev																												H01			
Event Name	FY 08				FY 09				FY 10				FY 11				FY 12				FY 13				FY 14				FY 15				
	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	
(5) Develop Acquisition Documents	5				6																												
(6) T&E Armor Systems																																	
Simulator Development for Construction Equipment									████████████████																								
HMEE Type II Development Phase I													████████████████████████████████████████																				
Survivability Enhancements for Construction Equipment													████████████████████████████████████████																				

Schedule Detail (R4a Exhibit)

May 2009

BUDGET ACTIVITY		PE NUMBER AND TITLE						PROJECT	
5 - System Development and Demonstration		0604804A - Logistics and Engineer Equipment - Eng Dev						H01	
<u>Schedule Detail</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	
Market Surveillance/Investigation of Future Engineer Equipment	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q					
T&E of Technologies for Engineer Equip (from components to major systems)	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q					
Design Armor Kits	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q					
SDD of Air & Ground Line of Communication (LOC) enabling technologies	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q					
T&E of Air & Ground LOC technologies (graders, scrapers, earthmover)	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q					
Develop Acquisition Documents	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q					
T&E of Armor Systems	1Q - 4Q	1Q - 4Q	1Q - 4Q						
Market Surveillance/Investigation	1Q - 4Q	1Q - 4Q	1Q - 4Q						
Test and Evaluation of Future Engineer Equipment	1Q - 4Q	1Q - 4Q	1Q - 4Q						
Design Armor Kits for various Construction Equipment systems	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q					
Air & Ground Line Of Communication (LOC) SDD	1Q - 4Q	1Q - 4Q	1Q - 4Q						
Air & Ground LOC Test & Evaluation	1Q - 4Q	1Q - 4Q	1Q - 4Q						
Develop Acquisition Documents	1Q - 4Q	1Q - 4Q	1Q - 4Q						
T&E Armor Systems	1Q - 4Q	1Q - 4Q							
Simulator Development for Construction Equipment		2Q - 4Q							
HMEE Type II Development Phase I			2Q - 4Q	1Q - 4Q					
Survivability Enhancements for Construction Equipment			2Q - 4Q	1Q - 4Q					

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration		PE NUMBER AND TITLE 0604804A - Logistics and Engineer Equipment - Eng Dev			PROJECT H02
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
H02 TACTICAL BRIDGING - ENGINEERING DEVELOPMENT	6530	12211	9784	Continuing	Continuing

A. Mission Description and Budget Item Justification: This project supports the engineering, system development and demonstration, and transition to procurement of Future Force Tactical Bridge Systems. Efforts supported include the integration and testing of forty-six meter capability for the Dry Support Bridge (DSB) as well as the development, integration and testing for float capabilities for the Dry Support Bridge (DSB). Other efforts includes are the development, integration and testing of the Bridge Erection Boat (BEB), testing of the Program of Record (POR) Line of Communication (LOC) bridge. Additionally, these funds support the refurbishment of Joint Assault Bridge (JAB) test assets following USMC operational testing and the development of an Armored Engineer Vehicle (AEV) driving simulator based on the Abrams tank Common Driver Trainer. This project also includes the development of a family of bridges (footbridge 4-8m, and 8-13m) self contained and independent bridges for Infantry Brigade Combat Team (IBCT) and Future Brigade Combat Team (FBCT), a remote controlled automatic launch for the REBS and integrate and test the REBS on a Stryker chassis, various bridging product improvements such as upgrade of AVLB, IRB, and DSB to higher Military Load Classifications, development and application of composite materials in bridging and testing these improvements at the Dynamic Structural Load Simulator Laboratory and start Multi-Functional Gap Crossing effort, and a "full closure" crossing assessment to increase the normal "wheeled" (W) Military Load Crossing (MLC) from the current MLC 96(W) to MLC 105(W).

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
FY08-FY10: Continues Development, integration, and test for the DSB 46 meter bridge.	2550	500	845
FY09-FY10: LOC Bridge POR Testing		2900	2000
FY09-FY10: JAB refurbishment of Test Assets.			2500
FY10: AEV (ABV/JAB) Simulator	2500		
FY10: ABV Tests.	300	350	
FY10: AVLB Upgrade Test (SANG):		300	
FY10: Refurbish BEB Test Assets			200
FY08-FY10: BEB Testing	406	6000	2000
FY09: Market investigations (BEB, Multifunctional Bridging, alternative material solution, IBCT Family of Bridges)			
FY09-FY10: Development, integration and testing of REBS Auto Launch-Retrieve with Common Bridge Transporter (CBT).		1819	500
FY10: REBS refurbish test assets.			500
FY09-FY10: IBCT/FBCT 4-8 m Platform Independent Gap Defeat Solution Broad Agency Announcement, Demostration and Government Test.			600
FY09-FY10: Multi-Functional Gap Crossing Effort: Feasibility Study & Investigation of a Bridge Launcher for current bridges.			

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604804A - Logistics and Engineer Equipment - Eng Dev	PROJECT H02
FY08-FY10: Bridging Product Improvements	47	100
FY10:PM Bridging Hangar at SANG Base-Dynamic Structural Load Simulation Laboratory.	727	
FY10: Develop new composite material for Bridging		539
FY08: Small Business Innovative Research/Small Business Technology Transfer Program.		342
Total	6530	12211

<u>B. Other Program Funding Summary</u>	FY 2008	FY 2009	FY 2010	To Compl	Total Cost
OPA3, MX0100, Tactical Bridge	50102	93930	64682	Continuing	Continuing
OPA3, MA8890, Tactical Bridging, Float Ribbon	74280	147270	149259	Continuing	Continuing

Comment:

C. Acquisition Strategy Limited RDT&E effort to support testing and follow-on production.

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
5 - System Development and Demonstration			0604804A - Logistics and Engineer Equipment - Eng Dev							H02		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
DSB 46 meter bridge	SS-CPFF/MIPR	WFEL, Stockport, England/ ATEC, APG/TARDEC, MI	1070	2550	3-4Q	500	1-3Q	845	1-2Q	Cont.	Cont.	1366
ABV Tests	MIPR	ATEC, APG		300	3Q	350	2-4Q				650	
AEV Simulator	MIPR	PEO-STRI, Orlando, FL		2500							2500	
AVLB Upgrade Test	MIPR					300	2-4Q				300	
JAB refurbishment of Test Assets	PWD	ANAD						2500	2-4Q		2500	
BEB Boat Development	C/REQ	TBD				4000	4Q				4000	
BEB Refurbish Test Assets	MIPR	ATEC, APG						200	2-4Q		200	
Market Investigation BEB, Multifunctional Bridging	MIPR										50	
IBCT/FBCT 4-8 m Gap Defeat		KMWMMB, Mainz Germany/Qinetiq, Hampshire, UK/UCSD, San Diego, CA						600	1-4Q		600	
REBS Auto Launch-Retrieve		GDELS, Germany, DE				1819	2-4Q	500	2Q		2319	
REBS refurbish test assets								500	2Q		500	
LOC refurbishment of test assets		Contractor Facility TBD									1000	
Multifunctional Gap Crossing											2000	
Bridging Product Improvements								100	1Q		600	
PM Bridging Hangar Improvements at SANG Base	MIPR	SANG, MI		727	4Q						727	
Develop New composite material for Bridging	MIPR							539	2Q		539	
Subtotal:			1070	6077		6969		5784		Cont.	Cont.	1366

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE								PROJECT		
5 - System Development and Demonstration			0604804A - Logistics and Engineer Equipment - Eng Dev								H02		
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract	
Other Government Agencies	MIPR	TACOM, Warren, MI--Various	140								140		
Subtotal:			140								140		
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract	
LOC Testing	MIPR	ATEC, APG/ FT. Leonardwood				2900	4Q	2000	1-4Q		4900		
BEB Testing	MIPR	TBD		406	4Q	2000	3-4Q	2000	3-4Q		4406		
Subtotal:				406		4900		4000			9306		
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract	
Program Management Support	N/A	TACOM, Warren, MI	808	47							855		
Small Business Innovative Research/Small Business Technology Transfer Program	N/A	TACOM, Warren, MI				342					342		
Subtotal:			808	47		342					1197		
Project Total Cost:			2018	6530		12211		9784		Cont.	Cont.	1366	

Schedule Detail (R4a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604804A - Logistics and Engineer Equipment - Eng Dev	PROJECT H02
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<u>Schedule Detail</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>
Dev, Integ, & Test DSB 46 Meter Bridge	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q				
BEB Testing		4Q	1Q - 4Q	1Q - 4Q				
Dev, Integr, & Test REBS Auto Launch-Retrieve		2Q - 4Q	1Q - 4Q					
Refurbish REBs Test Assets			2Q - 4Q					
Develop Modular Comps and Lightweight Mat for Bridging Applications			2Q - 4Q	1Q - 4Q				
LOC POR testing		4Q	1Q - 4Q					
LOC Refurbishment of Test Assets				1Q - 4Q				
Test BEB SLEP	1Q - 4Q	1Q - 3Q						
Develop Modular Comps and Lightweight Material for Bridging Applications		1Q - 4Q	1Q - 4Q					
JAB Refurbishment of Test Assets.			1Q - 4Q					
Develop IBCT/FBCT Demonstrators			1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q		
Test IBCT/FBCT Demonstrators			1Q - 4Q	1Q - 4Q				
Multifunctional Gap Crossing Effort: Feasibility Study & Investigation		2Q - 4Q	1Q - 4Q					
AEV Simulator			2Q - 4Q					
ABV Tests		3Q - 4Q						
Dynamic Structural Load Simulation Laboratory-SANG Base			1Q - 3Q					

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration		PE NUMBER AND TITLE 0604804A - Logistics and Engineer Equipment - Eng Dev			PROJECT H14
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
H14 MATERIALS HANDLING EQUIPMENT - ED	134	452	501		1087

A. Mission Description and Budget Item Justification: This project supports system development and demonstration of Material Handling Equipment (MHE) that support Combat Service Support units with MHE for world wide rapid movement of supplies including container handling equipment, forklifts, and other cargo handling related items. Necessary efforts include validating requirements, developing acquisition strategies, developing performance specifications and test and evaluation planning.

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
Programmatic Pre-Milestone C support of 5,000 LB Light Capacity Rough Terrain Forklift	56		
Rough Terrain Container Handler Crew Protection Kit Development.	78	100	
Rough Terrain Container Handler Crew Protection Kit Testing at Aberdeen Proving Grounds		190	251
Engineering for Modification Work Orders required (based off testing)		150	250
SBIR/STTR		12	
Total	134	452	501

<u>B. Other Program Funding Summary</u>	FY 2008	FY 2009	FY 2010	To Compl	Total Cost
RDTE, 0603804.DG14, Logistics Support Equipment, Advance	259	210		Continuing	Continuing
OPA3, M41200, Rough Terrain Container Handler (RTCH)	143432	115067	95599	Continuing	Continuing
OPA3, M41800, All Terrain Lifting Army System (ATLAS)	72618	54837	94217	Continuing	Continuing

Comment:

C. Acquisition Strategy RDT&E Engineering - Engineering efforts will be conducted: Programmatic Pre-Milestone C support of 5,000 LB Light Capacity Rough Terrain Forklift; Rough Terrain Container Handler Crew Protection Kit Development; Rough Terrain Container Handler Crew Protection Kit Testing and Engineering Support at Aberdeen Proving Grounds; Engineering for Modification Work Orders required (based off testing).

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY

5 - System Development and Demonstration

PE NUMBER AND TITLE

0604804A - Logistics and Engineer Equipment - Eng Dev

PROJECT

H14

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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604804A - Logistics and Engineer Equipment - Eng Dev			PROJECT L39	
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
L39 Field Sustainment Support ED	7335	2084	4527	Continuing	Continuing

A. Mission Description and Budget Item Justification: This project supports the System Development and Demonstration (SDD) of critical distribution and sustainment capabilities to include cargo aerial delivery, field shelters, showers, latrines, heaters, mortuary affairs systems, organizational equipment, and other combat service support equipment to fill identified theater distribution and services capability gaps, improve unit sustainability, and increase combat effectiveness. Project supports the demonstration of engineering development models and Type Classification of cargo parachutes, airdrop containers and other aerial delivery equipment to improve safety, effectiveness, and efficiency of airborne operations. Project supports development of tactical field systems and support equipment. This project develops critical enablers that support the Quartermaster (QM) Force Transformation Strategy and the Army's Modular Force Capabilities by maintaining readiness through fielding and integrating new equipment. This project also ensures Army Expeditionary Forces are capable of rapid deployment by providing aerial delivery initiatives. These reduce sustainment requirements, related Combat Support/Combat Service Support (CS/CSS), lift demands, the combat zone footprint, and costs for logistical support.

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
FY 08: Completed documentation package and obtained Milestone C approval for Mobile Integrated Remains Collection System (MIRCS) to transition into production. Developed training devices to facilitate institutional training on key components.	238		
FY 08: Started and completed Joint Precision Airdrop System (JPADS) 2K developmental Testing (DT) and Operational Testing (OT). FY09: Obtain JPADS 2K Milestone C and Full Material release and transition into production.	7097	2025	
FY 10: Initiate JPADS 10K OT. FY 11: Complete JPADS 10K OT and obtain Milestone C.			4379
FY 10: Execute Low Cost Aerial Delivery System (LCADS) P3I efforts with a focus on reuse.			148
Small Business Innovative Research/Small Business Technology Transfer Program		59	
Total	7335	2084	4527

<u>B. Other Program Funding Summary</u>	FY 2008	FY 2009	FY 2010	To Compl	Total Cost
OPA 3, M77700 Mobile Integrated Remains Collection System	9874	17803	18335	Continuing	Continuing
OPA 3, MA7806 Precision Airdrop	199	26700	19700	Continuing	Continuing

Comment:

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY

5 - System Development and Demonstration

PE NUMBER AND TITLE

0604804A - Logistics and Engineer Equipment - Eng Dev

PROJECT

L39

C. Acquisition Strategy Accelerate product development and testing to transition into production.

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
5 - System Development and Demonstration			0604804A - Logistics and Engineer Equipment - Eng Dev							L39		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Soldier Support Equipment	In-House	PM FSS, Natick	2809	1901	1-4Q					Cont.	Cont.	3241
Soldier Support Equipment	Contracts	Various	13075	5003	1-4Q					Cont.	Cont.	
JPADS 10K Development	Contracts/In-House	Various				1062	1-4Q	240	1-4Q	Cont.	Cont.	
LCADS P3I efforts	Contracts/In-House	Various						148	1-4Q	Cont.	Cont.	
Develop Next Generation Transfer Case	Contracts/In-House	Various								Cont.	Cont.	
Subtotal:			15884	6904		1062		388		Cont.	Cont.	3241
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:												
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Soldier Support Equipment	MIPR	DTC, MD and ATC, MD	1686							Cont.	Cont.	130
Soldier Support Equipment	MIPR	Yuma Proving Ground (YPG), AZ, AEC	6284			900	1-4Q			Cont.	Cont.	76
JPADS 10K DT	MIPR	YPG, AZ						2000	2-4Q	Cont.	Cont.	
JPADS 10K OT	MIPR	YPG, AZ/ OTC,NC						2000	4Q	Cont.	Cont.	
Subtotal:			7970			900		4000		Cont.	Cont.	206

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604804A - Logistics and Engineer Equipment - Eng Dev	PROJECT L39
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IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Project Management Support		PM FSS, Natick	982	431	1-4Q	63	1-4Q	139	1-4Q	Cont.	Cont.	
SBIR/STTR						59	3Q				59	
Subtotal:			982	431		122		139		Cont.	Cont.	
Project Total Cost:			24836	7335		2084		4527		Cont.	Cont.	3447

Schedule Profile (R4 Exhibit)

May 2009

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604804A - Logistics and Engineer Equipment - Eng Dev

PROJECT
L39

Event Name	FY 08				FY 09				FY 10				FY 11				FY 12				FY 13				FY 14				FY 15							
	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) Milestone C MIRCS	▲ 1																																			
(2) Milestone C JPADS 2K									▲ 2																											
(3) Milestone C JPADS 10K/LRIP													▲ 3																							
DT/OT on JPADS 2K																																				
OT on JPADS 10 K																																				
OT on ACPRS																																				
(4) Milestone C on ACPRS																					▲ 4															
(5) Milestone C on Helicopter External/Internal Cargo Delivery																									▲ 5											
(6) Complete ALVADS-L Milestone C																									▲ 6											
Conduct DT/OT on ALVADS-L																																				
Conduct DV on JPADS 2K																																				
(7) Conduct Milestone C for JMIDS Joint Modular Intermodal Container System (JMICS)																					▲ 7															
(8) Conduct Milestone C on Next Generation Human Remains Transfer Case																					▲ 8															
Conduct DT and OT on ALVADS Rapid Rigging/Derigging Airdrop System																																				

0604804A (L39)
 Field Sustainment Support ED

Schedule Detail (R4a Exhibit)

May 2009

BUDGET ACTIVITY		PE NUMBER AND TITLE						PROJECT	
5 - System Development and Demonstration		0604804A - Logistics and Engineer Equipment - Eng Dev						L39	
<u>Schedule Detail</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	
Milestone C MIRCS	2Q								
Milestone C JPADS 2K		3Q							
Milestone C JPADS 10K/LRIP				3Q					
DT/OT on JPADS 2K	2Q - 4Q								
OT on JPADS 10 K			4Q	1Q					
OT on ACPRS				2Q - 4Q					
Milestone C on ACPRS					3Q				
Milestone C on Helicopter External/Internal Cargo Delivery							4Q		
Complete ALVADS-L Milestone C						4Q			
Conduct DT/OT on ALVADS-L					1Q - 4Q	1Q - 2Q			
Conduct DV on JPADS 2K	1Q - 2Q								
Conduct Milestone C for JMIDS Joint Modular Intermodal Container System (JMICS)					2Q				
Conduct Milestone C on Next Generation Human Remains Transfer Case					2Q				
Conduct DT and OT on ALVADS Rapid Rigging/Derigging Airdrop System						1Q - 4Q	1Q - 2Q		
Conduct Milestone C on ALVADS Rapid Rigging/Derigging Airdrop System							4Q		
Conduct Milestone C on Mobile Integrated Shop Shelter System								1Q	
Conduct Milestone C on JMIDS Intermodal Platform Capability (IPC)			1Q - 4Q	1Q - 4Q					
Execute LCADS P3I efforts			1Q - 4Q	1Q - 4Q					
JPADS 10K FMR/FRP				4Q					

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration		PE NUMBER AND TITLE 0604804A - Logistics and Engineer Equipment - Eng Dev			PROJECT L41
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
L41 WATER AND PETROLEUM DISTRIBUTION - ED	5167	5839	2503	Continuing	Continuing

A. Mission Description and Budget Item Justification: Description: This project provides all services ample supply of clean fuel and water. The Army has the mission to supply fuel for all land-based forces, including the Marines and the Air Force, and must supply bulk drinking water to the soldiers. This System Development and Demonstration (SDD) program enables the Army to improve maneuver sustainment operations to meet the demands of the Stryker Brigade Combat Teams and Future Force. The mission includes receiving and transferring petroleum from trucks, ships, pipelines and permanent and temporary storage facilities; moving petroleum from storage to and within corps and division areas; fuel quality surveillance testing; and, dispensing in support of tactical operations, including rapid refueling of aircraft. The mission covers purification, storage, distribution, and quality control of water. The Army cannot fight without clean fuel and water. These research and development (R&D) missions support the development and enhancement of rapidly deployed Petroleum and Water equipment which enables the Army to achieve transformation vision by providing a highly mobile and self-sustaining system in hostile theaters of operation.

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
FY08-10: Develop prototype Advanced Petroleum Test Kit (PTK) and conduct developmental testing and limited user testing. Prepare technical data package for production.	1451	1200	465
FY08-09: Continue improvements for the Family of Fuel System Supply Points (FSSPs). Conduct system level demonstrations and evaluations of the common 600 Gallon Per Minute (GPM) Fuel/Water tactical pump and prepare technical data package and logistic support data.	1500	2449	
FY08-FY10: Integrate product improvements and conduct system level testing and evaluation of improved Tactical Water Purification System (TWPS) and Lightweight Water Purification System (LWP) and Reverse Osmosis Water Purification Units, Hippo system and the Unit Water Pod (Camel) System. Based on component testing results, perform engineering integration analysis and system design to incorporate in-line water quality monitoring, LP, opus and perform technical and operational testing. Perform engineering integration analysis and system design to incorporate chlorine dosing and control into the Hippo system and Unit Water Pod System (Camel) system and conduct technical and operational testing. Prepare technical data to incorporate improved components into production units and to support system modernization through spares.	716	2028	320
FY10: Integration of component level improvements at the system level for the Fuel System Supply Point (FSSP). Reliability and limited user testing. Preparation of component level performance based specifications.			1218
FY08: Complete Production Verification Testing on the 900 Gallon Unit Water Pod (Camel), document and verify logistical data, prepare program management documentation for type classification standard and materiel release, and conduct Milestone C. Complete system-level logistics demonstration and operational testing.	1500		
FY10: Introduction of new technologies to enhance the Petroleum Quality Analysis System (PQAS). Market surveys, component testing and user testing.			500

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604804A - Logistics and Engineer Equipment - Eng Dev	PROJECT L41
FY10: Small Business Innovative Research/Small Business Technology Transfer Program (SBIR/STTR).		162
Total		5167 5839 2503

<u>B. Other Program Funding Summary</u>	FY 2008	FY 2009	FY 2010	To Compl	Total Cost
RDTE, 0603804/K41, Logistics and Engineer Equipment - Advanced Development	2442	439	3277	Continuing	Continuing
OPA 3, R05600, Water Purification Systems	43719	51164	8272	Continuing	Continuing
OPA 3, MA6000, Distribution Systems, Petroleum & Water	34173	61545	92877	Continuing	Continuing
OPA 3, MB6400, Quality Surveillance Equipment	1284	1285		Continuing	Continuing

Comment:

C. Acquisition Strategy Not applicable for this item.

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
5 - System Development and Demonstration			0604804A - Logistics and Engineer Equipment - Eng Dev							L41		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Advanced Petroleum Test Kit (PTK)	C-CPPF	TBD		700	2Q	900	1Q			Cont.	Cont.	Cont.
Advanced Petroleum Test Kit (PTK)	MIPR	TARDEC, Warren, MI		200	1Q	200	1Q	200	1Q	Cont.	Cont.	Cont.
Fuel System Supply Point (FSSP) Improvements	In-House	TARDEC, Warren, MI		50	1Q	200	2Q	300	1Q	Cont.	Cont.	Cont.
FSSP Improvements	C-CPPF	MTC, Dayton, OH		600	1Q	900	2Q			Cont.	Cont.	Cont.
Water Purification Systems Improvements	MIPR	TARDEC, Warren, MI		100	1Q	150	1Q	100	1Q	Cont.	Cont.	Cont.
Water Purification Systems Improvements	MIPR	NFESC, Port Hueneme, CA		116	1Q					Cont.	Cont.	Cont.
Water Purification Systems Improvements	Purchase Order	TBD						120	1Q	Cont.	Cont.	Cont.
Unit Water Pod (Camel) 900 Gallon	MIPR	TARDEC, Warren, MI	150	100	1Q					Cont.	Cont.	Cont.
Water Packaging System	MIPR	TARDEC, Warren, MI								Cont.	Cont.	Cont.
Water Packaging System	C-CPPF	DRS				1309	3Q			Cont.	Cont.	Cont.
Petroleum Quality Analysis System (PQAS-E)	MIPR	TARDEC, Warren, MI						200	1Q	Cont.	Cont.	Cont.
Subtotal:			150	1866		3659		920		Cont.	Cont.	Cont.
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Advanced Petroleum Test Kit (PTK)	In-House	TARDEC, Warren, MI		50	1Q	50	1Q			Cont.	Cont.	Cont.
Fuel System Supply Point (FSSP)	In-House	TARDEC, Warren, MI		25	1Q	100	1Q			Cont.	Cont.	Cont.
Fuel System Supply Point (FSSP)	In-House	TARDEC, Warren, MI						100	1Q	Cont.	Cont.	Cont.
Water Purification Systems Improvements	In-House	TARDEC, Warren, MI		50	1Q	100	1Q			Cont.	Cont.	Cont.

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
5 - System Development and Demonstration			0604804A - Logistics and Engineer Equipment - Eng Dev							L41		
Unit Water Pod (Camel) 900 Gallon	In-House	TARDEC, Warren, MI	100	75	1Q					Cont.	Cont.	Cont.
Unit Water Pod (Camel) 900 Gallon	C-CPFF	TBD	1394	125	1Q					Cont.	Cont.	Cont.
Water Packaging System	In-House	TARDEC, Warren, MI								Cont.	Cont.	Cont.
Subtotal:			1494	325		250		100		Cont.	Cont.	Cont.
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Advanced Petroleum Test Kit (PTK)	In-House	TARDEC, Warren, MI		50	1Q	50	1Q	265	1Q	Cont.	Cont.	Cont.
Fuel System Supply Point (FSSP)	MIPR	TARDEC, Warren, MI		275	1Q	382	1Q	743	1Q	Cont.	Cont.	Cont.
Fuel System Supply Point (FSSP)	MIPR	Yuma Proving Ground, Yuma, AZ		450	1Q	746	2Q			Cont.	Cont.	Cont.
Water Purification Improvements	MIPR	NFESC, Port Hueneme, CA	332	400	1Q	250	1Q			Cont.	Cont.	Cont.
Water Purification Improvements	In-House	TARDEC, Warren, MI		50	1Q	340	1Q	175	1Q	Cont.	Cont.	Cont.
Water Purification Improvements	MIPR	Aberdeen Proving Ground, Aberdeen, MD								Cont.	Cont.	Cont.
Unit Water Pod (Camel) 900 Gallon	MIPR	Yuma Proving Ground, Yuma, AZ	1996	1751	1Q					Cont.	Cont.	Cont.
Petroleum Quality Analysis System (PQAS-E)	MIPR	TBD						300	1Q	Cont.	Cont.	Cont.
Subtotal:			2328	2976		1768		1483		Cont.	Cont.	Cont.
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
SBIR/STTR						162	3Q				162	
Subtotal:						162					162	

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604804A - Logistics and Engineer Equipment - Eng Dev						PROJECT L41			
Remarks: not applicable										
Project Total Cost:	3972	5167		5839		2503		Cont.	Cont.	Cont.

Schedule Profile (R4 Exhibit)

May 2009

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604804A - Logistics and Engineer Equipment - Eng Dev

PROJECT
L41

Event Name	FY 08				FY 09				FY 10				FY 11				FY 12				FY 13				FY 14				FY 15			
	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
Advanced Petroleum Test Kit (PTK): Design prototype and conduct technical tests					Develop, Design, Fabricate, Test - PTK																											
Family of Fuel System Supply Points (FSSPs): Performance of common pumps					Performance of common pumps-FSSPs																											
Evaluate Improvements to Water Purification and Distribution Systems					Water Purif Systems and Distribution Systems																											
Unit Water Pod (Camel): Technical and User Testing, Support Data, Log Demo					Testing, Support Data, Log Demo - Camel																											

Schedule Detail (R4a Exhibit)

May 2009

BUDGET ACTIVITY		PE NUMBER AND TITLE						PROJECT	
5 - System Development and Demonstration		0604804A - Logistics and Engineer Equipment - Eng Dev						L41	
<u>Schedule Detail</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	
Advanced Petroleum Test Kit (PTK): Design prototype and conduct technical tests	1Q - 4Q	1Q - 4Q							
Family of Fuel System Supply Points (FSSPs): Performance of common pumps	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q			
Evaluate Improvements to Water Purification and Distribution Systems	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	
Unit Water Pod (Camel): Technical and User Testing, Support Data, Log Demo	1Q - 4Q	1Q - 4Q							

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604804A - Logistics and Engineer Equipment - Eng Dev			PROJECT L42	
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
L42 CAMOUFLAGE SYSTEM ED	240	247			487

A. Mission Description and Budget Item Justification: This project provides for System Development and Demonstration of low cost, low observable camouflage systems to counter emerging enemy threat technologies such as Thermal Sensors, Near Infrared (Night Vision) sensors, Short Wave Infrared Sensors by suppression of visual, near-infrared, thermal radar, and acoustic signatures of highly critical mobile and semi-mobile weapon systems and strategic equipment. Efforts include development of Arctic/Snow variants, as well as system unique Ultra Lightweight Camouflage Net System (ULCANS) for the Future Combat Systems. This project also includes development of a threat database that includes spectral, visual and topographic data for primary threat areas supporting mission unique and Special Operations camouflage requirements.

This program develops a critical capability that supports the Army's Modular Force by providing signature suppression and counter-surveillance superiority that reduces vulnerability. In addition, this program is clearly focused on dramatically reducing the logistics footprint by providing substantial reductions in weight and cube, while providing superior camouflage protection to the warfighter. Further, more efficient and easier to employ systems will provide vast improvements in mobility, supporting the Army's Modular Concept.

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
FY 08: Developed prototype technology enhancements for Woodland ULCANS variants to counter emerging enemy detection technologies, incorporating digital design using hyperspectral sensors to obtain spectral optimization. Initiated development of threat database and coating pigment database for joint interest special application efforts. Initiated testing of hardware samples. FY 09: Complete multispectral and hyperspectral testing on Desert ULCANS and prototype materials. Complete development of modification kits for STRYKER topside ULCANS nets.	240	247	
Total	240	247	

<u>B. Other Program Funding Summary</u>	FY 2008	FY 2009	FY 2010	To Compl	Total Cost
RDTE, 0622712.AH35, Camouflage Technology	2734	2845	2861	Continuing	Continuing

Comment:

C. Acquisition Strategy Develop camouflage systems for Services and transition developmental items into procurement with a competitive award. Continual upgrade to counter technology improvements of sensors, and to counter new emerging technologies. Continual leveraging of technology with other special operations programs.

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
5 - System Development and Demonstration			0604804A - Logistics and Engineer Equipment - Eng Dev							L42		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Camouflage Equipment testing and technology insertion	MIPR	CECOM, FT Belvoir	551	240	1-4Q	247	1-4Q				1038	
ULCANS Technology Insertion	CPFF	CECOM, FT Monmouth	701							Cont.	701	
Subtotal:			1252	240		247				Cont.	1739	
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:												
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
ULCANS, Arctic/Snow	MIPR	TECOM, WSMR	524								524	
Subtotal:			524								524	
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Engineering Support	MIPR	CECOM, FT Belvoir	720							Cont.	720	
Program Support	Contract	Radian, INC	320							Cont.	320	
Subtotal:			1040							Cont.	1040	

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - System Development and Demonstration

0604804A - Logistics and Engineer Equipment - Eng Dev

L42

Project Total Cost:

2816

240

247

Cont.

3303

Schedule Profile (R4 Exhibit)

May 2009

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604804A - Logistics and Engineer Equipment - Eng Dev

PROJECT
L42

Event Name	FY 08				FY 09				FY 10				FY 11				FY 12				FY 13				FY 14				FY 15							
	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) Technology Enhancement to Woodland ULCANS	▲				▲																															
Develop STRYKER mod kits													■																							
Conduct testing on Desert ULCANS													■																							
Technology enhancement to Desert ULCANS													■																							

Schedule Detail (R4a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration		PE NUMBER AND TITLE 0604804A - Logistics and Engineer Equipment - Eng Dev					PROJECT L42		
<u>Schedule Detail</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	
Technology Enhancement to Woodland ULCANS	1Q - 4Q								
Develop STRYKER mod kits		1Q - 2Q							
Conduct testing on Desert ULCANS		1Q - 2Q							
Technology enhancement to Desert ULCANS		1Q - 4Q							

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604804A - Logistics and Engineer Equipment - Eng Dev			PROJECT L43	
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
L43 ENGINEER SUPPORT EQUIPMENT - ED	495	513	978	Continuing	Continuing

A. Mission Description and Budget Item Justification: This project supports development, demonstration, testing and evaluation within the Engineering Support Equipment arena for the Hydraulic Electric Pneumatic Petroleum Operated Equipment (HEPPOE), Surveying, Individual Firefighter Support, Concrete and Masonry, Electrician, Plumbers, Pipefitters, Field Lighting Sets, Diving Equipment, Surface Swimmer Support Sets, Surface Supplied Diving Set, Procurement of new Technical Tools, Pioneer Support Set, and the Pioneer Land Clearing and Building Set. Funding will support the procurement of market samples and testing for Hazard ID & Marking, Pioneer Light Field Engineering, and Allied Trades. Efforts will also involve modernization of the Swimmer Support Sets and Individual Swimmer Support Sets as well as existing Sets, Kits, and Outfits (SKOs).

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
Procure test and evaluate market samples of the Pioneer Support Set and Pioneer Land Clearing and Building Set.	31		
Development of the Hydraulic Electric Pneumatic Petroleum Operated Equipment (HEPPOE).	100	80	
Sets, Kits, and Outfits (SKOs) optimization efforts for Expedited Modernization Initiative Program (EMIP)/ Board of Directors (BOD) and individual tool procurement for modernizing SKOs.	12	12	
Allied Trade Organization (ORG) & General Purpose (GP) Market Investigation, Engineering Effort and Develop Performance Specifications for ORG/GP Set to procure prototypes in FY08 and conduct test and evaluation in FY09.	182	55	
Modernize the Surface Swimmer Support Set and Individual Swimmer Support Set.	100		
Update Engineering type SKOs to support Future Combat Systems/Conduct on site reviews.	70		
Procure Market Samples for Test and Evaluation of Surveying, Individual Firefighter Support, Concrete & Masonry, Electrician, Plumbers, Pipefitters, and Field Lighting Sets.		170	
Description For Purchase (DFP) development for Surface Supplied Diving Set, and procurement of test articles for the Surface Supplied Diving Set and the Deep Sea Set, based on latest technology (Life Support Equipment)		183	278
Procure test articles and field test Closed Circuit Scuba Set for suitability.			250
Procurement of test articles based on Capabilities Production Document (CPD) requirements for the family of diving air compressors			250
Redevelopment of state of the art Deep Sea Set based on the latest technology (Life Support Equipment)			200
SBIR / STTR		13	
Total	495	513	978

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604804A - Logistics and Engineer Equipment - Eng Dev	PROJECT L43
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<u>B. Other Program Funding Summary</u>	FY 2008	FY 2009	FY 2010	To Compl	Total Cost
OPA 3 ML5301, Items Less than \$5.0M (Engineering Support)	23325	38435	30518	Continuing	Continuing

Comment:

C. Acquisition Strategy Progression of Programs will be developed by the completion of the Initial Capabilities Document, Capabilities Development Document, Capability Production Document, and Description For Purchase continuing into Low Rate Initial Production. Modernization and Optimization of existing tools and testing of market samples will progress from System Development and Demonstration (SDD) and transition into production.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604804A - Logistics and Engineer Equipment - Eng Dev			PROJECT L46	
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
L46 Maintenance Support Equipment	1406	1507	3266	Continuing	Continuing

A. Mission Description and Budget Item Justification: This project supports requirements generation for Sets, Kits, and Outfits (SKOs) and the subsequent creation of technical data as well as purchase descriptions. Modernize the Shop Equipment, Contact Maintenance (SECM) for the next generation armored vehicle to lower weight of enclosure to accommodate required tool load. Continue efforts on rapid deploying SKOs to support rapid emerging missions including joint efforts. Acquire and test support equipment items. Conduct research, procure and test various towbar configurations. Efforts to include development of Allied Trade as well as Armament SKOs that support the merging of Military Occupational Specialties (MOS). Research, develop, and test fire suppression systems and investigate feasibility of Joint Modular Container Systems for SKO.

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
Optimization of antiquated SKOs to support modularity in a 2 level maintenance environment including Towbar redesign.			100
Modernize and update tool loads - Procure and verify additional items based on field feedback. Create Purchase Descriptions and purchase Support Equipment test articles.	200		334
Unique Identification Codes and Warranty/Replacement system enhancements/testing. Joint Modular Intermodal Container System/Joint Modular Intermodal Distribution System (JMICS/JMIDS) Containers.	80		625
Future Combat Systems	220		70
Fund efforts to create documentation for Industrial Plant Equipment (IPE) and air compressors to allow creation of Purchase Descriptions and procurement of test articles.	360		
Design, Develop, Build, and Test Allied Trade configurations.	151		922
Composite Manipulation. Joint container utilization research. Virtual Engineering incorporation and enhancements.	183		63
Machinist Tool Sets Shelter and Non-Shelter	100	70	
Perform testing on Flatrack design for the Forward Repair System (FRS). FY09 Modernize/Update Tool Load (verify additional items based on Field Feedback).	100	50	
Procure new technical tools and subsequent evaluations of tools for SKO optimization.	12	12	12
Modernization / Redesign efforts of SECM for next generation of vehicles.		392	400
Support for requirements generation.		311	340
Create Purchase Descriptions and procure IPE and Air Compressors.		334	

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604804A - Logistics and Engineer Equipment - Eng Dev	PROJECT L46
Develop Rapid Deployment Sets, Kits, and Outfits (SKO) - Special Tool Initiative.		154
Engineer and Quality Assurance in support of Sets, Kits, Outfits, and Tools.		141
Fire Suppression Systems		300
Armament Shop Upgrades		
Small Business Innovative Research/Small Business Technology Transfer Programs (SBIR/STTR)		43
Total	1406	1507

<u>B. Other Program Funding Summary</u>	FY 2008	FY 2009	FY 2010	To Compl	Total Cost
OPA 1, DL5110, Items Less Than \$5.0M (TACTICAL VEHICLE)	8000	2902	298	Continuing	Continuing
OPA 3, G05302, Forward Repair System	113794	127311	62884	Continuing	Continuing
OPA 3, M61500, Shop Equipment, Contact Maintenance	96791	17754	49651	Continuing	Continuing
OPA 3, MA9650, Standard Automotive Tool Set	189998	34211	35344	Continuing	Continuing
OPA 3, ML5345, Items Less Than \$5.0M (MAINTENANCE EQUIPMENT)	1386	1325	1358	Continuing	Continuing

Comment:

C. Acquisition Strategy Programs will progress from requirements generation through market research, development, market samples and testing. Efforts will support two level maintenance concept utilizing commercial technologies and incorporating them into SKO to support next generation weapon and support systems.

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
5 - System Development and Demonstration			0604804A - Logistics and Engineer Equipment - Eng Dev							L46		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Maintenance Support Equipment Life Cycle Configuration Analyses and ICD Development Support	In-House	PM SKOT Rock Island	865					674	1-3Q	Cont.	Cont.	Cont.
Further develop SATS Field Maintenance Module & viability of adding Load Handling System capability	In-House	PM SKOT Rock Island	183							Cont.	Cont.	Cont.
Modernization of Industrial Plant Equipment (IPE)	MIPR / In-House	TBD / PM SKOT Rock Island				291	1-3Q			Cont.	Cont.	Cont.
Expedited Modernization Initiative Procedure (EMIP) Procurement of new Technical Tools	In-House	PM SKOT Rock Island		12	1-3Q	12	1-3Q	12	1-3Q	Cont.	Cont.	Cont.
Machinist Tool Sets, Shelter / Non-Shelter	In-House	PM SKOT Rock Island		100	1-3Q	70	1-3Q			Cont.	Cont.	Cont.
Allied Trades Test Article Configurations	In-House	PM SKOT Rock Island		151	1-3Q			872	1-3Q	Cont.	Cont.	Cont.
Modernization / Redesign efforts of Shop Equipment, Contact Maintenance for next generation vehicles	In-House	PM SKOT Rock Island				392	1-3Q			Cont.	Cont.	Cont.
Develop Rapid Deployment Sets, Kits, & Outfits - Special Tool Initiative. Joint Aviation Tool Set	In-House	PM SKOT Rock Island				154	1-3Q	100	1-3Q	Cont.	Cont.	Cont.
Subtotal:			1048	263		919		1658		Cont.	Cont.	Cont.
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Life Cycle Configuration Analyses	In-House	PM SKOT Rock Island	152							Cont.	Cont.	Cont.

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
5 - System Development and Demonstration			0604804A - Logistics and Engineer Equipment - Eng Dev							L46		
& Support to Initial Capabilities Development Document												
Future Combat Systems	In-House	PM SKOT Rock Island		220	1-3Q					Cont.	Cont.	Cont.
Modernization of Tool Loads based on Field Feedback	In-House	PM SKOT Rock Island		200	1-3Q			300	1-3Q	Cont.	Cont.	Cont.
Industrial Plant Equipment Documentation for new test articles	MIPR / In-House	TBD / PM SKOT Rock Island		360	1-3Q	311	1-3Q			Cont.	Cont.	Cont.
Engineer and Quality Assurance in support of Sets, Kits, Outfits, and Tools.	MIPR / In - House	ECBC / ARDEC / PM SKOT Rock Island				141	1-2Q	63	1-2Q	Cont.	Cont.	Cont.
Subtotal:			152	780		452		363		Cont.	Cont.	Cont.
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Life Cycle Configuration Analyses & Support to Initial Capabilities Development Document	MIPR/ In-House	Army Test & Evaluation Command (ATEC)/PM SKOT Rock Island/CASCOM Ordnance Center & School, Ft. Lee	830							Cont.	Cont.	Cont.
Further develop SATS Field Maintenance Module & viability of adding Load Handling System capability		PM SKOT Rock Island	263							Cont.	Cont.	Cont.
Forward Repair System Flatrack Redesign. FY09 Modernize/Update Tool Load.	In-House	PM SKOT Rock Island		100	1-3Q	93	1-3Q			Cont.	Cont.	Cont.
Testing of Support Equipment Items and Configurations	MIPR/ In-House	Army Test & Evaluation Command (ATEC)/ PM SKOT/ECBC						400	1-3Q		1473	
Testing of Fire Suppression	MIPR/ In-House	Army Test & Evaluation Command (ATEC)/PM						300	1-3Q		300	

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration			PE NUMBER AND TITLE 0604804A - Logistics and Engineer Equipment - Eng Dev							PROJECT L46		
		SKOT/ECBC										
Subtotal:			1093	100		93		700		Cont.	Cont.	Cont.

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Conduct Sets, Kits, & Outfits (SKO) Modernization Efforts	MIPR/ In-House	Army Test & Evaluation Command & PM SKOT Rock Island	688					70	1-3Q	Cont.	Cont.	Cont.
Composite Manipulation	In-House	PM SKOT Rock Island		183	1-3Q					Cont.	Cont.	Cont.
Unique Identification Codes, Joint Modular Intermodal Container/Distribution System (JMICS/JMIDS)	In-House	PM SKOT Rock Island		80	1-3Q			475	1-3Q	Cont.	Cont.	Cont.
SBIR/STTR						43	3Q				43	
Subtotal:			688	263		43		545		Cont.	Cont.	Cont.

Project Total Cost:			2981	1406		1507		3266		Cont.	Cont.	Cont.
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Schedule Profile (R4 Exhibit)

May 2009

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604804A - Logistics and Engineer Equipment - Eng Dev

PROJECT
L46

Event Name	FY 08				FY 09				FY 10				FY 11				FY 12				FY 13				FY 14				FY 15			
	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
Modernization / Redesign efforts of SECM for next generation of vehicles.																																
Design, Develop, Build and Test Allied Trade Configurations																																
Joint Modular Intermodal Containerizing of Soldier Portable & Special Tools Sets																																

Schedule Detail (R4a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration		PE NUMBER AND TITLE 0604804A - Logistics and Engineer Equipment - Eng Dev					PROJECT L46	
<u>Schedule Detail</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>
Modernization / Redesign efforts of SECM for next generation of vehicles.	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q	
Design, Develop, Build and Test Allied Trade Configurations	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q		
Joint Modular Intermodal Containerizing of Soldier Portable & Special Tools Sets			1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 2Q		

Modernization / Redesign efforts of Shop Equipment, Contact Maintenance (SECM) for next generation of vehicles.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration		PE NUMBER AND TITLE 0604804A - Logistics and Engineer Equipment - Eng Dev			PROJECT L47
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
L47 IMPROVED ENVIRONMENTAL CONTROL UNITS ED	4314	5931	4573		14818

A. Mission Description and Budget Item Justification: The Improved Environmental Control Units (IECU) program will provide a new generation of ECUs that use environmentally approved refrigerants, with zero ozone-depleting chemicals (ODCs) to replace the current Military Standard (MIL-STD) Family of Environmental Control Units (ECUs). The IECUs will provide improved cooling, heating, and dehumidification to soldiers and materiel systems in combat, combat support and combat service support units. The IECUs are required to replace currently fielded environmental control units in order to comply with statutory and regulatory restrictions on the use of Class II Ozone Depleting Chemicals (ODCs) and to improve the performance of military ECUs. They are form, fit and function replacements to the current MIL-STD ECUs. Technical improvements over existing military-standard ECUs will yield significant fuel and weight savings, reduction in scheduled maintenance, and increased reliability. 60K British Thermal Unit/Hour (BTU/H) IECU: The 60K BTU/H IECU will be a replacement for the existing Army 54K BTU/H ECU and Air Force developed 66K BTU/H Field Deployable Environmental Control Unit (FDECU). 9, 18, and 36K BTU/H IECUs: The 9, 18 and 36K BTU/H IECUs will be a replacement for the current MIL-STD-ECU variants. FY09 will fund System Development and Demonstration (SDD) Phase activities for 9, 18 and 36K IECUs.

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
FY08: 9, 18 and 36K IECU System Development and Demonstration (SDD) contract award.	2649		
FY08: Milestone C Decision for the 60K BTU/H IECU	800		
FY08: Perform Type Classification Materiel Release (MR) and other actions required for Milestone C Full Rate Production (FRP) decision for the 60K IECU.	865		
FY09: Continue SDD for the 9, 18 and 36K IECUs.		4714	3947
Concept and Technology Development		1051	626
Small Business Innovative Research/Small Business Technology Transfer Program		166	
Total	4314	5931	4573

<u>B. Other Program Funding Summary</u>	FY 2008	FY 2009	FY 2010	To Compl	Total Cost
OPA 3, Improved Environmental Control Units , MF9303	10320	11168	11924		33412

Comment: Based on JUN 09, 9/18/36 K IECU Contract Award

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY

5 - System Development and Demonstration

PE NUMBER AND TITLE

0604804A - Logistics and Engineer Equipment - Eng Dev

PROJECT

L47

C. Acquisition Strategy The 9/18/36K IECU variants contract will be executed in four phases: 1) one year Cost-Plus-Fixed-Fee contract for the first phase of System Development and Demonstration (SDD) , 2) two year CPFF contract to complete the SDD efforts, 3) an eight-month Firm-Fixed-Price (FFP) option for the Low Rate Initial Production (LRIP) phase, and 4) 5 one-year Fixed Price, Indefinite Delivery-Indefinite Quantity (IDIQ) options for the Full Rate Production (FRP) phase. During Phase I, two contractors will be required to design and fabricate two prototypes each for two government selected variants. These units will be subjected to limited testing. A down select based primarily on test results will be used by the Government to determine which contractor will continue development of all four variants in Phase II of the SDD effort. These variants will include four configurations: (1) 9K BTU/H, 115V, 1 phase, 60 Hertz; (2) 18K BTU/H, 208V, 3 phase, 60 Hz; (3) 18K BTU/H, 230V, 1 phase, 60 Hz; and (4) 36K BTU/H, 208V, 3 phase, 60 Hz.

60K IECU: in LRIP (FY09) OPA funding.

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
5 - System Development and Demonstration			0604804A - Logistics and Engineer Equipment - Eng Dev							L47		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
9, 18 and 36K IECU	CPFF	Various		2649	4Q	3010	3Q	2225	2Q	Cont.	Cont.	
60K IECU	CPFF	Various		18	2Q					Cont.	Cont.	
Subtotal:				2667		3010		2225		Cont.	Cont.	
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
9, 18 and 36K IECU	MIPR	CERDEC, Ft Belvoir, VA			2Q	814	2Q	1200	2Q	Cont.	Cont.	
60K IECU	MIPR	CERDEC, Ft Belvoir, VA		1335	2Q					Cont.	Cont.	
Concept & Technology Development						1051	2Q	626	2Q		1677	
Subtotal:				1335		1865		1826		Cont.	Cont.	
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
9, 18 and 36K IECU	MIPR	ATEC, APG, MD				500	3Q	100	3Q	Cont.	Cont.	
Subtotal:						500		100		Cont.	Cont.	
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT	
5 - System Development and Demonstration			0604804A - Logistics and Engineer Equipment - Eng Dev							L47	
9, 18 and 36K IECU	In-house	PM-MEP, Ft Belvoir, VA			1-4Q	556	1-4Q	422	1-4Q	Cont.	Cont.
60K IECU	In-house	PM-MEP, Ft Belvoir, VA		312	1-4Q					Cont.	Cont.
Subtotal:				312		556		422		Cont.	Cont.
Project Total Cost:											
				4314		5931		4573		Cont.	Cont.

Schedule Profile (R4 Exhibit)

May 2009

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604804A - Logistics and Engineer Equipment - Eng Dev

PROJECT
L47

Event Name	FY 08				FY 09				FY 10				FY 11				FY 12				FY 13				FY 14				FY 15			
	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
9, 18 and 36K BTU/H IECU																																
(1) SDD Contract Award																																
SDD Phase I																																
60K BTU/H IECU																																
(2) Milestone C Decision																																

Schedule Detail (R4a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration		PE NUMBER AND TITLE 0604804A - Logistics and Engineer Equipment - Eng Dev					PROJECT L47	
<u>Schedule Detail</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>
9, 18 and 36K BTU/H IECU								
SDD Contract Award		3Q						
SDD Phase I		3Q - 4Q	1Q - 2Q					
SDD Phase II			3Q - 4Q					
60K BTU/H IECU								
Milestone C Decision	2Q							

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

May 2009

BUDGET ACTIVITY	PE NUMBER AND TITLE				
5 - System Development and Demonstration	0604805A - Command, Control, Communications Systems - Eng Dev				
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	9188	9762	88995	Continuing	Continuing
485 Info Standards Interop Eng/Joint Interop Cert	4612	4745	9809	Continuing	Continuing
589 ARMY SYS ENGINEERING & WARFIGHTING TECH SUP	4576	5017	79186	Continuing	Continuing

A. Mission Description and Budget Item Justification: This Program Element (PE) supports efforts to develop interoperability of Army programs and products, horizontally and vertically for the digitized battlefield. Project D485 supports Information Standards Interoperability Engineering and Joint Interoperability Certification. It provides the critical elements of the Army/Joint Technical Architecture, the mandated standards and communication protocols for Army/Joint ground and air operations, and crucial certification test tools to evaluate systems' interoperability for the Warfighter in support of the Vice Chief of Staff of the Army (VCSA) and Army Acquisition Executive (AAE). It also provides Joint certification testing and certification recommendations to the Joint Chiefs of Staff (JCS) for Army systems. This Army-wide effort directly supports the management, oversight, development, maintenance, and interoperability at the Army enterprise level C4I/IT (Command, Control, Communications, Computers, and Intelligence/Information Technology) architecture efforts required to implement Unit Set Fielding (USF), Software Blocking (SWB) Policy and Army Knowledge Management. Project D589 Army Systems Engineering (ASE) & Warfighter Technical Support provides essential technology expertise on all Systems Engineering and Technical Architecture (SE/TA) matters critical to gain Information Dominance and foster interoperability among all Army systems.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

May 2009

BUDGET ACTIVITY	PE NUMBER AND TITLE		
5 - System Development and Demonstration	0604805A - Command, Control, Communications Systems - Eng Dev		
<u>B. Program Change Summary</u>	FY 2008	FY 2009	FY 2010
Previous President's Budget (FY 2009)	9942	9795	10083
Current BES/President's Budget (FY 2010)	9188	9762	88995
Total Adjustments	-754	-33	78912
Congressional Program Reductions		-33	
Congressional Rescissions			
Congressional Increases			
Reprogrammings	-476		
SBIR/STTR Transfer	-278		
Adjustments to Budget Years			78912

Change Summary Explanation: Funding - FY 2010 funding increase in support of the Information Standards Interoperable Engineering/Joint Interoperable Certification program, the Army Systems Engineering & Warfighting Technology Support program and the Joint Battle Command - Platform (JBC-P).

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration		PE NUMBER AND TITLE 0604805A - Command, Control, Communications Systems - Eng Dev			PROJECT 485	
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost	
485 Info Standards Interop Eng/Joint Interop Cert	4612	4745	9809	Continuing	Continuing	

A. Mission Description and Budget Item Justification: Focus for this project is to support the engineering or evaluation of commercially-available information technology (IT) tools to develop architecture products Information Technology based Command, Control, Computers, and Communications (C4/IT) systems such as Applications Program Interfaces for Weapons Systems. A significant effort will be on building Army (consistent with DoD) C4/IT technical standards-compliant Army data repositories that are web-accessible but secure. These repositories will be consistent with DoD standards and policies and virtually appear to be a single repository for Army C4/IT architecture products.

To support the Army Vice Chief of Staff (VCSA) and the Army Chief Information Officer/G6, as cited in the AEA Master Plan, this initiative fulfills the Clinger-Cohen Act mandate of developing sound integrated Information Technology (IT) architectures and the Army's Software Blocking Policy. The increased combat power of the Future Force will be dependent on the information superiority of network & knowledge centric warfare and the ability of systems to be fully -interoperable as a member of the joint, multinational, interagency team as well as emerging Future Force (FF) C4ISR (Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance) Systems. It identifies and reduces interoperability issues earlier in the life cycle by intra-Army/FF/Joint/combined experiments and assessments, and through the establishment & sustainment of common standards. This Army wide effort directly supports the management, oversight, development, maintenance, and interoperability of the Army enterprise level C4I/IT architecture efforts required to implement Unit Set Fielding, Software Blocking and Army Enterprise Architecture (AEA). Specifically, this project resources the Army's messaging standards conformance authority in assessing compliance with the Defense Information Systems Repository (DISR), in meeting the warfighter information exchange requirements and in facilitating their interoperability. It also resources, in accordance with the DISR, the development and maintenance of the following information standards: Variable Message Format (VMF) & Combat Net Radio (CNR) protocol, which support Army/Joint ground operations; Tactical Digital Information Links (TADILs), which support Air Defense operations; and US Message Text Format (USMTF), which support Intel and Commanders operations. It provides the Army's lead for configuration management functions of these standards and test tools at both Army and Joint levels. This project resources the Army participation in joint/allied messaging certification testing & configuration management processes. This project also resources the development and fielding of a suite of four (4) crucial tools which are used throughout the entire Army. These tools which are currently under development will provide the ideal means to: a) validate JTA-A critical messaging and protocol standards; b) improve systems interoperability; c) verify/certify correct system implementations and interpretation to JTA-A; d) sustain/support digitization and transition of fielded systems; e) support Software Blocking and interoperability testing; f) provide Legacy AEA interoperability with Future Combat System (FCS) command and control systems. These crucial tools are critical to the JTA-A Compliance, Certification Testing mission & Interoperability programs. The task also supports the Army's transformation campaign while mitigating interoperability issues resulting in reducing cost & program slippages. This project also provides the Configuration Management & Control for the Software Blocking (SWB)/USF (Unit Set Fielding).

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
Develop and update architecture standards and protocols necessary to ensure C4ISR systems interoperability.	1348	1368	2989
Engineer, develop & publish Army Warfighter Information Standards (i.e. XML-USMTF/VMF, Wireless XML, database exchange, etc...) incorporating DoD standards requirements.	977	968	2006

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT	
5 - System Development and Demonstration	0604805A - Command, Control, Communications Systems - Eng Dev	485	
Identify, analyze, and provide solutions to gaps in technical architecture standards requirements.	1049	1045	2206
Develop and engineer Army Net-Centric Enterprise Service standards and protocols supporting OSD Global Information Grid messaging requirements and serve as Army focal point for messaging working group.	1106	1101	2307
Knowledge Center Development - Build & update as necessary access to website repositories for key policies, directives, and architecture products.	132	130	301
Small Business Innovative Research/Small Business Technology Transfer Programs		133	
Total	4612	4745	9809

B. Other Program Funding Summary Not applicable for this item.

C. Acquisition Strategy The efforts funded in this project are non-system specific, interoperability experimentation, evaluation and certification across multiple systems. The contractual efforts/services are obtained from existing competitive omnibus support service contracts.

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
5 - System Development and Demonstration			0604805A - Command, Control, Communications Systems - Eng Dev							485		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Labor	In House	USACECOM , Fort Monmouth, NJ	27746	4612		4745		9809		Cont.	Cont.	
Travel	In House	USACECOM, Fort Monmouth, NJ	457							Cont.	457	
Subtotal:			28203	4612		4745		9809		Cont.	Cont.	
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Development Support	C/CPFF	Arinc, Fort Monmouth, NJ	5699								5699	
Development Support	C/CPAF	Telos, Fort Monmouth, NJ	4581								4581	
Development Support	C/CPFF	CSC, Fort Monmouth, NJ	1963								1963	
Development Support	C/CPFF	C3I, Fort Monmouth, NJ	1374								1374	
Development Support	SS/CPFF	Mitre, Fort Monmouth, NJ	280								280	
Development Support/ Army Enterprise Applications Architecture	C/T&M	Binary, Ft. Belvoir, VA	46								46	
Development Support- Knowledge Center	C/T&M	ITEL, Ft Monmouth, NJ	1198								1198	
Development Support	C/T&M	ITEL, Ft Monmouth, NJ	2640							Cont.	2640	
Development Support	C/T&M	Northrop Grumman (SEC SSES), Ft Monmouth, NJ	2579							Cont.	2579	
Technical Support	C/CPFF	TFE, Fort Monmouth, NJ	95							Cont.	95	

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration			PE NUMBER AND TITLE 0604805A - Command, Control, Communications Systems - Eng Dev							PROJECT 485	
Technical Support	C/CPFF	Marconi, Fort Monmouth, NJ	183								183
Equipment	In House	USACECOM, NJ	485							Cont.	Cont.
Equipment (Development Support)	C/FFP	GTE, Tauton, MA	106								106
Telecommunications	MIPR	USASC, Fort Huachuca, AZ	1145							Cont.	1145
Subtotal:			22374							Cont.	Cont.

Remarks: *Contracts/awards cited are 5 year (1 base + 4 option years). Future award dates imply future competitive award, contractor TBD.

III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:												

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:												

Project Total Cost:	50577	4612		4745		9809		Cont.	Cont.
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Schedule Detail (R4a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604805A - Command, Control, Communications Systems - Eng Dev	PROJECT 485
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<u>Schedule Detail</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>
Knowledge Center Development								
Army Enterprise Architecture Policy Development								
Develop Comfiguration Management Processes								
Engineer Warfighter C4/IT Standards	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q				
Evaluate, experiment, and provide systems integration for testing of ACTD, ATD,								
Experiment/Evaluate Joint Interoperability in conjunction with CIPO initiatives								
Conduct Joint/Coalition Experiments								
Evaluate, certify systems for and support SDD								
Evaluate, certify systems for and support FDC								
DOTE/JDEP Initial Concept/Evaluation/Experiments								
Develop and maintain Combat Net Radio (CNR) Standard								
Develop and maintain Variable Message Format (VMF) application header standards								
Develop and maintain Variable Message Format (VMF) Standards & standard databas								
Configuration Management and control of TADIL(A,B,J) and USMTF standards								
Represent Army on Army/DOD forums								
Test and promulgate Defense Collaborative Tools Set within the Army								

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604805A - Command, Control, Communications Systems - Eng Dev			PROJECT 589	
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
589 ARMY SYS ENGINEERING & WARFIGHTING TECH SUP	4576	5017	79186	Continuing	Continuing

A. Mission Description and Budget Item Justification: This project has been re-aligned to better support the mission of Army Chief of Staff (CSA) sanctioned Army Architecture Integration Center (AAIC) for developing, implementing and maintaining the Army Enterprise Architecture for Information Technology based Command, Control, Computers & Communications (C4/IT) systems. AAIC mission is to develop standards-based architecture products that are inter-operable within the Army as well as the with Joint, Interagency, and Multinational systems.

This project funded the Army Systems Engineering Office (ASEO) by providing technical research and development and modeling and simulation with the primary mission of developing technical architecture standards without compromising DoD-mandated standards but ensuring Army C4/IT systems under development are interoperable with legacy systems still utilized by the Army warfighter, which extend from tactical levels up through operational and strategic components of the Army Battle Command Architecture (ABCA), as well as, the institutional portions of the Enterprise to include the Army's Business Enterprise Architecture (BEA). The ASEO supports the Army CIO/G6 Architecture Integration Center (AAIC) in establishing an integrated AEA framework that complements, and is a natural extension of, the GIG-Enterprise Services (GIG-ES). In addition, the ASEO is an essential contributor in the development of the JBMC2 integrated architecture, the Battle Command Architecture, and emerging Cross-Service Integrated Architecture efforts. Each of these architecture definition and integration efforts is elemental to achieving the Army's goal of a NetCentric Future Force.

Previously, the Joint Technical Architecture (JTA) and JTA-Army (JTA-A) have provided the foundation for designing, building, fielding and supporting Joint interoperable Army systems in an expedient and cost-effective manner. With the revision to the standardization process as implemented by the Defense Information Systems Agency (DISA), technical architecture standards are encompassed in the new Defense Information Systems Repository (DISR) program. The Army must participate in DISR to ensure Army requirements are adequately captured and reflected in any new baseline developed by DISA. The ASEO identifies emerging standards in support of the integration of new technologies into existing Army systems and Advanced Technology Demonstrations/Advanced Concept Technology Demonstrations (ATD/ACTDs), enabling the Army transformation to the Future Force. The ASEO's work efforts in the development and maintenance of Army IT standards within the context of DISR guidelines are critical path elements to achieve transformation, increase joint interoperability and to provide the future Army with the ability to fight and win on tomorrow's battlefields. However, the Technical Architecture (TA) alone only provides the foundation for interoperability. Integrated Army Enterprise Architectures (e.g., ABCA, BEA, etc.) fuse Operational, Systems and Technical views of the Army Enterprise into cohesive and manageable information sets that allow the Army to make consequent decisions regarding the Army's inventory of present and future systems and their associated funding. In this area the ASEO specializes in defining and exploiting (through analysis) the relationships between architectural views to provide quantitative answers to complex questions regarding the Army's future capabilities and the roadmap the Army will pursue in realizing them.

The allocated resources fund two support efforts for CIO/G6. First, subsequent to the development of the AKEA (Army Knowledge Enterprise Architecture) Guidance Document, V1.1, the effort has shifted to development of the Army Technical Reference Model (TRM) for information broker/mediation services, and mapping the Army's architecture requirements to DOD Net-Centric Operations and Warfare Reference Model, including NCES (Net-Centric Enterprise Services). Second, support of the design, development, deployment and maintenance of the AAIC (Army Architecture Integration Cell) Web-based Knowledge Center continues with increased development requirements and functionality, including the consolidation of architectural repositories, design of the DARS-A (Defense Architecture Repository-Army) database, and acting as the Army's agent

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604805A - Command, Control, Communications Systems - Eng Dev	PROJECT 589
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for DARS/DARS-A.

Joint Battle Command - Platforms (JBC-P), which includes Blue Force Tracking (BFT) and Army Aviation, provides true Joint force Command and Control (C2) Situational Awareness (SA) and communications (e.g., terrestrial, celestial) capability at the platform level through command center locations (e.g., Network Operations Centers (NOC), TOCs, Brigade Command Posts) and enables mission accomplishment across the entire spectrum of military operations. JBC-P serves as the cornerstone for Joint Blue Force Situational Awareness (JBFSAs). It provides continuous near-real-time identification of friendly locations to populate the Joint Common Operating Picture (JCOP). JBC-P enhances Joint Combat Identification to increase combat effectiveness and reduce fratricide in a secure environment. It enables Joint, Net-Centric C2/Battle Command by seamlessly passing/sharing relevant information vertically and horizontally, within all levels of command, regardless of Service unit hierarchy. In addition to utilizing the FBCB2/BFT system, JBC-P system hardware consists of a family of computers (e.g., handhelds, tablets, ruggedized computers, beacons, and in-dash computers), communications equipment (e.g., satellite transceivers/antennas), encryption devices (e.g., KGV-72), and ancillary equipment (e.g., Mission Data Loader, Disc Duplicator, cables, installation kits, etc.).

JBC-P RDTE Funding begins in FY10.

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
Analyze and provide Systems Engineering solutions to fill in gaps identified in C4ISR systems under development as well as fielded systems.	1077	1442	3104
Identify unique Army requirements to influence Army/DoD Architecture Technical standards under new Defense information Systems Repository developed under Defense Information Systems Agency (DISA) oversight. Prior years: Technically influence the development/implementation of Joint Technical Architecture (JTA). FY03 accomplishments: JTA Versions 5.x, 6.0 restructured and aligned with Net-Centric Philosophy and redefined scope and standards applicability. Planned activities: JTA-A version 7.0, 7.5 to include major revision of Information Security Section, to include results of Tactical Imagery Transport Study	205	176	417
Investigate information technical standards for inclusion in DISR, Defense Standards Repository. Global Information Grid (GIG) Technologies (XML, JPEG 2000, MPEG 4, IPV6)	180	181	312
Research and incorporate applicable emerging open standards-based commercial technologies to influence future force systems. Ensure that open commercial standards adopted by Future Force enabling systems are reflected in the DISR baseline. Maintain subject matter expertise on DISR, Defense Standards Repository Information Technology (IT) standards' mandates to ensure current and future force systems remain interoperable. Ensure a logical and cost-effective evolution of TA baselines while maximizing Joint interoperability.	735	732	1458
DISR Compliance Requirements -Ensure Program Managers have an executable and effective strategy for implementing the Army/DoD Technical Architecture standards.	364	350	729
Validate/Integrate Army Enterprise Technical Views to enable the Army Technical and Systems Architect (CIO/G6) to monitor, assess and control the inherent risks associated with leveraging continuously changing technologies across all Army Enterprise Functionals/PEO/Communities.	820	800	1666
Provide systems analysis for implementing IPv6 protocol across Army to ensure communications/data-sharing/data-exchange between systems. Prior Years: As a result of the decision agreed to at the 19 Dec 02 AKEA, GOSC, direction of MU17 funding was realigned to	365	365	729

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY	PE NUMBER AND TITLE		PROJECT
5 - System Development and Demonstration	0604805A - Command, Control, Communications Systems - Eng Dev		589
support the Protocols Investigation for the Next Generation (PING) program. The PING supported current technology agreements with various technology developers such as HP, Cisco, Microsoft and Telecordia. In addition, PING represented the ARMY CIO/G6 office at various ASD (NII)/DoD CIO meetings discussing DoD IPv6 policy and Transisition Planning, participated with JITC at DISA's Def Interop Comm Exercise 2003 (DICE 2003) demonstrating IPv6 interoperability, active member of DoD IPv6 Test Bed evaluating and testing IPv6 benefits and trade-offs, first Army lab participating with North American IPv6 Task Forces MoonV6 initiative, drafted ARmy's Phase I IPv6 Transition plan and initial transition strategy to migrate Army systems and networks to native IPv6 by FY08 in compliance with DoD policy,prepared evaluation criteria for selecting early IPv6 adopter candidates in support of the Army GIO/G6 office, hosted first Army IPv6 data call to collect systems impact information and baseline on Army IPv6 transition plan, provided IPv6 technical guidance and knowledge to the Army acquisition community.			
Define and exploit (through analysis) the relationships between architectural views to provide quantitative answers to complex questions regarding the Army's future capabilities and the roadmap the Army will pursue in realizing them.	365	365	729
Provide systems engineering solutions including technical architectures for Army systems supporting Joint Blue Force Situational Awareness (JBFSA)initiative	465	465	1042
Develop Capabilities, Product Applications, Platform Interoperability, and System Services across the JBC-P family of systems, to include the development of capabilities to meet Key Performance Parameters (KPPs) and in support of Multi-Level Security Domains for Network, Users, and Information.			37000
Perform Software/Systems Engineering in support of the development of JBC-P Capabilities, Applications, and Services, to include, but not limited to, Conducting Engineering Studies, Architecture Development (both Software and Network), System Analyses, Technical Readiness Assessments, Technical Interchange Meeting/Events, and development of Related Reports and other deliverables.			24000
Design, Develop and Procure Prototypes for Platform Dismountable Product, Standalone Dismounted Handheld Product, and Beacon Product, Embedded Encryption and Satellite Transceiver.			2000
Develop and Conduct Integration Events			2000
PM FBCB2 Program Management			4000
Small Business Innovative Research/Small Business Technology Transfer Programs		141	
Total	4576	5017	79186

B. Other Program Funding Summary Not applicable for this item.

C. Acquisition Strategy The JBC-P program was Joint Requirements Oversight Council (JROC) approved in May 2008. RDTE funding for JBC-P begins in FY10.

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
5 - System Development and Demonstration			0604805A - Command, Control, Communications Systems - Eng Dev							589		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Government Systems Engineering Support	In House	ASEO, DCTS, PING/03 only, Fort Monmouth, NJ	19667	1896		1953		6030		Cont.	Cont.	
Contract Support	C & T&M-R	C3ISGI, Tinton Falls, NJ	3080								3080	
Contract Support	C & FP	TRW, Domingues Hills, CA	1281								1281	
Overhead		ASEO/WTS CECOM, Fort Monmouth, NJ	1422								1422	
Contract Systems Engineering Support	C & FP	Battelle, Alexandria, VA	354								354	
System Development and Integration	MIPR	PEO C3S, PM TOCS, Fort Monmouth, NJ	25								25	
Travel	In House	SEC, USACECOM, Ft. Monmouth, NJ	95	25		25		25			195	
Development Support	C/T&M	Northrop Grummon (SEC SSES), Ft. Monmouth, NJ	200	50		50		50			400	
Contract Systems Engineering Support	C & FP	SRI, Menlo Park, CA	199								199	
Labor (Internal Government)	In House	SEC, USACECOM, Ft. Monmouth, NJ	3468	850		856		856			6886	
Equipment	In House	USACECOM, NJ	20	5		5		5			40	
Development Support	C & TM	ITEL, Mays Landing, NJ	200	50		50		50			400	
Contract Support	C & FP	Lockheed Martin, Eatontown, NJ	545								545	
Development Support - Army Enterprise Applications Architecture	C/T&M	Binary, Ft. Belvoir, VA										
Contract Support	C & T&M	SAIC, Falls Church,	1811								1811	

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE								PROJECT	
5 - System Development and Demonstration			0604805A - Command, Control, Communications Systems - Eng Dev								589	
		VA										
Contract Systems Engineering Support	C & FP	SRC, Atlanta, GA	612									612
Contract Systems Engineering Support	SS & FP	MITRE, Tinton Falls, NJ	8597	290		290			350			9877
Systems Engineering and Integration	MIPR	WTS - ISIO CECOM, Fort Monmouth, NJ	2341								Cont.	2341
Contract Support	C & T&M	Datron, Simi Valley, CA	305									305
Contract Systems Engineering Support	C & FP	Gemini, Billerica, MA	137									137
Development Support- Knowledge Center	C & TM	ITEL, Mays Landing, NJ	849									849
Contract Support	IPA Agreement	Rutgers University, New Brunswick, NJ	528									528
Contract Systems Engineering Support	C & FP	Suntek Systems, Eatontown, NJ	460									460
Contract Systems Engineering Support	C & FP	HTPi, Shrewsbury, NJ	145									145
Contract Support	C & TM	Telos, Eatontown, NJ	24									24
Engineering Support	MIPR	ISEC, Fort Huachuca, AZ	1357								Cont.	1357
Contract Support	C & TM	PTG/CACI, Eatontown, NJ	26									26
Contract Systems Engineering Support	C & FP	Litton, Reading, MA	490	240		240			240			1450
Contract Support	C & FP	CSC, Eatontown, NJ	1746									1746
Contract Support	C & T&M	BAE, Tinton Falls, NJ	139									139
Contract Support	C & FP	Janus Research Group, Appling GA	72									72
Contract Systems Engineering Support	C & FPI	CSC, Eatontown, NJ	17948	1090		1468			2500			25506
Contract Systems Engineering Support	C & FP	GTE/BBN, Cambridge, MA	960									960

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT			
5 - System Development and Demonstration			0604805A - Command, Control, Communications Systems - Eng Dev							589			
Travel	In House	ASEO/WTS CECOM, Fort Monmouth, NJ	1696	80			80		80		Cont.	Cont.	
Development of software based VOIP	TBD		2400										2400
JBC-P Software Development	TBD	TBD							37000	2-4Q	Cont.	Cont.	Cont.
JBC-P Software/Systems Engineering	TBD	TBD							24000	2-4Q	Cont.	Cont.	
JBC-P Hardware Development	TBD	TBD							2000	2-4Q	Cont.	Cont.	
Subtotal:			73199	4576			5017		73186		Cont.	Cont.	Cont.
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract	
JBC-P PM Office Support	In-House							1000	1-4Q	Cont.	Cont.		
JBC-P Matrix Support								1000	1-4Q	Cont.	Cont.		
JBC-P Miscellaneous Contractor Support	TBD	TBD						2000	1-4Q	Cont.	Cont.		
Subtotal:								4000		Cont.	Cont.		
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract	
JBC-P Contractor Test Support	TBD	TBD						2000	2-4Q	Cont.	Cont.		
Subtotal:								2000		Cont.	Cont.		
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract	

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY	PE NUMBER AND TITLE							PROJECT		
5 - System Development and Demonstration	0604805A - Command, Control, Communications Systems - Eng Dev							589		
Subtotal:										
Project Total Cost:	73199	4576		5017		79186		Cont.	Cont.	Cont.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

May 2009

BUDGET ACTIVITY	PE NUMBER AND TITLE				
5 - System Development and Demonstration	0604807A - Medical Materiel/Medical Biological Defense Equipment - Eng Dev				
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	23397	45222	33893	Continuing	Continuing
812 MIL HIV VAC&DRUG DEV	4506	4681	4472	Continuing	Continuing
832 Field Medical Systems Engineering Development	4880	14804	15716	Continuing	Continuing
834 SOLDIER SYS PROT-ED	1793	1777		Continuing	Continuing
849 INFEC DIS DRUG/VACC ED	3909	13594	13705	Continuing	Continuing
A11 LSTAT MEDICAL TECHNOLOGY (CA)	3092	2392			5484
CS5 MED MATERIEL/MED BIO DEFENSE INITIATIVES (CA)	5217	7974			13191

A. Mission Description and Budget Item Justification: This program element (PE) funds advanced development of medical materiel within the System Demonstration and Low Rate Initial Production portions of the acquisition life cycle using 6.5 funding. It supports products successfully developed in the Systems Integration portion of the Systems Development and Demonstration phase through completion of the Milestone C Decision Review. When available, commercially-off-the-shelf (COTS) medical products are also tested and evaluated for military use. This PE primarily includes pivotal (conclusive) human clinical trials necessary for licensure by the US Food and Drug Administration, along with related product stability, production manufacturing, supportability analysis, and operational testing for biologics (products derived from living organisms) and devices to demonstrate that products are safe and effective.

Combat Casualty Care devices and medicines: (1) enhance care at the first responder level to save lives, and (2) provide more effective post evacuation medical care and rehabilitation to shorten recovery time. The F2 concept places Soldiers into a more austere environment with lengthened evacuation times (both arrival and transit). This requires medics and first responders to improve their ability to save lives and extend stabilization. Reduction in weight, cube, and sustainment allows medical units to increase mobility and maintain contact with their supported Units of Action.

Soldier performance enhancers in the form of drugs or diagnostics, allow commanders to increase Soldiers cognitive awareness and stamina. This improves Soldiers operational capabilities and has the potential to reduce casualties.

Disease and non-battle injuries (DNBI) are the largest contributor to the medical footprint. Infectious disease vaccines and preventive drugs reduce the risk of warfighters contracting debilitating or fatal diseases, reducing levels of DNBI affected Soldiers and in turn, significantly reducing a large portion of the requirement for supporting combat support hospitals in the theater of operations, and the strain placed on the Army's personnel replacement and logistical systems. This is especially important due to the higher risk posed by the ever expanding urban warfare environments. The reduction of patient evacuation requirements within the current and Future Force (F2) units will act as a force multiplier, due to the retention of uniquely skilled and combat tested Soldiers in the theater.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

May 2009

BUDGET ACTIVITY

PE NUMBER AND TITLE

5 - System Development and Demonstration

0604807A - Medical Materiel/Medical Biological Defense Equipment - Eng Dev

Military Human Immunodeficiency Virus (HIV) Vaccine and Drug Development funds militarily relevant HIV medical countermeasures. These include advanced component development of candidate vaccines and drugs for large-scale field testing.

This program is managed by U.S. Army Medical Materiel Development Activity (USAMMDA) and U.S. Army Medical Materiel Agency (USAMMA) of the US Army Medical Research and Materiel Command.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604807A - Medical Materiel/Medical Biological Defense Equipment - Eng Dev
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<u>B. Program Change Summary</u>	FY 2008	FY 2009	FY 2010
Previous President's Budget (FY 2009)	27745	34971	33613
Current BES/President's Budget (FY 2010)	23397	45222	33893
Total Adjustments	-4348	10251	280
Congressional Program Reductions	-178	-149	
Congressional Rescissions			
Congressional Increases		10400	
Reprogrammings	-3413		
SBIR/STTR Transfer	-757		
Adjustments to Budget Years			280

Change Summary Explanation: Funding:
 In FY08 \$3.413 million reprogrammed to 6.3 funding for Plasma Sterilizer and Vet Research Manpower Project.
 In FY09, increase of \$10.4 million was due to Congressional ads to the following projects:
 In FY09 project Rotary Valve Pressure Sing Absorption Oxygen Generator received \$800 thousand.
 In FY09 project Plasma Sterilizer received \$3.2 million.
 In FY09 project Lightweight Trauma Model received \$2.4 million.
 In FY09 project Pharmaceutical Advanced Packaging received \$1.6 million.
 In FY09 project LSTAT Advanced Medical Technologies received \$2.4 million.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604807A - Medical Materiel/Medical Biological Defense Equipment - Eng Dev			PROJECT 812	
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
812 MIL HIV VAC&DRUG DEV	4506	4681	4472	Continuing	Continuing

A. Mission Description and Budget Item Justification: This project funds militarily relevant human immunodeficiency virus (HIV) medical countermeasures. These funds provide for engineering and manufacturing development of candidate vaccines and drugs to permit large-scale field testing. Development is focused on militarily unique needs effecting manning, mobilization, and deployment.

The major contractor is The Henry M. Jackson Foundation for the Advancement of Military Medicine, Rockville, MD. Research efforts are coordinated with the National Institutes of Health.

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
In FY08, continued the observation and follow-up phase of the multi-year expanded safety/efficacy trial in Thailand. In FY09, complete the observation and follow-up phase of the expanded safety/efficacy trial (> 16,000 subjects) in Thailand and begin data analysis for this HIV Vaccine (conduct Design Readiness Review (DRR). In FY10, prepare preliminary clinical study report on the completed expanded safety/efficacy trial in Thailand and conduct a critical design review (CDR) to determine future development of the prime-boost vaccine based on trial results. Follow up clinical trial for HIV positive for viral load in order to validate viral load as a surrogate endpoint for use in HIV vaccine studies.	4506	4550	4472
Small Business Innovative Research/Small Business Technology Transfer Programs.		131	
Total	4506	4681	4472

B. Other Program Funding Summary Not applicable for this item.

C. Acquisition Strategy Test and evaluate commercially developed vaccine candidates in government-managed trials.

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE								PROJECT	
5 - System Development and Demonstration			0604807A - Medical Materiel/Medical Biological Defense Equipment - Eng Dev								812	
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Product Development	Cooperative Agreement	Henry M. Jackson Foundation, Rockville, MD	15280	3153		3326		3247			28253	
Subtotal:			15280	3153		3326		3247			28253	
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
No product/contract costs greater than \$1M individually			394	46		47		46			579	
Subtotal:			394	46		47		46			579	
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Test and Evaluation	Government Laboratory	Walter Reed Army Institute of Research (WRAIR), Silver Spring, MD	4950	1213		1213		1088			8464	
Subtotal:			4950	1213		1213		1088			8464	
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration			PE NUMBER AND TITLE 0604807A - Medical Materiel/Medical Biological Defense Equipment - Eng Dev						PROJECT 812	
No product/contract costs greater than \$1M individually			483	94		95		91		854
Subtotal:			483	94		95		91		854
Project Total Cost:										
			21107	4506		4681		4472		38150

Schedule Profile (R4 Exhibit)

May 2009

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604807A - Medical Materiel/Medical Biological Defense Equipment - Eng Dev

PROJECT
812

Event Name	FY 08				FY 09				FY 10				FY 11				FY 12				FY 13				FY 14				FY 15			
	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
Prime-Boost HIV Vaccine (DRR)								0																								
HIV Vaccine (CDR)												0																				

Schedule Detail (R4a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration		PE NUMBER AND TITLE 0604807A - Medical Materiel/Medical Biological Defense Equipment - Eng Dev						PROJECT 812
<u>Schedule Detail</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>
Prime-Boost HIV Vaccine (DRR)		4Q						
HIV Vaccine (CDR)			4Q					

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration		PE NUMBER AND TITLE 0604807A - Medical Materiel/Medical Biological Defense Equipment - Eng Dev			PROJECT 832
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
832 Field Medical Systems Engineering Development	4880	14804	15716	Continuing	Continuing

A. Mission Description and Budget Item Justification: This project funds development of medical products for enhanced combat casualty care and follow-on care, including rehabilitation. This project funds pivotal (conclusive) human clinical trials or mechanical engineering evaluations for efficacy of devices or biologics (products derived from living organisms) to fulfill unique military requirements. Mature commercially-off-the-shelf (COTS) medical products are also evaluated for military use. Consideration will also be given to reducing the medical sustainment footprint through smaller weight and cube volume, or equipment independence from supporting materiel. This work is frequently completed through a laboratory/contractor team with the contractor obtaining the U.S. Food and Drug Administration (FDA) licensure for sale of the product.

In FY10, Project 834 Soldier Sys Prot-ED will be consolidated into Project 832.

Major contractors/intra-governmental agencies include: IGR Enterprises, Inc.; Army Medical Department Board Test Center; SeQual Technologies, Inc.; Enginivity, Inc.; Ultrasound Diagnostics, Inc.; HemCon Medical Technologies, Inc.; Cerdak Ltd; Hemerus Medical, LLC; Fast Track Drugs & Biologics, LLC; Integrated Medical Systems, Inc; the National Institutes of Health National Heart, Lung and Blood Institute (NHLBI), and the U.S. Army Aeromedical Research Laboratory Walter Reed Army Institute of Research (WRAIR) and Institute of Surgical Research (ISR) for user evaluation.

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
(1) Ceramic Oxygen Generator (COG): In FY09, transition from project 836, conduct technical and user evaluations, obtain FDA clearance, conduct a Milestone C review in Qtr 3 FY 09 and transition to Production and Deployment. (2) Rotary Valve Pressure Swing Adsorption Oxygen Generator (RVPSAOG): In FY08 transitioned from project 836 and conducted user testing and evaluation of Omni II system. In FY09, conduct Milestone C review of Omni II, and initiate low rate production, with an estimated completion of Qtr 4 FY 09.(3) Battery Powered IV Fluid Warmer: In FY08, developed battery prototype to replace line power. In Qtr 4 FY 09 conduct a Milestone C review and transition to Production and Deployment.(4) Field Sterilizer: In FY09, following multiple vendor review, conduct technical and user evaluation to determine the best solution. (5) 120 LPM (liter per minute) Oxygen Generator: In FY09, begin request for proposal for review of production capabilities - performance characteristics will be reviewed to determine if a commercial-off-the-shelf (COTS) solution can meet current capabilities defined or if research and development refinement of a COTS system is feasible .(6) Ultrasonic Brain Imager (UBI): In FY10, transition from project 836, begin safety and effectiveness human clinical trial, conduct a human factor evaluation of the prototype, and conduct a Milestone C for transition to Production and Deployment. (7) Freeze-dried Plasma Program: In FY09, transition from project 836 and based on a down-select, manufacture clinical lots of a freeze-dried plasma product, and begin pre-trial activities for a safety/efficacy human clinical trial. In FY10, begin a multi-center safety/efficacy human clinical trial, and perform stability studies on the product.	4880	14393	15716
(8) Red Blood Cell Extended Life (RBCXL) program (severe bleeding treatment candidate - a new blood collection and storage system			

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT	
5 - System Development and Demonstration	0604807A - Medical Materiel/Medical Biological Defense Equipment - Eng Dev	832	
<p>that extends the shelf-life of red blood cells from 6 to 8 weeks): In FY09 transition from 836 and begin a human safety/efficacy study, and perform good manufacturing practices validation of the blood collection and storage system. In FY10, will prepare and complete enrollment in a human safety/efficacy study. (9) Platelet Derived Hemostatic Agent (PDHA): (10) Intranasal Ketamine (low dose pain management via nasal spray): (11) Hypertonic Saline Dextran (treatment of shock due to blood loss): In FY10 will support human expanded safety/efficacy trial for treatment of shock. (12) Woundstat Safety Study: In FY09, complete testing and move to production. (13) Lab, Blood Bank, and Anatomical testing for COTS equipment to meet essential characteristics and enhance technology. Testing to begin Qtr 1 FY09. (14) Dental Field Unit: In FY09, begin and complete request for proposal for review of production capabilities - performance characteristics will be reviewed to determine if a commercial-off-the-shelf (COTS) solution can meet current capabilities defined or if research and development refinement of a COTS system is feasible.</p>			
<p>(15) Noise Immune Stethoscope: In 4Q FY09, transition from project 879, and secure FDA Approval, Meet Ruggedness Requirements, Establish Manufacturing Practice, Set Up Manufacturing. Conduct Milestone C in FY09. (16) Life Support for Trauma and Transport (LSTAT): In FY10, transition from project 834, conduct Milestone C 3Q and transition to Production and Deployment. (17) In FY10, conduct air worthiness testing on commercial off the shelf and non-developmental medical devices for military field use.</p>			
Small Business Innovative Research/Small Business Technology Transfer Programs.		411	
Total		4880	15716

B. Other Program Funding Summary Not applicable for this item.

C. Acquisition Strategy Develop in-house or industrial prototypes in government-managed programs to meet military and regulatory requirements for production and fielding.

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration			PE NUMBER AND TITLE 0604807A - Medical Materiel/Medical Biological Defense Equipment - Eng Dev							PROJECT 832		
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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Rotary Valve Pressure Swing Adsorption oxygen Generator		Sequal Technologies, Inc., San Diego, CA	3197	4880		300					8377	
Hypertonic Saline Dextran		National Institutes of Health, National Heart, Lung and Blood Institute (NHLBI) Bethesda, MD						4800			4800	
Freeze-dried Human Plasma		HemCon Medical Technologies, Inc, Tigard, OR				3255		7150			10905	
Extended Life Red Blood Cell Product		Hemerus Medical, LLC, St. Paul, MN				1150		745			1895	
Virtual Imaging						1000		450			1450	
No product/contract costs greater than \$1M individually						1260					1260	
Subtotal:			3197	4880		6965		13145			28687	

II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Regulatory Support		Clinical Research Management, Inc., Hinckley, OH				1357		1400			4157	
						1808		234			4396	
Subtotal:						3165		1634			8553	

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE PROJECT
0604807A - Medical Materiel/Medical Biological Defense Equipment 832
- Eng Dev

III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Not Applicable						3046		433			7587	
Subtotal:						3046		433			7587	

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
No product/contract costs greater than \$1M individually			18173			1628		504		Cont.	Cont.	
Subtotal:			18173			1628		504		Cont.	Cont.	

Project Total Cost:

21370

4880

14804

15716

Cont.

Cont.

Schedule Profile (R4 Exhibit)

May 2009

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604807A - Medical Materiel/Medical Biological Defense Equipment - Eng Dev

PROJECT
832

Event Name	FY 08				FY 09				FY 10				FY 11				FY 12				FY 13				FY 14				FY 15				
	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) Ceramic Oxygen Gen Sys (MS-C)								▲ 0	MS C																								
(2) Rotary Valve Press Swing Oxy (MS-C)								▲ 0	MS C																								
(3) Battery Powered Iv Fld Warm (MS-C)								▲ 0	MS C																								
(4) Field Sterilizer (MS-B)								▲ 0	MS B																								
(6) Ultrasonic Brain Imager (MS-C)												▲ 0	MS C																				
(7) Freeze-dried Human Plasma - clinical lots																▲ 0																	
(8) Red Blood Cell Extend Life - submit for FDA approval																				▲ 0													
(14) Noise Immune Stethoscope, (MS-C)																																	
(15) Life Support for Trauma and Transport (LSTAT) (MS-C)																																	

Schedule Detail (R4a Exhibit)

May 2009

BUDGET ACTIVITY		PE NUMBER AND TITLE						PROJECT
5 - System Development and Demonstration		0604807A - Medical Materiel/Medical Biological Defense Equipment - Eng Dev						832
<u>Schedule Detail</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>
Ventilatory Assist Device (MS-C)		2Q						
(1) Ceramic Oxygen Gen Sys (MS-C)		3Q						
(2) Rotary Valve Press Swing Oxy (MS-C)		4Q						
(3) Battery Powered Iv Fld Warm (MS-C)		4Q						
(4) Field Sterilizer (MS-B)		4Q						
(6) Ultrasonic Brain Imager (MS-C)			2Q					
(7) Freeze-dried Human Plasma - clinical lots			3Q - 4Q	1Q - 4Q				
(8)Red Blood Cell Extend Life - submit for FDA approval				2Q - 4Q				
(14) Noise Immune Stethoscope, (MS-C)		4Q						
(15) Life Support for Trauma and Transport (LSTAT) (MS-C)			4Q					
Cartledge Infuser (MS-C)	4Q							

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604807A - Medical Materiel/Medical Biological Defense Equipment - Eng Dev			PROJECT 834	
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
834 SOLDIER SYS PROT-ED	1793	1777		Continuing	Continuing

A. Mission Description and Budget Item Justification: This project funds system development and demonstration of preventive medicine materiel, to include devices and medicines, in order to provide protection, sustainment, and enhancement of the physical and psychological capabilities of Soldiers engaged in combat operations across environmental conditions. The focus is on reduction of personnel losses due to preventable disease and non-battle injuries through development of environmental and physiological performance monitors and other preventive medicine countermeasures.

In FY10, Project 834 will be consolidated into Project 832 Combat Medical Matl ED.

Major contractors/performers are Pacific Technologies, Inc, Redwood, WA; Integrated Medical Systems, Inc, Signal Hill, CA, and the U.S. Army Aeromedical Research Laboratory, Fort Rucker, AL.

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
Coliform Analyzer: In FY09, transition from project 837, performed operational testing, conduct Milestone C 4Q, and transition to Production and Deployment. Special Medical Emergency Evacuation Device (SMEED): In 4Q FY 08, conducted Milestone C and transitioned to Production and Deployment. Life Support for Trauma and Transport (LSTAT): In FY08, completed design validation testing of LSTAT-Lite. In FY09, complete development of LSTAT-Lite, produce test articles, and conduct airworthiness, operational, and environmental testing. In FY10, transition to project 832. In FY08 and FY09, conduct air worthiness testing on commercial off the shelf and non-developmental medical devices for military field use.	1793	1726	
Small Business Innovative Research/Small Business Technology Transfer Programs		51	
Total	1793	1777	

B. Other Program Funding Summary Not applicable for this item.

C. Acquisition Strategy Test and evaluate in-house and commercially developed preventative medicine materiel to meet FDA and EPA regulatory requirements.

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE								PROJECT	
5 - System Development and Demonstration			0604807A - Medical Materiel/Medical Biological Defense Equipment - Eng Dev								834	
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
No product/contract costs greater than \$1M individually			3688	853		826					5367	
Congressional Add in Support of Chem-Bio Protection			4550								4550	
Subtotal:			8238	853		826					9917	
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
No product/contract costs greater than \$1M individually			163	56		54					273	
Subtotal:			163	56		54					273	
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
No product/contract costs greater than \$1M individually			1046	302		341					1689	
Subtotal:			1046	302		341					1689	
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration			PE NUMBER AND TITLE 0604807A - Medical Materiel/Medical Biological Defense Equipment - Eng Dev							PROJECT 834	
No product/contract costs greater than \$1M individually			1792	582		556				2930	
Subtotal:			1792	582		556				2930	
Project Total Cost:			11239	1793		1777				14809	

Schedule Profile (R4 Exhibit)

May 2009

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604807A - Medical Materiel/Medical Biological Defense Equipment - Eng Dev

PROJECT
834

Event Name	FY 08				FY 09				FY 10				FY 11				FY 12				FY 13				FY 14				FY 15			
	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
Coliform Analyzer (MS C)								▲																								
Special Medical emergency Evacuation Device (SMEED) (MS-C)			MS C	▲																												

Schedule Detail (R4a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration		PE NUMBER AND TITLE 0604807A - Medical Materiel/Medical Biological Defense Equipment - Eng Dev						PROJECT 834
<u>Schedule Detail</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>
Coliform Analyzer (MS C)		4Q						
Special Medical emergency Evacuation Device (SMEED) (MS-C)	4Q							

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604807A - Medical Materiel/Medical Biological Defense Equipment - Eng Dev			PROJECT 849	
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
849 INFECDIS DRUG/VACC ED	3909	13594	13705	Continuing	Continuing

A. Mission Description and Budget Item Justification: This project funds development of candidate medical countermeasures for militarily relevant infectious diseases. These products fall within four major areas: vaccines, drugs, diagnostic kits/devices, and insect control measures to limit exposure and disease transmission. It funds research that supports conclusive human clinical trials for large-scale human efficacy testing, expanded human safety clinical trials, long-term animal studies, and related manufacturing tests. This work, which is jointly performed by military laboratories, civilian contracted pharmaceutical firms and foreign research partners, is directed toward the prevention of disease, early diagnosis, and speeding recovery once diagnosed. Medical products approved for human use must successfully complete a series of clinical trials that are required and regulated by the U.S. Food and Drug Administration (FDA). FDA approval is a mandatory obligation for all military products placed into the hands of medical providers or service members for human use. Development priority is based upon four major factors: (1) the extent of the disease within the Combatant Commands' theater of operations, (2) the clinical severity of the disease, (3) the technical maturity of the proposed solution, and (4) the affordability of the solution (development, production, and sustainment). Malaria, dysentery, hepatitis, and dengue diseases (a severe debilitating disease transmitted by mosquitoes), which are found in Africa Command, Central Command, European Command, Southern Command, and Pacific Command areas are at the top of the infectious diseases requirements list.

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
Clinical trials, developmental testing, and reviews of malarial/antimalarial vaccines, drugs, diagnostics and insect repellents: In FY08, for the Malaria Rapid Diagnostic Device (MRDD) program, Binax, Inc. (industry partner) submitted a request to the FDA for marketing approval, for an accessory kit to be used with the MRDD to comply with good laboratory practices. For Tafenoquine (anti-malarial drug), began pre-trial planning for a malaria study in humans to obtain blood samples for use with development/validation of a laboratory-based surrogate marker assay; and conducted the Combined Camouflage Face Paint/Insect Repellent (CCFP) pilot phase of the Soldier acceptability clinical trial. In FY09, for Tafenoquine, begin enrollment in a small human clinical challenge trial exposing volunteers to the malaria parasite (using current FDA-approved malaria drug mefloquine) to gather a baseline of the human body's immune responses to malaria and collect blood samples to be used in the validation of a laboratory assay to be used as a tool to determine the rate of malaria infection. For CCFP, complete the Soldier acceptability clinical study, finalize the study report, and conduct a Milestone C for transition to Production and Deployment. In FY10, for Tafenoquine, will conduct data analysis and prepare a final report on the small human challenge clinical trial, and will begin pre-trial activities for a large-scale safety/efficacy human clinical trial (treatment indication) in a malaria endemic country.	2007	2725	3891
Clinical trials, developmental testing, and appropriate reviews of grouped vaccines, drugs, and diagnostics (Leishmaniasis (a skin-based disease caused by a parasite and transmitted by sand flies), Dengue (a severe debilitating disease caused by a virus and transmitted by a mosquito), and other viral diseases): In FY08, continued monitoring industry partner's Hepatitis E vaccine effort; for the Dengue Tetravalent Vaccine (DTV), continued vaccine potency and stability testing and supported pre-trial activities in Thailand for an expanded safety and efficacy human clinical trial; and for the Paromomycin/Gentamicin Topical Antileishmanial Cream (for treatment of cutaneous (skin) leishmaniasis), began preparing the FDA licensure submission package and continued stability testing of drug lots. In FY09, for	1902	10511	9814

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT	
5 - System Development and Demonstration	0604807A - Medical Materiel/Medical Biological Defense Equipment - Eng Dev	849	
Topical Antileishmanial Cream, transition from project 808 the overseas human clinical trial activities to continue enrollment in the Tunisian large scale (> 300 subjects) pivotal human safety/efficacy treatment trial, will begin enrollment in three small (<35 subjects) pharmacokinetic (drug metabolism) human trials in France, Peru and Panama, and prepare for a second large scale (> 300 subjects) human trial in Central/South America. For Pentostam (intravenous drug treatment of skin lesions caused by the Leishmania parasite), continue medical consult and database management in support of the industry partner's FDA licensure submission efforts. For the DTV vaccine, transition from project 808 the overseas human clinical trial activities to complete enrollment and continue monitoring the expanded human safety and immunity trial in Puerto Rico, complete data analysis in the human safety and immune response trial (adults) in the U.S., complete subject follow-up for the expanded human safety and immune response trials (three trials: infant, children and adult) in Thailand, and begin preliminary data analysis, and continue pre-trial planning for an expanded safety and			
efficacy trial in children in Thailand, For Hepatitis E vaccine, continue maintenance of study blood specimens kept under cold storage and monitoring of industry partner's Hepatitis E vaccine development effort. In FY10, Topical Antileishmanial Cream, will continue subject enrollment/follow-up in the Tunisia large scale (> 300 subjects) human safety/efficacy trial and will begin the second large scale human safety/efficacy trial in Central/South America, and complete the three small scale (<35 subjects) pharmacokinetic (drug metabolism) human trials in France, Peru and Panama. For Pentostam, monitor progress of industry partner's FDA licensure submission efforts. For Dengue Tetravalent Vaccine, will complete subject follow-up and begin the data analysis on the expanded human safety and immunity trial in Puerto Rico, will complete the study report on the human safety and immune response trial (adults) in the U.S., will complete the study reports (infant, children and adult) on the expanded human safety and immune response trial in Thailand, and will complete pre-trial activities for the expanded safety and efficacy trial in children in Thailand. For Hepatitis E vaccine, continue maintenance of study blood specimens kept under cold storage and monitoring of industry partner's Hepatitis E vaccine development effort.			
Small Business Innovative Research/Small Business Technology Transfer Programs.		358	
Total	3909	13594	13705

B. Other Program Funding Summary Not applicable for this item.

C. Acquisition Strategy Test and evaluate in-house and commercially developed products in government-managed trials to meet FDA requirements and Environmental Protection Agency registration.

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
5 - System Development and Demonstration			0604807A - Medical Materiel/Medical Biological Defense Equipment - Eng Dev							849		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
No product/contract costs greater than \$1M individually			8389	1369		3399		3480		Cont.	Cont.	Cont.
Subtotal:			8389	1369		3399		3480		Cont.	Cont.	Cont.
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
No product/contract costs greater than \$1M individually			595	81		2719		2783		Cont.	Cont.	Cont.
Subtotal:			595	81		2719		2783		Cont.	Cont.	Cont.
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
No product/contract costs greater than \$1M individually			12265	1800		5030		4936		Cont.	Cont.	Cont.
Subtotal:			12265	1800		5030		4936		Cont.	Cont.	Cont.
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
No product/contract costs greater than \$1M individually			3592	659		2446		2506		Cont.	Cont.	Cont.

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604807A - Medical Materiel/Medical Biological Defense Equipment - Eng Dev						PROJECT 849		
Subtotal:	3592	659		2446		2506	Cont.	Cont.	Cont.
Project Total Cost:	24841	3909		13594		13705	Cont.	Cont.	Cont.

Schedule Profile (R4 Exhibit)

May 2009

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604807A - Medical Materiel/Medical Biological Defense Equipment - Eng Dev

PROJECT
849

Event Name	FY 08				FY 09				FY 10				FY 11				FY 12				FY 13				FY 14				FY 15			
	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
Combination Camouflage Face Paint/Insect Repellent (MS-C)					MS-C 																											

Schedule Detail (R4a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604807A - Medical Materiel/Medical Biological Defense Equipment - Eng Dev	PROJECT 849
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<u>Schedule Detail</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>
Combination Camouflage Face Paint/Insect Repellent (MS-C)		4Q						
Paromomycin/Gentamicin Topical Antileishmanial Cream (CDR)								

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604807A - Medical Materiel/Medical Biological Defense Equipment - Eng Dev			PROJECT A11	
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
A11 LSTAT MEDICAL TECHNOLOGY (CA)	3092	2392			5484

A. Mission Description and Budget Item Justification: The LSTAT is a life support piece of combat medical equipment. It is a litter with imbedded life support equipment, which is capable of sustaining an injured soldier for an extended period of time. This equipment will allow a soldier to be transported while maintaining all medical surveillance and diagnostics continually intact.

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
Congressional Add	3092	2325	
Small Business Innovative Research/Small Business Technology Transfer Program		67	
Total	3092	2392	

B. Other Program Funding Summary Not applicable for this item.

C. Acquisition Strategy Not applicable for this item.

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE								PROJECT	
5 - System Development and Demonstration			0604807A - Medical Materiel/Medical Biological Defense Equipment - Eng Dev								A11	
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
No product/contract cost greater than \$1M individually			2078	3092		2392					7562	
Subtotal:			2078	3092		2392					7562	
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:												
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:												
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:												
Project Total Cost:			2078	3092		2392					7562	

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604807A - Medical Materiel/Medical Biological Defense Equipment - Eng Dev			PROJECT CS5	
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
CS5 MED MATERIEL/MED BIO DEFENSE INITIATIVES (CA)	5217	7974			13191

A. Mission Description and Budget Item Justification: Congressional Interest Item funding for medical materiel/medical biological Defense initiatives

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
Congressional add	5217	7751	
Small Business Innovative Research/Small Business Technology Transfer program		223	
Total	5217	7974	

B. Other Program Funding Summary Not applicable for this item.

C. Acquisition Strategy Not applicable for this item.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

May 2009

BUDGET ACTIVITY	PE NUMBER AND TITLE				
5 - System Development and Demonstration	0604808A - Landmine Warfare/Barrier - Eng Dev				
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	172146	116687	82260	Continuing	Continuing
016 Close Combat Capabilities ENG DEV	88023	73755	39634	Continuing	Continuing
415 MINE NEUTRAL/DETECTION	62009	40142	42626	Continuing	Continuing
434 ANTI-PERSONNEL LANDMINE ALTERNATIVES (NSD)	19021				19021
443 APL-A (MIXED SYSTEMS)	3093	2790			5883

A. Mission Description and Budget Item Justification: This program element (PE) provides for System Development and Demonstration of networked munitions and countermine systems. This PE implements the National Landmine Policy to develop alternatives to the non-self-destructing anti-vehicle and anti-personnel landmine systems.

Project 016, Close Combat Capabilities Engineering Development, provides for the development of the anti vehicle mine replacement, the Intelligent Munitions System (IMS) supports the current force in accordance with the landmine policy.

Project 415, Mine Neutralization/Detection provides for development of the Airborne Surveillance, Target Acquisition and Minefield Detection (ASTAMIDS), Ground Standoff Mine Detection System, Future Combat System (GSTAMIDS), and the Advanced Mine Detection System (AMDS).

Project 434, Anti-Personnel Landmine Alternatives (NSD) provides for system enhancements towards addressing committee language associated with the Spider program.

Project 443, APL-A (Mixed Systems) provides for a variety of demolition efforts to include development of Magneto-Inductive Remote Activation Munition System (MI-RAMS), and for performance enhancing product improvements to demolitions, grenades, pyrotechnics and non-lethal systems.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604808A - Landmine Warfare/Barrier - Eng Dev
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<u>B. Program Change Summary</u>	FY 2008	FY 2009	FY 2010
Previous President's Budget (FY 2009)	160079	126475	62393
Current BES/President's Budget (FY 2010)	172146	116687	82260
Total Adjustments	12067	-9788	19867
Congressional Program Reductions		-12588	
Congressional Rescissions			
Congressional Increases		2800	
Reprogrammings	16458		20000
SBIR/STTR Transfer	-4391		
Adjustments to Budget Years			-133

Change Summary Explanation:

FY 2008: Funds reprogrammed to Project 415 for ASTAMIDS program from PE 0630619A - Countermine Advanced Development and from OPA line S11500 - Aerial Detection.

FY 2009 : \$12.2M Congressional decrement allocated to GSTAMIDS program (Project 415). \$2.8M Congressional increase for MI-RAMS (Project 443).

FY 2010: \$20M reprogrammed from IMS production programs; E96901 - PAA (\$10M) and B55503 OPA2 (\$10M), to RDTE - Project 016.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604808A - Landmine Warfare/Barrier - Eng Dev			PROJECT 016	
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
016 Close Combat Capabilities ENG DEV	88023	73755	39634	Continuing	Continuing

A. Mission Description and Budget Item Justification: The Scorpion - Intelligent Munitions System (IMS) is an anti-vehicular weapons system that provides highly responsive terrain-shaping and protection capabilities to the unit commander. Trained operators remotely control ground-emplaced munitions via a portable control station out to distances of 1.5 kilometers. The commander integrates the Scorpion IMS into his scheme of maneuver and fires in order to attack the enemy's freedom of maneuver while maintaining full friendly freedom of maneuver. He directs the emplacement of the munitions on the ground in building block fashion to achieve the desired effects against mounted threats ranging from single light wheeled vehicles to large armored formations. Scorpion IMS is a full spectrum weapons system effective in offensive, defensive, and stability operations. Scorpion IMS supports the National Landmine Policy by serving as a far superior alternative to the non-self-destructing anti-vehicular mines being removed from the U.S Inventory by 31st December 2010.

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
FY08-FY11: Complete IMS/Scorpion Increment-I system development.	69194	21884	5723
FY08-FY11 Fabricate hardware for Government Qualification testing		14150	12211
FY08-FY10: Continues to conduct IMS/Scorpion Increment-I modeling and simulation.	1360	7180	1271
FY08-FY10: Conduct IMS/Scorpion Increment-I system contractor development testing.	17469	16967	
FY08-FY11: Conduct IMS/Scorpion Increment-I Government Development and Operational Testing. .		7775	15588
FY09-13 Develop IMS Trainer in coordination with PEO STRI		3734	4841
Small Business Innovative Research/Small Business Technology Transfer Programs		2065	
Total	88023	73755	39634

<u>B. Other Program Funding Summary</u>	FY 2008	FY 2009	FY 2010	To Compl	Total Cost
PAA E96901 - Intelligent Munitions System			20000	Continuing	Continuing
OPA2 B55503 - Intelligent Munitions System (IMS) Remote Control Unit			10000	Continuing	Continuing

Comment:

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY

5 - System Development and Demonstration

PE NUMBER AND TITLE

0604808A - Landmine Warfare/Barrier - Eng Dev

PROJECT

016

C. Acquisition Strategy The Scorpion IMS is being developed as an evolutionary acquisition program utilizing an incremental approach. This strategy will address all IMS Scorpion capabilities in the requirements document. The first increment supports National Landmine Policy and provides full spectrum weapons system effectiveness in offensive, defensive, and stability operations. In June 2006, a competitive Engineering and Manufacturing Development (EMD) Contract was awarded to Textron Defense Systems of Wilmington, MA. This contract has two Low Rate Initial Production (LRIP) Options which will be exercised in FY10 and FY11. Increment I will serve as the baseline design for the follow-on increments and enabling technology development will be conducted to ensure all requirements can be rapidly achieved with the follow-on increments at the lowest cost possible. Increment II will provide a networked munitions reload capability, enhanced sensors in urban and complex terrain, integration of the JTRS radio when it becomes available, integrated day and night imager, non-lethal anti-personnel layered lethality dispensers and non-lethal anti-vehicle munitions.

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
5 - System Development and Demonstration			0604808A - Landmine Warfare/Barrier - Eng Dev							016		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
IMS System Development & Demonstration	C-CPIF	Textron Defense System Corp., Wilmington, MA	91555	73900	2Q	54000	1Q	22218	1Q	Cont.	Cont.	
IMS Increment 2 System Dev & Demonstration	C-CPIF	Textron Defense System Corp., Wilmington, MA									7740	
IMS - MITRE provide C4 support		MITRE, McLean, VA	3191	805	1Q	700	1Q	300	1Q	Cont.	Cont.	
Subtotal:			94746	74705		54700		22518		Cont.	Cont.	
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
IMS Engineering Support	MIPR	ARDEC Picatinny Arsenal, NJ	17931	5806	1Q	5500	1-2Q	3776	1-2Q	Cont.	Cont.	
Modelling and Simulation	MIPR	NVESD Ft Belvoir VA		500	1Q	600	1-2Q	250	1-2Q	Cont.	Cont.	
C4ISR and IA		CECOM, Ft Monmouth NJ		519	1Q	350	1-2Q	150	1-2Q	Cont.	Cont.	
Simple Key Loader (SKL)	MIPR	PEO C3T, Ft Monmouth NJ		200	3Q	450	1-2Q			Cont.	Cont.	
IMS Engineering Support	MIPR	Various	7883	179	1-2Q	300	1-2Q	314	1-2Q	Cont.	Cont.	
IMS - PM HMS	MIPR	Fort Monmouth, NJ	4144								4144	
PEO STRI	MIPR	Orlando FL				200	1-2Q	150	1-2Q		500	
Subtotal:			29958	7204		7400		4640		Cont.	Cont.	
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract

ARMY RDT&E COST ANALYSIS (R3)										May 2009		
BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
5 - System Development and Demonstration			0604808A - Landmine Warfare/Barrier - Eng Dev							016		
IMS	MIPR	Various	2718	1272	1-2Q	613	1-2Q	715	1-2Q	Cont.	Cont.	
SLAD, AMSAA, AEC, DTC, ERDEC	MIPR	SLAD, AMSAA, AEC, DTC, ERDEC	1014	1855	2Q	1023	1-2Q	3500	1-2Q	Cont.	Cont.	
DT-G & Live Fire	MIPR	Yuma Proving Grounds AZ				2400		2811	1-2Q			5211
Various testing	MIPR	White Sands Missile Range. MN		575	2Q	935	1-4Q	2175	1-4Q			3685
Operational Test	MIPR	OTC				742		1300				2042
DTC	MIPR	Aberdeen Proving Grounds MD		255								3555
Arena Frag Testing	MIPR	ARDEC, Picatinny NJ				1200						1200
Subtotal:			3732	3957		6913		10501		Cont.	Cont.	
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
IMS	In-House	PM CCS, Picatinny Arsenal, NJ	6495	712	1-4Q	1398	1-4Q	1000	1-4Q	Cont.	Cont.	
IMS	T.O. Contract	Robbins-Goia, Alexandria, VA	2098	405	2Q	450	2Q	400	2Q	Cont.	Cont.	
IMS	T.O. Contract	BRTRC, Alexandria, VA	1084	540	2Q	450	2Q	400	2Q	Cont.	Cont.	
IMS TSM Spt	T.O. Contract	MTS, Alexandria VA		500	1Q	305	1-2Q	100				905
LCCE	T.O. Contract	Tecolote, Fort Monmouth, NJ				75		75				150
SBIR/STTR						2064						2064
Subtotal:			9677	2157		4742		1975		Cont.	Cont.	
Project Total Cost:			138113	88023		73755		39634		Cont.	Cont.	

Schedule Profile (R4 Exhibit)

May 2009

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604808A - Landmine Warfare/Barrier - Eng Dev

PROJECT
016

Event Name	FY 08				FY 09				FY 10				FY 11				FY 12				FY 13				FY 14				FY 15			
	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
INCREMENT I IMS	[Gantt Bar]																															
(1) User Jury II	[Timeline Area]																															
(2) User Jury III	[Timeline Area]																															
Pre-System Verification Test	[Timeline Area]																															
System Verification Test	[Timeline Area]																															
(3) IMS Critical Design Review (CDR)	[Timeline Area]																															
Risk Reduction Testing	[Timeline Area]																															
Software Build	[Timeline Area]																															
Government Development Testing	[Timeline Area]																															
Limited User Test	[Timeline Area]																															
Urban Testing	[Timeline Area]																															
(4) LRIP Facilitization Decision	[Timeline Area]																															
(5) LRIP 1 Contract Award	[Timeline Area]																															
(6) IMS Milestone C	[Timeline Area]																															

Schedule Detail (R4a Exhibit)

May 2009

BUDGET ACTIVITY		PE NUMBER AND TITLE						PROJECT	
5 - System Development and Demonstration		0604808A - Landmine Warfare/Barrier - Eng Dev						016	
<u>Schedule Detail</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	
INCREMENT I IMS	1Q - 4Q	1Q - 4Q	1Q - 4Q						
User Jury II	2Q								
User Jury III		2Q							
Pre-System Verification Test	3Q - 4Q	1Q - 2Q							
System Verification Test		2Q							
IMS Critical Design Review (CDR)		3Q							
Risk Reduction Testing		3Q							
Software Build	1Q - 4Q	1Q - 3Q							
Government Development Testing		4Q	1Q - 3Q						
Limited User Test			3Q						
Urban Testing			1Q - 2Q						
LRIP Facilitization Decision			1Q						
LRIP 1 Contract Award			2Q						
IMS Milestone C			4Q						
First Unit Equipped				1Q					
IMS Initial Operational Capability				4Q					
LRIP 2 Contract Awd				2Q					
IOT&E				3Q					
Full Rate Production Decision					2Q				
INCREMENT II IMS				1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q		
Milestone B				1Q					
Milestone C							1Q		
Initial Operational Capability								3Q	

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604808A - Landmine Warfare/Barrier - Eng Dev			PROJECT 415	
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
415 MINE NEUTRAL/DETECTION	62009	40142	42626	Continuing	Continuing

A. Mission Description and Budget Item Justification: This project provides System Development and Demonstration (SDD) for the Airborne Surveillance, Target Acquisition, and Minefield Detection System (ASTAMIDS), and Ground Standoff Mine Detection System (GSTAMIDS).
 The ASTAMIDS uses Multi-Spectral Imaging (MSI) and visible/Near Infrared sensor mounted on a Future Combat System Brigade Combat Team (BCT) Unmanned Aerial Vehicle to detect and locate combat targets and to detect minefields and obstacles that are impediments to maneuver forces. ASTAMIDS can be used in tactical operations day and night, to detect surface emplaced and recently buried minefields and obstacles. ASTAMIDS can also recognize and identify combat targets and designate them for laser guided munitions.

GSTAMIDS shall provide ground countermine capabilities to the Future Engineer Force. At Milestone B, GSTAMIDS was intended to meet FCS countermine requirements, since then individual technologies have been extracted to support the Army's modular BCT structure. GSTAMIDS will support the current and Future Engineer Force with on-route mine detection, mine and temporary lane marking, precision mine neutralization and interfaces with host platforms Command, Control, Communications, and Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) capabilities.

ASTAMIDS and GSTAMIDS are both Tier One Complementary programs and have been identified in FCS Spinouts 2 & 3 respectively as part of the Army's initiative to spiral future capabilities to the current force. ASTAMIDS Operational Testing (OT) is currently intended to be conducted by FCS with ASTAMIDS mounted on, and fully integrated with the FCS Class IV UAS, other non-FCS platforms have been identified to support the Modular BCTs with the same capability. GSTAMIDS Developmental Testing/Operational Testing (DT/OT) is intended to be a system level test conducted by FCS. Extracted capabilities are being tested on the Husky Mine Detection Vehicle and other experimental platforms.

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
FY08: ASTAMIDS - Complete Sprial I prototype fabrication	5843		
FY08: ASTAMIDS - Conduct system fluiht testing	5000		
FY08: ASTAMIDS - Completes Spiral 2 Prototype Fabrication /Delivery AP #3, #4	3500		
FY08: ASTAMIDS - Initiates Spiral 3 Component Fabrication	4805		
FY08: ASTAMIDS - Initiates Spiral 3 Gimbal/Prototype Fabrication	5000		
FY08: ASTAMIDS - Completes Test Readiness Review (TRR)	3500		
FY08: ASTAMIDS - Completes Contractor DT Testing	5682		
FY08: ASTAMIDS - Delivery of AP PROTOTYPES #1, #2	3000		
FY09: ASTAMIDS - Completes Critical Design Review.		6904	

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT	
5 - System Development and Demonstration	0604808A - Landmine Warfare/Barrier - Eng Dev	415	
FY09-FY10: ASTAMIDS - Initiates Spiral 3 Gimbal/Prototype Fabrication		4700	4000
FY09-FY10: ASTAMIDS - Complete Spiral 3 Prototype Fabrication AP#5, #6, #7		7852	2000
FY09: ASTAMIDS - Deliver Spriral 2 & 3 Prototypes for FCS Integration/Test		2200	2000
FY09: ASTAMIDS - Complete all SDD Contract Data Deliverables		1500	750
FY09-FY10: ASTAMIDS - Prepare MS C IPR Package		2000	1500
FY09-FY10: ASTAMIDS - Prepare LRIP Procurement Package		1000	750
FY10: ASTAMIDS Support to FCS Integration / Test			1100
FY10: ASTAMIDS Algorithm Detection Enhancement Development			700
FY10: ASTAMIDS Algorithm False Alarm Reduction Development			900
FY10: ASTAMIDS Change Detection Algorithm Development			3163
FY10: ASTAMIDS Next Generation Workstation Development			2540
FY08: GSTAMIDS - Complete computer s/w and hardware, deliver initial emulator hardware and s/w	3322		
FY08: GSTAMIDS - Complete build and test of Lane Marking subsystem final prototype	3439		
FY08: GSTAMIDS - Complete build and test of scanning sensor final prototype and deployment mechanism	6266		
FY08: GSTAMIDS - Complete neutralizer munition design, neutralizer magazine and deliver mechanism design	8867		
FY08 - GSTAMIDS - Complete critical design review and final prototype development and testing	3785		
FY09 - GSTAMIDS FCS - Continue development of the Mine Neutralization Subsystem		3750	
FY09 - GSTAMIDS - Complete integration and testing of the Mine Detection Subsystem		1850	
FY09 - GSTAMIDS - Complete integration and testing of the Lane Marking subsystem		3300	
FY09 - GSTAMIDS - Complete Integration and testing of the GSTAMIDS Computer Subsystem		2950	
FY09 - GSTAMIDS - Complete Test Review for Final Prototype and conduct Contractor Verification Testing in the Systems Integration Laboratory and on the Surrogate Test Vehicle.		1103	
FY10: GSTAMIDS Product Development			15658
FY10: GSTAMIDS Program Support			3828
FY10: GSTAMIDS Test and Evaluation			1084
FY10: GSTAMIDS Program Management			2653
Small Business Innovative Research/Small Business Technology Transfer Programs		1033	
Total	62009	40142	42626

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration		PE NUMBER AND TITLE 0604808A - Landmine Warfare/Barrier - Eng Dev			PROJECT 415
<u>B. Other Program Funding Summary</u>	FY 2008	FY 2009	FY 2010	To Compl	Total Cost
PE 0603619A, Project 606, Countermine/Barrier Advanced Dev	19120	14186	17821	Continuing	Continuing
OPA 3, R68102, GSTAMIDS / Interim capability	62590	46783	62044	Continuing	Continuing
OPA 3, S11500 ASTAMIDS		12773	11200	Continuing	Continuing

Comment:

C. Acquisition Strategy The ASTAMIDS competitively selected Prime System contractor was awarded Cost Plus Incentive Fee (CPIF) System Development and Demonstration (SDD) in FY03 after MDA Milestone B approval. Milestone C is scheduled for FY 2010.

GSTAMIDS entered the SDD Phase in June 2004 with MDA approval of MS B and competitively awarded a SDD Cost Plus Fixed Fee (CPFF) contract. Milestone C is scheduled for 2Q /3QFY2013, in conjunction with FCS Mule-C. Production will be initiated/executed via noncompetitive contract.

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
5 - System Development and Demonstration			0604808A - Landmine Warfare/Barrier - Eng Dev							415		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
GSTAMIDS	C-CPFF	BAE Systems, Austin, TX	68470	19958	1Q	9000		16610	1Q	Cont.	Cont.	Cont.
ASTAMIDS	C-CPIF	Northrup Grumman	49740	32281		20499		14500	1Q	Cont.	Cont.	Cont.
Subtotal:			118210	52239		29499		31110		Cont.	Cont.	Cont.
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
GSTAMIDS	MIPR	Various OGAs	2763	1582	1Q	980	1Q	1510	1Q	Cont.	Cont.	
GSTAMIDS Engineering Support	MIPR	NVESD/CECOM, Ft Belvoir, VA	5469	1959	1Q	1473	1Q	1692	1Q	Cont.	Cont.	
GSTAMIDS Support	Task Orders	Various Contractors	970	360	1Q	300	1Q	375	1Q	Cont.	Cont.	
ASTAMIDS Engineering Support	MIPR	NVESD/CECOM, Fort Belvoir, VA	4082	1425	1Q	1363	1Q	2043	1Q	Cont.	Cont.	
ASTAMIDS Support	Various	Various	283	171	1Q	120	1Q	1500	1Q	Cont.	Cont.	
Subtotal:			13567	5497		4236		7120		Cont.	Cont.	
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
GSTAMIDS Test Support	MIPR	ATEC, Alexandria, VA	1749	250	2Q	93		935		Cont.	Cont.	
ASTAMIDS	MIPR	ATEC, Alexandria, VA	2300	434	2Q	2874		250		Cont.	Cont.	
Subtotal:			4049	684		2967		1185		Cont.	Cont.	

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604808A - Landmine Warfare/Barrier - Eng Dev

PROJECT
415

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Program management	In-House	PM-CCS, Picatinny Arsenal, NJ	3516	1680	1-4Q	641	1Q	1553		Cont.	Cont.	
Program management Contractor support	Task Order	USFALCON	5650	1909		1766	1-4Q	1658		Cont.	Cont.	
SIBR/STTR						1033					1033	
Subtotal:			9166	3589		3440		3211		Cont.	Cont.	
Project Total Cost:			144992	62009		40142		42626		Cont.	Cont.	Cont.

Schedule Profile (R4 Exhibit)

May 2009

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604808A - Landmine Warfare/Barrier - Eng Dev

PROJECT
415

Event Name	FY 08				FY 09				FY 10				FY 11				FY 12				FY 13				FY 14				FY 15			
	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
GSTAMIDS																																
(1) Critical Design Review - Detection and Marking																																
(2) Preliminary Design Review - Neutralization																																
(3) Critical Design Review - Neutralization																																
(4) Test Readiness Review																																
Contracting Testing																																
(5) Delivery of Prototype to LSI																																
ASTAMIDS																																
(6) Test Readiness Review																																
(7) Critical Design Review																																
(8) Milestone C/LRIP																																

Schedule Detail (R4a Exhibit)

May 2009

BUDGET ACTIVITY		PE NUMBER AND TITLE						PROJECT	
5 - System Development and Demonstration		0604808A - Landmine Warfare/Barrier - Eng Dev						415	
<u>Schedule Detail</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	
GSTAMIDS									
Milestone B									
Preliminary Design Review - Detection and Marking									
Critical Design Review - Detection and Marking	3Q								
Preliminary Design Review - Neutralization		4Q							
Critical Design Review - Neutralization			1Q						
Test Readiness Review		3Q							
Contracting Testing		4Q	1Q - 4Q						
Delivery of Prototype to LSI				1Q					
Integration and Testing on FCS Platform				1Q - 4Q	1Q - 4Q	1Q			
Milestone C (Coincides w/ Mule-C MS C)						2Q			
ASTAMIDS									
Milestone B									
Preliminary Design Review									
Test Readiness Review				1Q					
Critical Design Review			2Q						
Milestone C/LRIP			4Q						
Integration and Testing on FCS Platform			3Q - 4Q	1Q - 2Q					
Full Rate Production Decision			2Q						
AMDS									
Milestone B					4Q				
Preliminary Design Review						1Q			
Test Readiness Review						2Q			
Critical Design Review						3Q			

Contractor Testing							2Q	
Operational Testing							3Q	
Milestone C								

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration		PE NUMBER AND TITLE 0604808A - Landmine Warfare/Barrier - Eng Dev			PROJECT 434
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
434 ANTI-PERSONNEL LANDMINE ALTERNATIVES (NSD)	19021				19021

A. Mission Description and Budget Item Justification: The Spider system's mission is to develop alternative systems for current Non Self-Destruct (NSD) Anti-Personnel Landmines (APL's). This mission was articulated in the Presidential Decision Directives (PDD's) 48, 54 and 64 and reiterated in the New Landmine Policy announced by the State Department on 27 Feb 04.

The Spider is a hand emplaced, remotely controlled, anti-personnel munition system. The system is made up of 4 subsystems: Man-in-the-Loop (the human operator), Remote Control Station (the system command and control station), Repeater (a communication link to the munitions that provides extended range), and Munition Control Units (delivers anti-personnel effects). Missions include force protection, shaping the battlefield, provide warning, delay enemy forces and attrit enemy forces. The Spider is designed to mitigate the indiscriminate engagement of the lethal mechanism. A Soldier/Marine makes a conscious decision to engage a target with the lethal mechanism. The envisioned obstacle can be either a permanent obstacle, such as the Korean Barrier System (KBS), or a temporary obstacle intended to be reused in other locations, such as forward airbases. FY2008 funding will be used to develop a long range standoff capability as directed by Congress.

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
Spider extended range product development	17030		
Perform engineering support, modeling and simulation.	1504		
Government test and evaluation facility and facility support activities.	200		
Program management and support	287		
Total	19021		

<u>B. Other Program Funding Summary</u>	FY 2008	FY 2009	FY 2010	To Compl	Total Cost
PAA E91700 - Spider networked Munition System	51525	51847	56387		159759
OPA2 B55501 - SPIDER Anti-Personnel Landmine Alternatives (APLA) Remote Control Unit		17947	21820		39767

Comment:

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY

5 - System Development and Demonstration

PE NUMBER AND TITLE

0604808A - Landmine Warfare/Barrier - Eng Dev

PROJECT

434

C. Acquisition Strategy USD(AT&L)) approved the NSD-A plan to have Alliant Tech Systems and Textron Systems Corporation form a joint venture for the System Development & Demonstration (SDD) efforts of this program. A competitive SDD contract was awarded in September 2002. Spider was Type Classified - Limited Production in June 2006.

Initial production contracts have been awarded non-competatively to the developing contractors.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604808A - Landmine Warfare/Barrier - Eng Dev			PROJECT 443	
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
443 APL-A (MIXED SYSTEMS)	3093	2790			5883

A. Mission Description and Budget Item Justification: This project was to provide alternatives to the anti-personnel submunitions used within mixed anti-tank (AT)/anti-personnel (AP)munition systems or the entire mixed AT/AP system. Alternative Beginning in FY 05, funding for this effort has transitioned to Project 016 within this Program Element.
This line subsequently has been used for Congressional Adds for the Magneto Induction - Remote Activated Munition System (MI-RAMS) .

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
MI RAMS Development and prototype assembly	851	2025	
Provide general engineering support.	1772	645	
Test and Evaluation	292		
Program Management Support	178	120	
Total	3093	2790	

<u>B. Other Program Funding Summary</u>	FY 2008	FY 2009	FY 2010	To Compl	Total Cost
MA9200 Explosive Ordnance Disposal Equipment	3200				3200

Comment: Congressional Add in FY2008 to Other Production, Army line

C. Acquisition Strategy The Magneto Induction - Remote Activated Munition System (MI-RAMS) program has been a Congressionally funded program. The acquisition has been sole source to Ultra Electronics, Magnito Induction Systems.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration		PE NUMBER AND TITLE 0604814A - Artillery Munitions - EMD			
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
708 XM982 PROJECTILE	62490	79134	42452	Continuing	Continuing

A. Mission Description and Budget Item Justification: Excalibur provides improved fire support through a Precision Guided Extended Range family of munitions with greatly increased accuracy and offer significant reduction in collateral damage in most of all urban environments. The Excalibur will be interoperable with the M777A2 Lightweight 155mm howitzer (LW155), the M109A6 (Paladin) howitzer, and the Future Combat System (FCS) Non-Line of Sight Cannon (NLOS-C). Excalibur will provide a 33% range increase over current Rocket Assisted Projectiles, with a 10 meter accuracy (Circular Error Probable) at all ranges. Excalibur is an international program, teamed with the Kingdom of Sweden (KoS), who contributes resources towards the development in accordance with an established Project Agreement.

The Excalibur program is using an incremental development approach to provide a combat capability to the Soldier as quickly as possible, and to deliver advanced capabilities and lower costs as technology matures. Increment Ia-1 has been fielded to units in Iraq and Afghanistan in response to urgent need requests in support of Operation Iraqi Freedom and Enduring Freedom. Production deliveries continue to support the Warfighters. Increment Ia-2 will be delivered in FY10 and will greatly increase range to LW155, Paladin and FCS Cannon forces Army-wide. Increment Ib is a follow on Artillery Precision development effort which will provide further performance improvements while significantly lowering unit costs.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

May 2009

BUDGET ACTIVITY	PE NUMBER AND TITLE		
5 - System Development and Demonstration	0604814A - Artillery Munitions - EMD		
<u>B. Program Change Summary</u>	FY 2008	FY 2009	FY 2010
Previous President's Budget (FY 2009)	64214	78197	43313
Current BES/President's Budget (FY 2010)	62490	79134	42452
Total Adjustments	-1724	937	-861
Congressional Program Reductions		-263	
Congressional Rescissions			
Congressional Increases		1200	
Reprogrammings	20		
SBIR/STTR Transfer	-1744		
Adjustments to Budget Years			-861

Change Summary Explanation:

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration		PE NUMBER AND TITLE 0604814A - Artillery Munitions - EMD			PROJECT 708	
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost	
708 XM982 PROJECTILE	62490	79134	42452	Continuing	Continuing	

A. Mission Description and Budget Item Justification: Excalibur provides improved fire support through a Precision Guided Extended Range family of munitions with greatly increased accuracy and offer significant reduction in collateral damage in most of all urban environments. The Excalibur will be interoperable with the M777A2 Lightweight 155mm howitzer (LW155), the M109A6 (Paladin) howitzer, and the Future Combat System (FCS) Non-Line of Sight Cannon (NLOS-C). Excalibur will provide a 33% range increase over current Rocket Assisted Projectiles, with a 10 meter accuracy (Circular Error Probable) at all ranges. Excalibur is an international program, teamed with the Kingdom of Sweden (KoS), who contributes resources towards the development in accordance with an established Project Agreement.

The Excalibur program is using an incremental development approach to provide a combat capability to the Soldier as quickly as possible, and to deliver advanced capabilities and lower costs as technology matures. Increment Ia-1 has been fielded to units in Iraq and Afghanistan in response to urgent need requests in support of Operation Iraqi Freedom and Enduring Freedom. Production deliveries continue to support the Warfighters. Increment Ia-2 will be delivered in FY10 and will greatly increase range to LW155, Paladin and FCS Cannon forces Army-wide. Increment Ib is a follow on Artillery Precision development effort which will provide further performance improvements while significantly lowering unit costs.

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
Complete airframe structure, warhead, guidance, systems and procure and test projectiles for system level qualification testing for Increment Ia qualification.	16655		
Conduct Systems and Specialty Engineering activities to include specification development, Cost As Independent Variable (CAIV), program metric tracking, and conduct modeling of lethality, effectiveness, and aeroballistics, and reliability.	11872	13156	1300
Procure development test hardware and conduct test and evaluation.	4806	4024	
Engineering support for Excalibur platform integration to include development and qualification of the Enhanced Platform Integration Kit and Portable Inductive Artillery Fuze Setter (EPIAFS), Portable Excalibur Fire Control System (PEFCS), Advanced Field Artillery Tactical Direction System (AFATDS), and digital howitzer integration.	750	550	300
Conduct Independent Operational Test & Evaluation (IOT&E) efforts for Increment Ia.	461	4296	
Initiate and implement Increment Ib the follow on Artillery Development effort.	26400	49884	36282
Procure development test hardware and conduct test and evaluation for Increment Ib development.		3900	4570
Advanced Cargo Projectile Technology (Congressional add not associated with Excalibur).	1546	1163	
Small Business Innovative Research/Small Business Technology Transfer Programs.		2161	
Total	62490	79134	42452

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration		PE NUMBER AND TITLE 0604814A - Artillery Munitions - EMD			PROJECT 708	
<u>B. Other Program Funding Summary</u>		FY 2008	FY 2009	FY 2010	To Compl	Total Cost
Procurement Ammunition Army: Proj 155mm Extended Range: XM982-U Excalibur: E80103		47456	69119	98292	1262052	1476919
OPA2: Enhanced Portable Inductive Fuze Setter (E-PIAFS): AD3260		7601	2571	3078		13250

Comment: Prior FYs 2005 - 2007 not included in the total Procurement Ammunition Army (PAA): Projectile 155mm Extended Range, XM982-U Excalibur, E80103 cost.

C. Acquisition Strategy Excalibur is a family of Precision Guided Extended Range Munitions. A competitive source selection awarded an Engineering and Manufacturing Development (E&MD) contract for the initial increment, with options for the other increment's development and all Low Rate Initial Production (LRIP) quantities. In coordination with the Defense Acquisition Executive, the Army implemented an incremental development process that provided for an early fielding capability in FY07 in response to an Urgent Needs Statement. The Product Manager's Office is currently managing a contract for the Increment Ia LRIP. Increment Ib was solicited as a full and open competition and awarded to two contractors. Increment Ib strategy is to conduct a demonstration phase followed by a shoot off and down select to a single contractor for qualification and production.

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
5 - System Development and Demonstration			0604814A - Artillery Munitions - EMD							708		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Excalibur Increment Ia Development	C/CPIF	Raytheon Missile System, Tucson, AZ	417390	12857	2-4Q						430247	
Fee on Excalibur Development Contract	N/A	Raytheon Missile System, Tucson, AZ	35379								35379	
TCM Merger Assessment	FP	Bofors Defence, Karlskoga, Sweden	14430								14430	
Platform Integration-Systems Contractor	MIPR	ARES, Annapolis, MD	720	120	3Q	120	3Q			Cont.	Cont.	
Misc Support Contracts	Various	Various	2466	624	1-2Q	200	1-2Q	300	2-3Q	Cont.	Cont.	
Platform Integration/Fire Control - AFATDS	SS/CPIF	Raytheon AFATDS, Ft Wayne, IN	4945			250	1-2Q	150	1-2Q	Cont.	Cont.	
Platform Integration Firing Tables Development	MIPR	ARDEC, Firing Tables Branch, Picatinny, NJ/Aberdeen, MD	1974	150	1Q	150	1Q	150	1Q	Cont.	Cont.	
Platform Integration LW155 M777A2	C/CPIF	BAE, Burlington Vt.	11989								11989	
SS-SFM Test Projectiles	C/FFP	Various	10815								10815	
Increment Ib Development	Various	ARDEC, Picatinny, NJ		21000	2-4Q	46058	1-4Q	29660	1-4Q	Cont.	Cont.	
Govt IPT Support Platform Integration Development	MIPR	ARDEC, Picatinny, NJ	6550	225	1-4Q	500	1-4Q	200	1-4Q	Cont.	Cont.	
Platform Integration & EPIAFS Software Development	MIPR	Navy, Surface Warfare Center, MD	230								230	
Follow on Precision Artillery risk reduction	C/CPFF	Picatinny, NJ	3234			1827	2Q				5061	
ARDEC fuze technology maturation	DOTC	Picatinny, NJ		2500	2Q						2500	
Advanced Cargo Projectile Technology	MIPR	DMEA, McClellan, CA		1396	4Q	1013	2Q				2409	
Subtotal:			510122	38872		50118		30460		Cont.	Cont.	

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604814A - Artillery Munitions - EMD

PROJECT
708

II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Program Management	In House	PM Excalibur , Picatinny, NJ	24070	1103	1-4Q	1380	1-4Q	1538	1-4Q	Cont.	Cont.	
Government IPT Support-Excalibur XM982	MIPR	ARDEC, Picatinny, NJ	54039	4794	1-4Q	5700	1-4Q	4000	1-4Q	Cont.	Cont.	
Government TCM Support	MIPR	ARDEC, Picatinny, NJ	910								910	
Government Support- Ft Sill	MIPR	Ft. Sill, OK	3409	315	1-2Q	370	1-2Q	150	1-2Q	Cont.	Cont.	
Paladin Platform Integration	MIPR	PM Paladin Picatinny, NJ	930								930	
Modeling and Structural Development	MIPR	Army Research Labs, Adelphi, MD	7174	1860	1-4Q	250	1-4Q	100	1-4Q	Cont.	Cont.	
Govt IPT Support Platform Integration	MIPR	ARDEC, Picatinny, NJ	6041	200	1-4Q	120	1-4Q	120	1-4Q	Cont.	Cont.	
Milestone Support	SS/FP	Camber, Alexandria, VA	1540			250	1-4Q	200	1-4Q	Cont.	Cont.	
Technical Spt Contract for Platform Integration	SS/FP	Camber, Dallas, TX	821								821	
Fire Control development support	MIPR	Ft Monmouth, NJ/Ft Sill, OK	1008								1008	
Miscellaneous Support	MIPR	Various	3850	300	1-4Q	958	1-4Q	1284	1-4Q		6392	
Platform Integration Software Support	MIPR	Navy Surface Warfare Center, MD	390								390	
PM CAS SS-SFM	In-House	PM CAS, Picatinny, NJ	700								700	
Government IPT Support - SS-SFM	MIPR	ARDEC, Picatinny, NJ	1625								1625	
Increment Ia Engineering Services	C/CPFF	DRS, Eatontown, NJ	5784	8566	1-4Q						14350	
Increment Ia Engineering Services	TBS	TBS				2500	3-4Q				2500	
Government IPT Support-Advanced Cargo Projectile Technology	MIPR	ARDEC, Picatinny NJ		150	2-4Q	150	1-4Q				300	
Subtotal:			112291	17288		11678		7392		Cont.	Cont.	

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604814A - Artillery Munitions - EMD

PROJECT
708

III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
TECOM Test Range	MIPR	YPG, Yuma, AZ	18493	1350	1-4Q	3285	1-4Q	2150	1-4Q	Cont.	Cont.	
Test Instrumentation and Analysis	MIPR	Army Research Labs, Adelphi, MD	3377	150	1-4Q	250	1-4Q	250	1-4Q		4027	
Telemetry Support	SS/FF	Physical Science Laboratories (PSL), Las Cruces, NM	2546	450	2Q	450	2Q	400	2Q	Cont.	Cont.	
Telemetry Support	MIPR	ARDEC, Picatinny, NJ	17061	1161	1-4Q	500	1-4Q	500	1-4Q	Cont.	Cont.	
Telemetry Cryptographic Support & Anti-Jam Support	MIPR	Ft. Huachuca, AZ	223	332	2-3Q	171	2-3Q	200	2-3Q	Cont.	Cont.	
Tri-Service Software Assessment	MIPR	OSD, Wash, DC	61								61	
Operational Test Support & AEC	MIPR	ATEC, Alexandria, VA	8671	148	1-4Q	204	1-4Q	120	1-4Q	Cont.	Cont.	
Target Replacement, Definition, Maintenance and Repair and Threat Assessment	MIPR	Target Management Office, Huntsville, AL.	1250			300	1-2Q	330	1-2Q	Cont.	Cont.	
ARDEC Testing	MIPR	ARDEC, Picatinny, NJ	1865	489	1-4Q	1300	1-4Q	250	1-4Q	Cont.	Cont.	
Test Gun Equipment	MIPR	Watervliet Arsenal, NY	3972								3972	
SS-SFM Testing	MIPR	Yuma Proving Grounds, Yuma, AZ	2300								2300	
Live Fire Test and Evaluation	MIPR	ARL, Aberdeen, MD	296	200	1-4Q						496	
TECOM Test Range	MIPR	White Sands Missile Range, NM	1032	1389	2-4Q	4591	2-4Q			Cont.	Cont.	
Test Hardware	SS/CPFF	SAVIT, Parsippany, NJ	250	200	2-3Q	200	2-4Q	200	2-4Q	Cont.	Cont.	
Operational Test Support	MIPR	Ft. Sill, Ok		461	1-2Q	3926	2-4Q	200	1-3Q		4587	
Subtotal:			61397	6330		15177		4600		Cont.	Cont.	

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
5 - System Development and Demonstration			0604814A - Artillery Munitions - EMD							708		
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
SBIR/STTR						2161					2161	
Subtotal:						2161					2161	
Project Total Cost:			683810	62490		79134		42452		Cont.	Cont.	

Schedule Detail (R4a Exhibit)

May 2009

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604814A - Artillery Munitions - EMD

PROJECT
708

<u>Schedule Detail</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>
Increment Ia-1 Prod. Deliveries	1Q - 4Q	1Q - 4Q	1Q - 4Q					
Increment Ia-2 SDD	1Q							
LRIP Ia-2 Award	3Q							
Guided Gunfire Demo-C	4Q	1Q						
Increment Ia-2 IOT&E		4Q	1Q					
Increment Ia-2 IOC			4Q					
Increment Ia-2 Prod. Deliveries		4Q	1Q - 4Q					
Increment Ib development	4Q	1Q - 4Q	1Q - 4Q					

Termination Liability Funding For Major Defense Acquisition Programs, RDT&E Funding (R5)			May 2009
BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604814A - Artillery Munitions - EMD	PROJECT 708	
Funding in \$000			
Program	FY 2008	FY 2009	FY 2010
XM982 Excalibur		16830	19760
Total Termination Liability Funding:		16830	19760
<p>Remarks: Increment Ia XM982 Excalibur Engineering and Manufacturing Development (EMD) contract completed. Increment Ib EMD contract awarded September 2008 as a Firm Fixed Price.</p>			

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604817A - Combat Identification				
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
482 Ground Combat Identification	10866	10873	20070		41809

A. Mission Description and Budget Item Justification: Combat Identification (CID) is a system to maximize overall combat effectiveness by minimizing and mitigating incidents of fratricide and maximizing the situational understanding of the trigger puller across a broad spectrum of Joint and Coalition vehicles. This is achieved by rapid, reliable identification of friends, enemies/foes, and neutrals in the Joint and Coalition battle space. Joint Cooperative Target ID-Ground (JCTI-G) supports the development of mounted ground-to-ground (G-G) CID solutions for the current force, while insuring interoperability with the Future Combat System (FCS) and air-to-ground (A-G) solutions, which is an Army's gap for CID. The plan is to assess the most cost effective solution for air-to-ground CID.

FY10 supports JCTI-G efforts for A-G and G-G. Efforts include preparation for Post MDD acquisition planning for solicitation and entry into TD/EMD phase developmental contracts for G-G and implementation of an A-G capability with US Army air platforms.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

May 2009

BUDGET ACTIVITY	PE NUMBER AND TITLE		
5 - System Development and Demonstration	0604817A - Combat Identification		
<u>B. Program Change Summary</u>	FY 2008	FY 2009	FY 2010
Previous President's Budget (FY 2009)	11290	10909	
Current BES/President's Budget (FY 2010)	10866	10873	20070
Total Adjustments	-424	-36	20070
Congressional Program Reductions		-36	
Congressional Recissions			
Congressional Increases			
Reprogrammings	-108		
SBIR/STTR Transfer	-316		
Adjustments to Budget Years			327

Program Summary Explanation: Funding - FY 2010 funding (\$327 thousand) realigned to higher priority requirements.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604817A - Combat Identification			PROJECT 482	
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
482 Ground Combat Identification	10866	10873	20070		41809

A. Mission Description and Budget Item Justification: Combat Identification (CID) is a system to maximize overall combat effectiveness by minimizing and mitigating incidents of fratricide and maximizing the situational understanding of the trigger puller across a broad spectrum of Joint and Coalition vehicles. This is achieved by rapid, reliable identification of friends, enemies/foes, and neutrals in the Joint and Coalition battle space. Joint Cooperative Target ID-Ground (JCTI-G) supports the development of mounted ground-to-ground (G-G) CID solutions for the current force, while insuring interoperability with the Future Combat System (FCS) and air-to-ground (A-G) solutions, which is an Army gap for CID. The plan is to assess the most cost effective solution for air-to-ground CID. FY10 supports JCTI-G efforts for A-G and G-G. Efforts include preparation for Post MDD acquisition planning for solicitation and entry into TD/EMD phase developmental contracts for G-G and implementation of an A-G capability with US Army air platforms.

FY10 supports JCTI-G efforts for A-G and G-G. Efforts include preparation for Post MDD acquisition planning for solicitation and entry into TD/EMD phase developmental contracts for G-G and implementation of an A-G capability with US Army air platforms.

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
Preparation for JCTI-G, G-G Milestone (MS)	1000	1000	1500
Initiate JCTI-G, G-G Technology Development (TD)/Engineering & Manufacturing Development (EMD)		1000	4000
JCTI-G, G-G Risk Reduction Effort	9866	4589	
Execute JCTI-G, G-G TD/EMD		2979	
Air-to-Ground Risk Reduction Efforts		1000	
Preparation for JCTI-G, A-G Milestone (MS)			1500
Initiate JCTI-G (A-G) TD/EMD			13070
Small Business Innovative Research/Small Business Technology Transfer Programs		305	
Total	10866	10873	20070

<u>B. Other Program Funding Summary</u>	FY 2008	FY 2009	FY 2010	To Compl	Total Cost
OPA2, SSN BA0510 Combat Identification Program	4199			Continuing	Continuing

Comment:

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY

5 - System Development and Demonstration

PE NUMBER AND TITLE

0604817A - Combat Identification

PROJECT

482

C. Acquisition Strategy D. Acquisition Strategy: Revised in accordance with the 2 December 2008 revision to the DoD Acquisition System (DoD Instruction 5000.02). JCTI-G, G-G will be a joint Army and Marine Corps acquisition beginning with risk reduction efforts followed by a solicitation of a competitive Technology Development/Engineering & Manufacturing Development (TD/EMD) cost-plus contract award to baseline a design consistent with the JCTI-G Capability Description Document (CDD). The TD phase will proceed to a system Preliminary Design Review (PDR). A successful PDR and a final approved CDD will be part of the criteria required for a Milestone B Decision and entry into the EMD phase of the program. The result will be a baseline system configuration for production. The JCTI-G, A-G begins with the development of a program execution plan, integration analysis and preparation for a milestone decision. A MS decision is based on the requirements as set forth in the JCTI-G CDD. The TD/EMD phase for A-G will develop, integrate and test the capability on multiple platforms.

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration			PE NUMBER AND TITLE 0604817A - Combat Identification								PROJECT 482	
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
B-Kit Development	C/CPAF	TRW, CA	69765								69765	69765
A-Kit Development (Abrams)	C/CPFF	GDLS, MI	10909								10909	10909
A-Kit Development (Bradley)	C/CPFF	UDLP, CA	3364								3364	3364
A-Kit Development (Various)	Misc.	E&S, TRW, UDLP, AM General, Raytheon.	5836								5836	5836
Air-to-Ground Efforts	MIPR	I2WD Ft. Monmouth, NJ	2206								2206	
Air-to-Ground Solution Efforts	MIPR	Sandia National Labs/DOE Albuquerque, NM	550								550	
Combat Identification International Efforts	C/CPFF	Raytheon Ft. Wayne, IN	415								415	
BTID Cost Reduction Efforts	FFP	Raytheon Ft. Wayne, IN	6745								6745	
RF Tags Program Efforts	MIPR	I2WD Ft. Monmouth, NJ	2023								2023	
RF Tag Prototypes	C/CPFF	BAE Nashua, NH	800								800	
JCTI-G, G-G MS B Documentation	MIPR	CE LCMC/Support Contractors		500	1-4Q	500	1-4Q				1000	
JCTI-G, G-G Risk Reduction	C/CPFF	Raytheon, Ft. Wayne, IN		3000	4Q	297	2Q				3297	
JCTI-G, G-G Risk Reduction	C/CPFF	SRC, Syracuse, NY		2400	4Q	570	2Q				2970	
JCTI-G, G-G Risk Reduction	C/CPFF	BAE, Greenlawn, NJ		2000	4Q	1310	2Q				3310	
Air-to-Ground MS B Preparation	MIPR	CE LCMC				1000	1-4Q				1000	
JCTI-G, A-G - MS Preparation/Initiate TD/EMD	MIPR	PM, AAH, Huntsville, AL						6434	1-4Q		6434	
JCTI-G, A-G - MS Preparation/Initiate TD/EMD	MIPR	PEO Aviation,/PMs, Huntsville, AL						8063	1-4Q		8063	
											11562	

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration				PE NUMBER AND TITLE 0604817A - Combat Identification						PROJECT 482		
Subtotal:				102613	7900		3677		14497		140249	89874

II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Matrix Support	MIPR	CE LCMC, I2WD, Fort Monmouth NJ	8467	835	1Q	2767	1Q	1230	1Q		14974	
System Eng/Tech Assistance	MIPR	COLSA, Falls Church, VA; Tecolote, VA; LM/Sytex, CACI, Eatontown, NJ	7838	1104	1Q	2736	3Q	2866	1Q		14544	
Test Planning	MIPR	CERDEC, Fort Monmouth NJ	437	645	1-4Q	1250					5632	
Technical Support	MIPR	Sandia National Laboratories/IDA Albuquerque, NM	570								1770	
Subtotal:			17312	2584		6753		4096			36920	

III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test, Log Demo, SCD, IOTE		ATEC, TBD	3513								3513	
Limited User Test		ATEC, YPG, AZ	673								673	
ASCIET		Misc.	6651								6651	
Subtotal:			10837								10837	

IV. Management Services	Contract	Performing Activity &	Total	FY 2008	FY 2008	FY 2009	FY 2009	FY 2010	FY 2010	Cost To	Total	Target
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ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
5 - System Development and Demonstration			0604817A - Combat Identification							482		
	Method & Type	Location	PYs Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Complete	Cost	Value of Contract
Program Management	In-house support	PM NavSys/PM TIMS, Ft. Monmouth, NJ	6335	382	1-4Q	443	1-4Q	1477	1-4Q		10837	
Subtotal:			6335	382		443		1477			10837	
Project Total Cost:			137097	10866		10873		20070			198843	89874

Schedule Profile (R4 Exhibit)

May 2009

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604817A - Combat Identification

PROJECT
482

Event Name	FY 08				FY 09				FY 10				FY 11				FY 12				FY 13				FY 14				FY 15			
	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
JCTI-G, (G-G) Milestone (MS)									JCTI-G, (G-G) MS Preparation																							
JCTI-G (G-G) Initiate TD/EMD									JCTI-G, (G-G) Initiate TD/EMD																							
JCTI-G, (G-G) Request for Proposal Prep													JCTI-G, (G-G) Request for Proposal Prep																			
(1) JCTI-G, (G-G) Milestone																					▲ JCTI-G, (G-G) Milestone											
Execute JCTI-G, (G-G) TD/EMD																					Execute JCTI-G, (G-G) TD/EMD											
JCTI-G (A-G) Milestone Preparation																	JCTI-G (A-G) Milestone Preparation															
(2) JCTI-G, (A-G) Milestone																					▲ JCTI-G, (A-G) Milestone											
Execute JCTI-G, (A-G) TD/EMD																					Execute JCTI-G, (A-G) TD/EMD											

Schedule Detail (R4a Exhibit)

May 2009

BUDGET ACTIVITY		PE NUMBER AND TITLE						PROJECT
5 - System Development and Demonstration		0604817A - Combat Identification						482
<u>Schedule Detail</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>
BTID Cost Reduction Studies								
JCTI-G, (G-G) Milestone (MS)			1Q - 4Q					
JCTI-G (G-G) Initiate TD/EMD			1Q - 4Q	1Q - 2Q				
JCTI-G, (G-G) Request for Proposal Prep			1Q - 4Q	1Q - 2Q				
JCTI-G, (G-G) Milestone				2Q				
Execute JCTI-G, (G-G) TD/EMD				3Q - 4Q	1Q - 4Q	1Q - 4Q		
JCTI-G (A-G) Milestone Preparation			1Q - 4Q					
JCTI-G, (A-G) Milestone				1Q				
Execute JCTI-G, (A-G) TD/EMD				1Q - 4Q	1Q - 4Q	1Q - 4Q		

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

May 2009

BUDGET ACTIVITY		PE NUMBER AND TITLE			
5 - System Development and Demonstration		0604818A - Army Tactical Command & Control Hardware & Software			
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	109923	65317	90864	Continuing	Continuing
323 COMMON HARDWARE SYSTEMS	6702	7267	12197	Continuing	Continuing
334 COMMON SOFTWARE	20235	21756	16902	Continuing	Continuing
C15 MOUNTED BATTLE COMMAND ON-THE-MOVE (MBCOTM)	21064	11789	317	Continuing	Continuing
C29 CENTRALIZED TECHNICAL SUPPORT FACILITY (CTSF)	19604	12967	16827	Continuing	Continuing
C34 ARMY TAC C2 SYS ENG	13091	11538	31829	Continuing	Continuing
C39 Tactical Operations Centers (TOCs)	13474			Continuing	Continuing
JN1 JOINT NETWORK NODE (JNN) TESTING	15753		12792		28545

A. Mission Description and Budget Item Justification: The umbrella program to exploit automation technology for the conduct of combat operations is the Army Tactical Command and Control System (ATCCS) program which is a component of the Army Battle Command System (ABCS). The ATCCS program provides automation in the five battlefield functional areas (BFAs) with the following specific systems: (1) Maneuver Control System (MCS); (2) Effects and Fires Command and Control Systems (EFCCS); (3) All Source Analysis System (ASAS) for Intelligence/Electronic Warfare; (4) Forward Area Air Defense Command, Control and Intelligence System (FAADC2I); and (5) Battle Command Sustainment Support System (BCS3). To provide an overall technically sound, cost effective, and operationally responsive approach, the design and development of ATCCS must be accomplished on a total systems basis. The ATCCS Engineering Program, more commonly known as Systems Engineering and Integration (SE&I), provides the required overall systems engineering to assure integrated Army tactical command and control and the utilization of common hardware and software throughout the five ATCCS nodal systems. Fiscal years FY10 and FY11 will focus on "Systems of Systems" Engineering and integration for evolution of the network (Warfighter Information Network-Tactical, Joint Tactical Radio System) and associated services (Unified Battle Command, Joint Battle Command-Platform, Net-Enabled Command Capability, Network Service Center) with increased emphasis on immediate Warfighter needs as well as leveraging emerging technologies. This program element also includes the Central Technical Support Facility (CTSF) which provides a single technical "center of mass" for software checkout and physical system integration. The Common Hardware and Software projects provide common products to customers to meet their developmental and fielding needs. The Tactical Operations Centers (TOCs) project designs and develops the TOCs that form the structural backbone of the Army's digitized fielding concept. The Joint Network Node (JNN) Testing is the Increment 1b Technical Insertion to Increment 1a for Operational Test, which will be conducted in FY 10 and in coordination with the Increment 2 Initial Operational Test and Evaluation. These systems support the Legacy to Objective transition path.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

May 2009

BUDGET ACTIVITY	PE NUMBER AND TITLE		
5 - System Development and Demonstration	0604818A - Army Tactical Command & Control Hardware & Software		
<u>B. Program Change Summary</u>	FY 2008	FY 2009	FY 2010
Previous President's Budget (FY 2009)	100132	67535	57163
Current BES/President's Budget (FY 2010)	109923	65317	90864
Total Adjustments	9791	-2218	33701
Congressional Program Reductions		-2218	
Congressional Rescissions			
Congressional Increases			
Reprogrammings	9791		
SBIR/STTR Transfer			
Adjustments to Budget Years			33701

Change Summary Explanation: FY 2010: Common Hardware Systems (CHS) \$4.924 million increase is for CHS-4 Non-recurring engineering and testing; Common Software \$4.900 million increase is for development of the System of Systems architecture for Battle Command systems providing a cohesive development strategy amongst C2 systems; Mounted Battle Command on the Move \$8.007 million decrease due to funding being realigned to higher priority requirements; Centralized Technical Support Facility (CTSF) \$7.147 million increase for interoperability integration of systems requiring certification; Army Tactical Command and Control Systems Engineering (ATCCS) \$11,945 million increase for systems integration lab and Wireless Network After Next Technology Experimentation; Joint Network Node Testing \$12,792 million increase for the 1b Technical Insertion to Increment 1a for Operational Test, which will be conducted in FY10 and in coordination with the Increment 2 Initial Operational Test and Evaluation.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604818A - Army Tactical Command & Control Hardware & Software			PROJECT 323	
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
323 COMMON HARDWARE SYSTEMS	6702	7267	12197	Continuing	Continuing

A. Mission Description and Budget Item Justification: The Common Hardware Systems (CHS) program provides state-of-the-art, fully qualified, interoperable, compatible, deployable, and survivable hardware and computer networking equipment for command, control, and communications at all echelons of command for the United States Army and other DoD services. CHS also provides worldwide repair, maintenance, logistics, and technical support through strategically located contractor-operated Regional Support Centers (RSC) for tactical military units and management of a comprehensive 5-year warranty and 72-hour turnaround for repairs. In FY2010, CHS continues to manage the acquisition and delivery of CHS equipment, technology insertion and common standardized testing in support of customer requirements.

CHS-4, to be awarded 1Q FY10, will be a follow-on to the CHS-3 Contract.

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
Continue management of the acquisition and delivery of CHS equipment in support of customer requirements	5921	6417	6750
Continue supporting customer testing efforts with CHS equipment	154	200	150
Continue CHS technology insertion	627	447	297
Design, development and testing (NRE Costs) for New CHS-4 Products			5000
Small Business Innovative Research/Small Business Technology Transfer Programs (SBIR/STTR)		203	
Total	6702	7267	12197

B. Other Program Funding Summary Not applicable for this item.

C. Acquisition Strategy The overall goal is to improve interoperability and compatibility and lower life cycle costs by standardizing battlefield command and control automation and other warfighting systems (net centric, etc) through centralized buys of modified/ruggedized non-developmental items. This project provides a coherent migration strategy for Army Battle Command Systems and other acquisition warfighting systems through the use of technology insertion.

CHS also conducts common environmental and developmental testing of hardware items thereby reducing the testing requirements for individual Battlefield Functional Areas. An Indefinite Delivery/Indefinite Quantity firm fixed priced, full and open competition contract was awarded to GDC4S in May 2003, for ruggedization and production.

There is an increase in FY2010 for development, Non-Recurring Engineering and contract award for CHS-4.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY

5 - System Development and Demonstration

PE NUMBER AND TITLE

0604818A - Army Tactical Command & Control Hardware & Software

PROJECT

323

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE								PROJECT	
5 - System Development and Demonstration			0604818A - Army Tactical Command & Control Hardware & Software								323	
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Product Development	Various	Fort Monmouth, NJ	69372	2664	1-3Q	2820	1-3Q	3065	1-3Q	Cont.	Cont.	
Support Costs	MIPR	Fort Monmouth, NJ/Huntsville, AL	57893	3257	1-3Q	3597	1-3Q	3685	1-3Q	Cont.	Cont.	
Technology Insertion	Various	Various	13121	627	1-3Q	650	1-3Q	297	1-3Q	Cont.	Cont.	
GDC4S/CHS-3 Non-Recurring Engineering	C/FFP/IDIQ	Taunton, MA	12000								12000	
GDC4S/CHS-4 Non-Recurring Engineering	C/FFP/IDIQ							5000	1-4Q		5000	
Subtotal:			152386	6548		7067		12047		Cont.	Cont.	
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Not applicable												
Subtotal:												
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
CHS Test Activities	MIPR	Other Government Activities	1800	154	1-3Q	200	1-3Q	150	1-3Q	Cont.	Cont.	
Subtotal:			1800	154		200		150		Cont.	Cont.	

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration			PE NUMBER AND TITLE 0604818A - Army Tactical Command & Control Hardware & Software							PROJECT 323		
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:												
Project Total Cost:			154186	6702		7267		12197		Cont.	Cont.	

Schedule Profile (R4 Exhibit)

May 2009

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604818A - Army Tactical Command & Control Hardware & Software

PROJECT
323

Event Name	FY 08				FY 09				FY 10				FY 11				FY 12				FY 13				FY 14				FY 15			
	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
Technology Insertion	[Redacted]																															
CHS-2 Warranty Extension	[Redacted]																															
CHS-3 V1/V1+ Hardware Deliveries	[Redacted]																															
CHS-3 V2/V3 Hardware Deliveries	[Redacted]																															
GB-GRAM Consolidated Ordering Through CHS	[Redacted]																															
TSR-2 and TSR-3 Ongoing Contract Management	[Redacted]																															
Common Standard First Article Testing (CHS-3 & CHS-4)	[Redacted]																															
OIF Support	[Redacted]																															
RESET and Deep Cleaning	[Redacted]																															
IPv6 Implementation and Integration	[Redacted]																															
UID Labeling	[Redacted]																															
CHS-4 V1/V1+ Hardware Deliveries	[Redacted]																															
(1) CHS-4 Award	[Redacted]																															
CHS-4 V2/V3 Hardware Deliveries	[Redacted]																															

Schedule Detail (R4a Exhibit)

May 2009

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604818A - Army Tactical Command & Control Hardware & Software

PROJECT
323

<u>Schedule Detail</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>
Technology Insertion	1Q - 4Q							
CHS-2 Warranty Extension	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 3Q				
CHS-3 V1/V1+ Hardware Deliveries	1Q - 4Q	1Q - 3Q						
CHS-3 V2/V3 Hardware Deliveries	1Q - 4Q							
GB-GRAM Consolidated Ordering Through CHS	1Q - 4Q							
TSR-2 and TSR-3 Ongoing Contract Management	1Q - 4Q	1Q - 2Q						
Common Standard First Article Testing (CHS-3 & CHS-4)	1Q - 4Q							
OIF Support	1Q - 4Q							
RESET and Deep Cleaning	1Q - 4Q							
Out of Warranty Repair	1Q - 4Q							
IPv6 Implementation and Integration	1Q - 4Q							
UID Labeling	1Q - 4Q							
CHS-4 V1/V1+ Hardware Deliveries			3Q - 4Q	1Q - 4Q				
CHS-4 Award			1Q					
CHS-4 V2/V3 Hardware Deliveries			4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604818A - Army Tactical Command & Control Hardware & Software			PROJECT 334	
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
334 COMMON SOFTWARE	20235	21756	16902	Continuing	Continuing

A. Mission Description and Budget Item Justification: Project 334 Common Software (CS): Common Software is the program through which the Army procures, develops, integrates and tests common software products and/or components used for communication between Army Battle Command Systems (ABCS), Joint and coalition Command and Control (C2) applications. The CS project provides state-of-the-art software technologies and functionality that is used by numerous Army Battle Command Systems (ABCS) and joint systems to eliminate the need for service independent development and duplication of effort. The CS project also manages and performs technology demonstrations of emerging technologies for future use by Army C2 systems. The CS program is a cornerstone in the Army's digitization efforts.

FY10 funding will continue the development, acquisition management, and delivery of ABCS Software in support of Army and Joint Service requirements. Funding will also be used to develop the System of Systems (SOS) architecture for Battle Command systems providing a cohesive development strategy amongst C2 systems.

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
Continue the development, acquisition management and delivery of the ABCS Software infrastructure in support of Army and Joint Services requirements.	12467	12687	11459
Serve as the executive agent and provide software for interoperability, for Joint and Coalition efforts.	3375	3861	2361
Develop the System of System (SOS) architecture for Battle Command (BC) systems.	4270	4527	2951
Evaluation through demonstration and continuous testing of RFID for movement of materiel from a Defense Distribution Center (DDC) to an Army designated installation and/or tactical supply activity.	123	119	131
Small Business Innovative Research/Small Business Technology Transfer Programs		562	
Total	20235	21756	16902

<u>B. Other Program Funding Summary</u>	FY 2008	FY 2009	FY 2010	To Compl	Total Cost
Not applicable for Common Software Program					

Comment:

C. Acquisition Strategy In accordance with the TRADOC requirements document approved in 2008, entitled Battle Command Essential Capability, software capability will be

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY

5 - System Development and Demonstration

PE NUMBER AND TITLE

0604818A - Army Tactical Command & Control Hardware & Software

PROJECT

334

developed in 2-year increments as capability sets designed to Collaborate, Collapse and Converge Battle Command products. The product development funded under this R-Form is an integral part of the Army Battle Command System (ABCS), a system of systems and will be accomplished primarily under a PM Battle Command (BC) system of systems contract approach which consists of multiple prime contracts awarded from a single solicitation that will require each specific development task be competed among primes whenever possible. This strategy is designed to optimize opportunity for improved interoperability among the systems, to capture the benefits of competition and to ensure the rapid integration of new capability into warfighter systems. This strategy is designed to reduce the physical footprint, logistics support requirements and increase operational efficiency.

The overall acquisition goal of the Common Software program is the improvement of life cycle costs by providing common products that are used horizontally across programs avoiding duplication of efforts by Army and Joint programs.

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE								PROJECT	
5 - System Development and Demonstration			0604818A - Army Tactical Command & Control Hardware & Software								334	
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Matrix Support of CS Lab, Data Access	MIPR	CECOM, Fort Monmouth, NJ	1853								1853	
Engineering/Software Development	C, T&M	Various Contractors / Various Locations	74694	11403	1-4Q	12365	1-4Q	10425	1-4Q	Cont.	Cont.	
ABCS System Engineering & Integration	MIPR	PEO C3T, Fort Monmouth, NJ	210								210	
ABCS/Army System Engineering & Integration	C, T&M	Various Contractors / Various Locations	118	1330	1-4Q	1410	1-4Q	1023	1-4Q	Cont.	Cont.	
Battle Command System of Systems Architecture Development	C, T&M	Various Contractors / Various Locations		4270	1-4Q	4527	1-4Q	2951	1-4Q	Cont.	Cont.	
Digital System Engineers	C, T&M	Mantech, Ft. Hood, TX	14400								14400	
3D Display Technology	OTA	Concurrent Technology Corp., Johnstown, PA	9083								9083	
IDM-T Engineering Support	MIPR	GSA Contractors	2000								2000	
DISA Support for COE	MIPR		1486								1486	
Subtotal:			103844	17003		18302		14399		Cont.	Cont.	
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Program Support	In-house	PM Battle Command, Ft. Monmouth, NJ	4141	904	1-4Q	955	1-4Q	589	1-4Q	Cont.	Cont.	
Technical Support	C, T&M	Various Contractors / Various Locations	1185	194	1-4Q	209	1-4Q	175	1-4Q	Cont.	Cont.	
Subtotal:			5326	1098		1164		764		Cont.	Cont.	

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604818A - Army Tactical Command & Control Hardware & Software	PROJECT 334
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III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test	C, T&M	Various Contractors/Various locations	1033	1324	1-4Q	1440	1-4Q	1048	1-4Q	Cont.	Cont.	
Subtotal:			1033	1324		1440		1048		Cont.	Cont.	

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Program Office Management	In-House	Fort Monmouth, NJ	5338	810	1-4Q	850	1-4Q	691	1-4Q	Cont.	Cont.	
Subtotal:			5338	810		850		691		Cont.	Cont.	

Project Total Cost:	115541	20235		21756		16902		Cont.	Cont.	
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Schedule Profile (R4 Exhibit)

May 2009

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604818A - Army Tactical Command & Control Hardware & Software

PROJECT
334

Event Name	FY 08				FY 09				FY 10				FY 11				FY 12				FY 13				FY 14				FY 15							
	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				
Common Software Capbility Set 09-10 Development																																				
Common Software Capbility Set 11-12 Development																																				
Common Software Capbility Set 13-14 Development																																				
Common Software Capbility Set 15-16 Development																																				
Common Software Capbility Set 17-18 Development																																				

Schedule Detail (R4a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604818A - Army Tactical Command & Control Hardware & Software	PROJECT 334
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<u>Schedule Detail</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>
Common Software Capbility Set 09-10 Development	1Q - 4Q	1Q						
Common Software Capbility Set 11-12 Development	3Q - 4Q	1Q - 4Q	1Q - 2Q					
Common Software Capbility Set 13-14 Development			3Q - 4Q	1Q - 4Q	1Q - 2Q			
Common Software Capbility Set 15-16 Development					3Q - 4Q	1Q - 4Q	1Q - 2Q	
Common Software Capbility Set 17-18 Development							3Q - 4Q	1Q - 4Q

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration		PE NUMBER AND TITLE 0604818A - Army Tactical Command & Control Hardware & Software			PROJECT C15
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
C15 MOUNTED BATTLE COMMAND ON-THE-MOVE (MBCOTM)	21064	11789	317	Continuing	Continuing

A. Mission Description and Budget Item Justification: The Mounted Battle Command On The Move System (MBCOTM) is a Command, Control, Computers, Communications, Intelligence (C4I) mission equipment package (B Kit) integrated onto Bradley, Stryker, MRAP and Light Tactical Vehicle (A-Kit) platforms which allows brigade and above commanders to move to the decisive point on the battlefield. The focus of MBCOTM is to facilitate commander execution of net centric operations versus command post centric operations. MBCOTM provides the battle command commander situational awareness in the form of a digital common operational picture enabling a commander to maintain situational understanding while On The Move and when physically separated from fixed command posts. MBCOTM provides battle command enablers to support war (i.e., deterring aggression and coercion; fighting conflicts) and operations other than war (i.e., peacekeeping, domestic disaster relief, reducing potential conflicts, promoting regional stability, humanitarian missions and homeland security). MBCOTM supports the mission area of Command and Control. Future capabilities will include adding Joint Tactical Radio System and Wideband Gapfiller System. Future improvements will include addition of Secure Wireless Local Area Network, Land Warrior, and Unmanned Aerial Vehicle feed, as well as the integration of Multiple Frequencies Time Division Multiple Access (MF-TDMA) technology which allows large numbers of MBCOTMs to populate the battlefield and provide OTM communications services and range extension on the battlefield. In FY09, MBCOTM will go through an IOT&E test event.

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
System Development/Tech Upgrades	5044	7291	317
Prototype Build	2364	2890	
Program Spt/SSEB	1353		
Test/Evaluation	12303	1278	
Small Business Innovative Research/Small Business Technology Transfer Programs.		330	
Total	21064	11789	317

<u>B. Other Program Funding Summary</u>	FY 2008	FY 2009	FY 2010	To Compl	Total Cost
Mounted Battle Command on the Move MBCOTM (BZ9970)	50317	43793	926	Continuing	Continuing

Comment:

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY

5 - System Development and Demonstration

PE NUMBER AND TITLE

0604818A - Army Tactical Command & Control Hardware & Software

PROJECT

C15

C. Acquisition Strategy Mounted Battle Command on the Move (MBCOTM) will be integrated on three vehicle platforms: Light Tactical Vehicle (LTV), Bradley Command Vehicle, and the Stryker Command Vehicle. Upgrades will include Precision Lightweight GPS Receiving System to Defense Advanced GPS Receiver System and Ku Antenna. The Government is developing technology demonstrators of the Common Army-Marine Command and Control Vehicle (CAMC2 B-Kit) which will be designed to be a transit case solution (Mission Equipment Package/B Kit) to be integrated on a LTV. This was a cooperative variant developed with the Army and Marine Corps to gather information for writing the product specification, as well as to gain better insight on the B-Kit design. This competitive Request for Proposal (RFP) for the Production phase for the B-Kit for Bradley, Stryker and LTV was released during 3QFY07. Contract was awarded 2QFY08. Major testing requirements such as Development Test and Initial Operational Test & Evaluation will be funded with FY08 dollars. Development will continue with Bradley and Stryker vehicle A-Kit design, prototype manufacturing and testing during the reporting period.

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
5 - System Development and Demonstration			0604818A - Army Tactical Command & Control Hardware & Software							C15		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
System Development/Prototype build	T&M	TBD	14444	7408	1-2Q	10181	1-2Q	317	1-2Q	Cont.	Cont.	
Subtotal:			14444	7408		10181		317		Cont.	Cont.	
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Engineering Services/ICS/Log Development					1-2Q		1-2Q					
Subtotal:												
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Operational Assessments/IOT&E	MIPR	Army Test and Evaluation Center	4867	12503	1-2Q	1278	1-2Q			Cont.	Cont.	
Subtotal:			4867	12503		1278				Cont.	Cont.	
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Program Management			1200	1153	1-2Q						2353	
SBIR/STTR						330	1-2Q				330	

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604818A - Army Tactical Command & Control Hardware & Software							PROJECT C15	
Subtotal:	1200	1153		330				2683	

Project Total Cost:	20511	21064		11789		317	Cont.	Cont.	
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Schedule Detail (R4a Exhibit)

May 2009

BUDGET ACTIVITY		PE NUMBER AND TITLE						PROJECT
5 - System Development and Demonstration		0604818A - Army Tactical Command & Control Hardware & Software						C15
<u>Schedule Detail</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>
ARP / RFP								
MS C LRIP								
SSEB	1Q - 2Q							
CONTRACT AWARD	1Q - 2Q							
PRELIMINARY DESIGN REVIEW	2Q							
CRITICAL DESIGN REVIEW	2Q							
PRODUCTION VERIFICATION TEST	2Q - 4Q	1Q - 2Q						
IOT&E (BRADLEY/STRYKER)		3Q						
MS C FRP (BRADLEY/STRYKER)		3Q						
PROD & DEPLOY (BRADLEY/STRYKER)		3Q - 4Q	1Q - 4Q	1Q				
MS B								

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604818A - Army Tactical Command & Control Hardware & Software			PROJECT C29	
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
C29 CENTRALIZED TECHNICAL SUPPORT FACILITY (CTSF)	19604	12967	16827	Continuing	Continuing

A. Mission Description and Budget Item Justification: Project C29 - Centralized Technical Support Facility: The Central Technical Support Facility (CTSF) located at FT Hood, Texas, is the Army's premier test, integration, and certification facility for interoperability and net-worthiness. It is the Army's strategic facility responsible for conducting system engineering associated with integrating Army Battle Command System (ABCS) Weapon System architectures into a System of Systems, performing Army Interoperability Certification (AIC) testing and configuration management for all operational and tactical level applications (individual systems, System of Systems, and families of systems) prior to fielding. The CTSF provides validated test data to the Department of the Army and Joint agencies to validate interoperability and net-worthiness certifications. The current expansion of the distributed test environment of the CTSF will be accomplished through the Federation of Net-centric Sites (FaNS) construct. This FaNS construct addresses distributed integration development and testing using the core infrastructure of the CTSF to harness AMC, Army, and Joint expertise/resources. Through these federated resources, the CTSF will execute interoperability development and certification testing of the Warfighter and Business mission areas, to include Future Combat System, as they digitize and become part of the Army's LandWarNet.

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
Continue certification test planning/procedures/execution/reporting, interoperability baseline testing, simulation/stimulation validation and distributed testing.	5009	2000	4690
Continue systems engineering of foundation/data products, software validation/verification, network engineering, integration labs, information assurance.	100	400	3863
Maintained 250,000 square foot facility, with 41,305 sq. ft. dedicated to Army Integration Certification testing and systems engineering. Continue to provide infrastructure.	1443	2398	2035
Transitioned Digital System Engineering to SEC.	4935	3425	
Continue management operations.	6217	3241	2038
Continue configuration management.	750	500	894
Provide IT infrastructure networks connections to include DISN, SIPRNET, NIPRNET, GUARDNET.	500	500	2275
Provide logistics support.	150	155	319
Provide DA Mandated Army Intraoperability Certification test and validation.	500		322
Continue to provide certification testing for Data Products.			391
Small Business Innovative Research/Small Business Technology Transfer		348	

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)		May 2009		
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT		
5 - System Development and Demonstration	0604818A - Army Tactical Command & Control Hardware & Software	C29		
Total		19604	12967	16827
B. Other Program Funding Summary Not applicable for this item.				
<p>C. Acquisition Strategy Execute system of systems interoperability development and testing through the use of Government and Systems Engineering and Technical Analysis (SETA) contract personnel experienced in product development and interoperability testing. Development and testing occurs in a cyclical fashion, with an expectation of an annual Software Block/Capability Set test followed with out-of-cycle and maintenance test events to ensure integrity of software baselines to the Warfighter. Interoperability development/system engineering provides strategic integration of software into a system of systems/family of systems environment to support interoperability testing. Establish and maintain Configuration Management and version control of the Interoperable Fielded Baseline and the LandWarNet Baseline, providing authoritative data source. Further expand distributed development and testing capability using local assets and leveraging other federated test facilities to create synergy and realize efficiencies.</p>				

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
5 - System Development and Demonstration			0604818A - Army Tactical Command & Control Hardware & Software							C29		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
CSC/MANTECH (Direct Labor)	C/CPFF	Fort Hood, TX	23990	5829	1-2Q	4404	1Q			Cont.	Cont.	Cont.
CSC (System Engineering)	C/CPAF	Fort Hood, TX/Fort Monmouth, NJ	6670	3000	1-2Q	1500	1Q			Cont.	Cont.	Cont.
MITRE Corp (System Engineering)	C/CPFF	Fort Hood, TX/Eatontown, NJ	6010	1925	1-2Q	1925	1Q	416	1Q	Cont.	Cont.	Cont.
CAMBER (Config Mgt/)	C/CPAF	Fort Hood, TX	3317	750	1-2Q	500	1Q			Cont.	Cont.	Cont.
ILEX (Field Engineering)	C/CPAF	Fort Hood, TX	2157							Cont.	2157	Cont.
ROBBINS- GIOIA (Data Base Management)	C/CPAF	Fort Hood, TX/Fort Monmouth, NJ	1715	500	1-2Q	500	1Q			Cont.	Cont.	Cont.
CACI (JB Mgt)	C/CPAF	Fort Hood, TX						2040	2Q	Cont.	Cont.	Cont.
Subtotal:			43859	12004		8829		2456		Cont.	Cont.	Cont.
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
CECOM Matrix	MIPRs	Fort Hood, TX/Fort Monmouth, NJ	290	150	1-2Q	390	1Q	391	1Q	Cont.	Cont.	Cont.
In-House Support	MIPRs	Fort Hood, TX	1198	500	1-2Q	500	1Q	627	1Q	Cont.	Cont.	Cont.
Other Government Support	MIPRs	Fort Hood, TX	455	1000	1-2Q	400	1Q	612	1Q	Cont.	Cont.	Cont.
Subtotal:			1943	1650		1290		1630		Cont.	Cont.	Cont.
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
5 - System Development and Demonstration			0604818A - Army Tactical Command & Control Hardware & Software							C29		
ELECTRONIC PROVING GROUNDS (EPG)/NewTec	C/CPAF	Fort Hood, TX	13496	5200	1-2Q	2348	3Q	3709	3Q	Cont.	Cont.	Cont.
CAMBER (Testing/Configuration Management)	C/CPAF	Fort Hood, TX	2624	750	1-2Q	500	1Q	2356	1Q	Cont.	Cont.	Cont.
CSC/MANTECH (Direct Labor)	C/CPFF	Fort Hood, TX						4310	1Q	Cont.	Cont.	Cont.
CSC (System Engineering)	C/CPAF	Fort Hood, TX/Fort Monmouth,NJ						2091	3Q	Cont.	Cont.	Cont.
Matrix Support	Various	Fort Hood, TX						275	1Q		555	
Subtotal:			16120	5950		2848		12741		Cont.	Cont.	Cont.
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:												
Project Total Cost:			61922	19604		12967		16827		Cont.	Cont.	Cont.

Schedule Profile (R4 Exhibit)

May 2009

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604818A - Army Tactical Command & Control Hardware & Software

PROJECT
C29

Event Name	FY 08				FY 09				FY 10				FY 11				FY 12				FY 13				FY 14				FY 15											
	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								
SWBI+	SW Block I and I+																																							
SWBII	SW Block II																																							
Capability Set 9-10	Capability Set 9-10																																							
Capability Set 11-12									Capability Set 11-12																															
Capability Set 13-14																	Capability Set 13-14																							
Capability Set 15-16																									Capability Set 15-16															
PEO Test Events (Out-of-Cycle, Maint Updates, etc)	PEO Test Events (continuous)																																							
--BC Marshall									BC Marshall																															
--BC MacArthur																	BC MacArthur																							
--BC Eisenhower																									BC Eisenhower															
--BC Arnold																																	BC Arnold							
--FBCB2 JCR 1.X									FBCB2 JCR 1.X																															
--FBCB2 JCR 2.X																	FBCB2 2.X																							
--JBCP 1.0																									JBCP 1.0															
--WINT-T Inc 1b									WIN-T Inc 1b																															

Schedule Profile (R4 Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604818A - Army Tactical Command & Control Hardware & Software	PROJECT C29
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Event Name	FY 08				FY 09				FY 10				FY 11				FY 12				FY 13				FY 14				FY 15			
	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
--WIN-T Inc 2					WIN-T Inc 2																											
--WIN-T Inc 3													WIN-T Inc 3																			
Data Products Testing	Data Products Testing (continuous)																															
FCS Integration & Support Testing	FCS Integration & Support Testing																															
CM	Configuration Management (continuous)																															
SE&I	Systems Engineering & Integration (continuous)																															

Schedule Detail (R4a Exhibit)

May 2009

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604818A - Army Tactical Command & Control Hardware & Software

PROJECT
C29

<u>Schedule Detail</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>
SWBI+	1Q - 4Q	1Q - 4Q						
SWBII	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 3Q				
Capability Set 9-10		1Q - 4Q	1Q - 4Q					
Capability Set 11-12				1Q - 4Q	1Q - 4Q			
Capability Set 13-14						1Q - 4Q	1Q - 4Q	
Capability Set 15-16								1Q - 4Q
PEO Test Events (Out-of-Cycle, Maint Updates, etc)	1Q - 4Q							
--BC Marshall		2Q - 4Q						
--BC MacArthur			3Q - 4Q					
--BC Eisenhower					3Q - 4Q			
--BC Arnold							3Q - 4Q	
--FBCB2 JCR 1.X		2Q - 4Q	1Q - 3Q					
--FBCB2 JCR 2.X			3Q - 4Q	1Q				
--JBCP 1.0				3Q - 4Q	1Q - 4Q			
--WINT-T Inc 1b		1Q - 3Q						
--WIN-T Inc 2		2Q - 4Q						
--WIN-T Inc 3				4Q	1Q - 2Q			
Data Products Testing	1Q - 4Q							
FCS Integration & Support Testing	1Q - 4Q	1Q						
CM	1Q - 4Q							
SE&I	1Q - 4Q							

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604818A - Army Tactical Command & Control Hardware & Software			PROJECT C34	
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
C34 ARMY TAC C2 SYS ENG	13091	11538	31829	Continuing	Continuing

A. Mission Description and Budget Item Justification: Project DC34 - Army Tactical Command and Control Systems (ATCCS) Engineering which is also referred to as Systems Engineering and Integration (SE&I): Doctrine requires military leaders to make sound and timely command and control decisions to direct the activities of assigned and supporting units. The umbrella program to exploit automation technology in support of this mission is the ATCCS or SE&I program. The effort to achieve horizontal integration of the ATCCS Battlefield Functional Areas (BFAs), although going on independently in each BFA, was not disciplined enough to address all connections and needs within the entire spectra of command, control and communications. Therefore, to ensure this horizontal integration effort is complete and fully automated, a significant management, systems engineering and integration effort is required. This effort, supporting Army Battle Command Systems (ABCS) includes fielding of the ABCS Version 6.4 to the entire Army in four years, development of new capability releases aligned with the TRADOC-defined Commander's Needs and Battle Command Essential Capabilities, and integration of lifecycle processes with the G3 LandWarNet Capability Set construct. FY10 initiates Wireless Network After Next (WNaN)Technology Experimentation.

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
Continue Army Battle Command System (ABCS) Integrated Logistics Support	752	729	720
Continue ABCS Testing and Evaluation of all Battlefield Functional Area (BFA) fielded software	788	764	750
Continue ABCS Fielding/Scheduling	1034	980	3400
Continue ABCS information engineering	1040	1153	1300
Conduct and support system interoperability engineering	335	325	2030
Continue exploring state of the art technology insertion in support of the ABCS program	1729	1512	3000
Continue development and implementation of the ABCS information assurance	307	298	500
Continue System of Systems Development	2400	2613	5350
Continue ABCS System Engineering	3026	2840	
System of Systems Engineering and Integration evolution of the network			6220
TENIX	1680		
Small Business Innovative Research/Small Business Technology Transfer Programs		324	
Initiate Wireless Network after Next (WNaN)Technology Experimentation			8559
Total	13091	11538	31829

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY

5 - System Development and Demonstration

PE NUMBER AND TITLE

0604818A - Army Tactical Command & Control Hardware & Software

PROJECT

C34

B. Other Program Funding Summary Not applicable for this item.

C. Acquisition Strategy This project provides the technical and programmatic disciplines required for systems engineering and integration, experimentation, acquisition management, testing, interoperability, support to fielding and sustainment to ensure an interoperable and affordable Army Tactical Command and Control Systems (ATCCS). Fiscal year FY10 will focus on "Systems of Systems" Engineering and integration for evolution of the network (Warfighter Information Network-Tactical (WIN-T) and Joint Tactical Radio Systems (JTRS)) and associated services (Unified Battle Command, Joint Battle Command - Platform (JBC-P), Net-Enabled Command Capability (NECC), Network Service Center (NSC); and the Wireless Network After Next (WNaN) Technology Experimentation) with increased emphasis on immediate Warfighter needs as well as leveraging emerging technologies.

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE								PROJECT	
5 - System Development and Demonstration			0604818A - Army Tactical Command & Control Hardware & Software								C34	
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Northrop Grumman	C/CPIF	Fort Monmouth, NJ/Fort Hood, TX	14548	1700	1-2Q	1729	1-2Q				17977	17162
TBD	TBD	Aberdeen Proving Grounds, MD/Fort Monmouth, NJ/Fort Hood, TX						9500	2Q	Cont.	Cont.	Cont.
IDA	MIPR	Fort Monmouth, NJ	1724								1724	1724
CSC	C/CPAF	Fort Monmouth, NJ/Fort Hood, TX	42372	1500	1-2Q	1408	1-2Q			Cont.	Cont.	45385
TBD	TBD	Aberdeen Proving Grounds, MD/Fort Monmouth, NJ/Fort Hood, TX						8200	2Q	Cont.	Cont.	Cont.
MANTECH (Direct Labor)	C/CPFF	Fort Monmouth, NJ/Fort Hood, TX	6496								6496	6546
SYTEX	C/CPFF	Eatontown, NJ	330	340		350					1020	1020
TBD	TBD	Aberdeen Proving Grounds, MD/Fort Monmouth, NJ/Fort Hood, TX						2750	2Q	Cont.	Cont.	Cont.
CAMBER (Config Mgt/)	C/CPAF	Fort Hood, TX	1788								1788	855
ATSC	MIPR	Fort Leavenworth, KY	1850							Cont.	1850	1850
LOCKHEED MARTIN	C/CPAF	Eatontown, NJ	6674	618	1-2Q	604	1-2Q			Cont.	7896	7896
GTE (Labor and Equipment)	C/CPFF	Fort Hood, TX	2281							Cont.	2281	2281
Misc Contracts	C/CPAF	Fort Monmouth, NJ/Fort Hood, TX	5985	196						Cont.	6181	6181
Unixpros	C/CPAF	Eatontown, NJ	3711								3711	3711
ROBBINS-GIOIA	C/CPAF	Fort Monmouth, NJ/Fort Hood, TX	9642	160	1-2Q	165	1-2Q			Cont.	9967	9967

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
5 - System Development and Demonstration			0604818A - Army Tactical Command & Control Hardware & Software							C34		
MITRE	C/CPFF	Aberdeen Proving Grounds, MD/Ft Monmouth, NJ/Eatontown, NJ	49976	3992	1-2Q	4587	1-2Q	4320	1-2Q	Cont.	Cont.	Cont.
ITT	C/CPAF	Eatontown, NJ	1070							Cont.	1070	1070
MISCELLANEOUS SUPPORT	C/CPAF	Eatontown, NJ/Fort Hood, TX	2551	300						Cont.	2851	2851
BOOZ-ALLEN	C/CPAF	Eatontown, NJ	1950							Cont.	1950	1950
Subtotal:			152948	8806		8843		24770		Cont.	Cont.	Cont.
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
IN-HOUSE SUPPORT	MIPRs	Aberdeen Proving Grounds, MD/Fort Monmouth, NJ/Fort Hood, TX	8060	1630	1-2Q	1680	1-2Q	3100	1-2Q	Cont.	Cont.	Cont.
CECOM MATRIX	MIPRs	Fort Monmouth, NJ/Fort Hood, TX	7880	815		840		800	1-2Q	Cont.	Cont.	Cont.
OTHER GOVERNMENT SUPPORT	MIPRs	Fort Monmouth, NJ/Fort Hood, TX/Fort Belvoir, VA	3887	160		175		2200	1-2Q	Cont.	Cont.	Cont.
TENIX Support				1680							1680	1680
Subtotal:			19827	4285		2695		6100		Cont.	Cont.	Cont.
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
EPG	MIPR	Fort Huachuca, AZ	2881							2881	5762	

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE								PROJECT		
5 - System Development and Demonstration			0604818A - Army Tactical Command & Control Hardware & Software								C34		
TBD	TBD	Aberdee Proving Grounds, MD/Fort Monmouth, NJ						1Q	959			959	
Subtotal:			2881						959		2881	6721	
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract	
Subtotal:													
Project Total Cost:			175656	13091		11538		31829		Cont.	Cont.	Cont.	

Schedule Profile (R4 Exhibit)

May 2009

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604818A - Army Tactical Command & Control Hardware & Software

PROJECT
C34

Event Name	FY 08				FY 09				FY 10				FY 11				FY 12				FY 13				FY 14				FY 15			
	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
Continue Army Battle Command (ABCS)/Unified Battle Command(UBC) Testing and Eval	[Redacted]																															
Continue ABCS/UBC Fielding/Scheduling	[Redacted]																															
ABCS SYSTEMS ENGINEERING & INTEGRATION TRANSITION TO FCS	[Redacted]																															
Systems Integration Lab	[Redacted]																															
Initiate Wireless Network After Next (WNaN) Technology Experimentation	[Redacted]																															

Schedule Detail (R4a Exhibit)

May 2009

BUDGET ACTIVITY		PE NUMBER AND TITLE						PROJECT	
5 - System Development and Demonstration		0604818A - Army Tactical Command & Control Hardware & Software						C34	
<u>Schedule Detail</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	
Continue Army Battle Command (ABCS)/Unified Battle Command(UBC) Testing and Eval	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	
Continue ABCS/UBC Fielding/Scheduling	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	
ABCS SYSTEMS ENGINEERING & INTEGRATION TRANSITION TO FCS	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	
Systems Integration Lab			1Q - 4Q						
Initiate Wireless Network After Next (WNaN) Technology Experimentation			1Q - 4Q	1Q - 2Q					

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration		PE NUMBER AND TITLE 0604818A - Army Tactical Command & Control Hardware & Software			PROJECT C39
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
C39 Tactical Operations Centers (TOCs)	13474			Continuing	Continuing

A. Mission Description and Budget Item Justification: The Command Post Systems and Integration (CPS&I) (formerly Tactical Operations Centers) program is currently supporting OIF/OEF by providing commanders and their staffs with digitized platforms and command information centers that support the operational needs of the current Heavy, Infantry, and Stryker Brigade Combat Teams, with direct applicability to the Future Force. Based on the approved Standardized Integrated Command Post System (SICPS) Capability Production Document (CPD), SICPS is a family of systems that consists of the Command Post Platform (CPP), Trailer Mounted Support System (TMSS), Command Center System (CCS), and Command Post Communications System (CPCS). SICPS provides standardized Command Post infrastructure allowing commanders and staffs to digitally plan, prepare, and execute operations through systematic integration of Army tactical communications systems, multiple Army Battle Command Systems (ABCS) and supporting systems into standard platforms. SICPS is an enabler that supports the capability needed to realize shared situational understanding by integrating various approved Army/Joint Command and Control (C2) communications and network systems in a collaborative environment to display the Common Operational Picture (COP) and enable integrated Battle Command capability. The Harbormaster Command and Control Center (HCCC) provide a command and control facility and capabilities to oversee the movement of vessel and cargo in a fixed port facility or during Joint Logistics Over-the-Shore (JLOTS) operations. The HCCC provides intra-theater sea Lines of Communications (LOC) and inland waterways command and control of Army watercraft. FY08 provides for design, development, and test of the HCCC system and Up-Armored Modularized CPP-Light. This is not a new start.

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
Design, development, and test of HCCC System	10374		
Develop, test and qualification of Up-Armored Modularized CPP-Light	3100		
Develop and test interoperability between Command Post Platforms and future WIN-T Increments			
Develop and test integration of UBC/FCS Technology into Command Post Platforms			
Design, develop and test/qualification of Track / Heavy Armored Command Post Platform			
Design, develop and test/qualification of Common Command Post Shelter System			
Total	13474		

<u>B. Other Program Funding Summary</u>	FY 2008	FY 2009	FY 2010	To Compl	Total Cost
Other Procurement Army 2 - SSN: BZ9865 (TOCs)	513073	146811	29934	Continuing	Continuing
Other Procurement Army 2 - SSN: M11204 (HCCC)		17563	10962	Continuing	Continuing

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY

5 - System Development and Demonstration

PE NUMBER AND TITLE

0604818A - Army Tactical Command & Control Hardware & Software

PROJECT

C39

Comment:

C. Acquisition Strategy The SICPS evolutionary acquisition strategy develops, tests, produces, trains, and fields Army Command Post systems including Command Post Platforms (CPPs) and Trailer Mounted Support Systems (TMSS) as outlined in the SICPS Capability Production Document (CPD). The CPD includes requirements for three CPP variants, the Rigid Wall Shelter (RWS), the Light, and the Track CPP. A competitive contract was awarded in August 2004 for CPP development and integration. To date, only the RWS CPP has been developed, tested, and qualified. SICPS TMSS/tents are procured using Commercial Off-the-Shelf (COTS), or modified COTS, non-development items. SICPS including the RWS CPP and TMSS achieved a Full Rate Production decision in May 07, which included Type Classification-Standard and Full Materiel Release. Continuing efforts include development and integration/test of Light and Track CPP variants, development/test of a Common Command Post Shelter system, and upgrades/improvements required to maintain interoperability between the Current Force and Future Force. The HCCC evolutionary acquisition strategy develops, tests, produces, trains, and fields HCCC systems as outlined in the HCCC Capability Production Document (CPD). A Low Rate Initial Production (LRIP) decision is planned for FY09 for the HCCC.

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE								PROJECT	
5 - System Development and Demonstration			0604818A - Army Tactical Command & Control Hardware & Software								C39	
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
HCCC System	MIPR	OGAs		8218	3Q						8218	
Up-Armored Modularized CPP -Light	C/CPIF	NGMS		3100	4Q						3100	
WIN-T Interoperability	C/CPIF	TBD								Cont.	Cont.	
UBC / FCS Technology	C/CPIF	TBD								Cont.	Cont.	
Track / Heavy Armor CPP	C/CPIF	TBD										
Common Command Post Shelter System	C/CPIF	TBD								Cont.	Cont.	
Subtotal:				11318						Cont.	Cont.	
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:												
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
HCCC System	MIPR	Various Govt Test Agencies		1531							1531	
Up-Armored Modularized CPP-Light	MIPR	Various Govt Test Agencies										
WIN-T Interoperability	MIPR	Various Govt Test Agencies								Cont.	Cont.	

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration			PE NUMBER AND TITLE 0604818A - Army Tactical Command & Control Hardware & Software							PROJECT C39		
UBC / FCS Technology	MIPR	Various Govt Test Agencies								Cont.	Cont.	
Track / Heavy Armored CPP-Light	MIPR	Various Govt Test Agencies								Cont.	Cont.	
Common Command Post Shelter System	MIPR	Various Govt Test Agencies								Cont.	Cont.	
Subtotal:				1531						Cont.	Cont.	

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Program Management Administration		CPS&I, Madison, AL		625						Cont.	Cont.	
Subtotal:				625						Cont.	Cont.	

Project Total Cost:				13474						Cont.	Cont.	
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Schedule Profile (R4 Exhibit)

May 2009

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604818A - Army Tactical Command & Control Hardware & Software

PROJECT
C39

Event Name	FY 08				FY 09				FY 10				FY 11				FY 12				FY 13				FY 14				FY 15			
	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
Design, develop, and test of HCCC System																																
SICPS (RWS CPP/TMSS) Full Rate Production																																
Develop, test and qualification of Up-Armored Modularized CPP-Light																																
Develop and test interoperability between CPP and future WIN-T Increments																																
Develop and test integration of UBC/FCS Technology into Command Post Platforms																																
Design, develop and test/qualification of Track / Heavy Armored CPP																																
Design, develop and test/qualification of Common Command Post Shelter System																																

Schedule Detail (R4a Exhibit)

May 2009

BUDGET ACTIVITY		PE NUMBER AND TITLE						PROJECT	
5 - System Development and Demonstration		0604818A - Army Tactical Command & Control Hardware & Software						C39	
<u>Schedule Detail</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	
Design, develop, and test of HCCC System	3Q - 4Q	1Q - 4Q	1Q - 4Q						
SICPS (RWS CPP/TMSS) Full Rate Production	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	
Develop, test and qualification of Up-Armored Modularized CPP-Light	1Q - 4Q	1Q - 4Q	1Q - 4Q						
Develop and test interoperability between CPP and future WIN-T Increments			1Q - 4Q	1Q - 2Q					
Develop and test integration of UBC/FCS Technology into Command Post Platforms			1Q - 4Q	1Q - 4Q					
Design, develop and test/qualification of Track / Heavy Armored CPP			1Q - 4Q	1Q - 4Q					
Design, develop and test/qualification of Common Command Post Shelter System			1Q - 4Q	1Q - 4Q					

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604818A - Army Tactical Command & Control Hardware & Software			PROJECT JN1	
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
JN1 JOINT NETWORK NODE (JNN) TESTING	15753		12792		28545

A. Mission Description and Budget Item Justification: As the emerging major component of the Army Bridge to Future Networks, Warfighter Information Network - Tactical (WIN-T) Increment 1, formally the Joint Network Node (JNN) Network is intended to replace legacy Mobile Subscriber Equipment (MSE) while moving the Army to a unified Everything Over Internet Protocol (EOIP) Communications System. Increment 1: Networking at-the-Halt-the network is capable of passing unclassified and classified traffic levels, throughout its entire structure, from Home Station Operations center to the furthest forward Battalion Elements. Designed to meet modularity and rapid deployment mandate, the network is also intended to support Joint Communications Requirements and internet applications from Coalition partners and from approved Federal Agencies such as the Federal Emergency Management Agency and Department of Homeland Security.

FY 08: Funding was used to test the initial production deliveries from the contract awarded in Sep 07. Initial Operational Test (IOT) was successfully conducted in 1st quarter FY 09.

FY 10: Funding will be used for Operational Test of the 1b technical insertion to Increment 1a for Operational Test that will be conducted 1st quarter FY 11 in conjunction with Inc 2 Initial Operational Test and Evaluation (IOT&E).

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
Operational Testing Event	15753		12792
Total	15753		12792

B. Other Program Funding Summary Not applicable for this item.

C. Acquisition Strategy Joint Network Node (JNN) Network had previously been acquired in substantial quantities as urgent Army directed procurement. The JNN program attained Milestone C on 14 May 2007. The Product Manager was given verbal approval to proceed, in addition to instruction to await an Acquisition Decision Memorandum (ADM) for the Warfighter Information Network - Tactical (WIN-T). The ADM, issued on 5 June 2007, directed the Army to restructure the WIN-T Major Defense Acquisition Program (MDAP) to absorb the former JNN program and directed a number of actions as the way ahead for the combined program. The WIN-T Acquisition Category (ACAT) 1D program now consists of four separately reporting Increments, with JNN re-designated as WIN-T Increment 1. RDT&E funding will be used to test the output of the production.

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE								PROJECT	
5 - System Development and Demonstration			0604818A - Army Tactical Command & Control Hardware & Software								JN1	
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:												
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:												
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Increment 1a IOT - 1Q FY 09	T & M	ATEC		15753	3-4Q						15753	
Increment 1b OT - 1Q FY 11	T & M	ATEC						12792	3-4Q		12792	
Subtotal:				15753				12792			28545	
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:												
Project Total Cost:				15753				12792			28545	

Schedule Profile (R4 Exhibit)

May 2009

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604818A - Army Tactical Command & Control Hardware & Software

PROJECT
JN1

Event Name	FY 08				FY 09				FY 10				FY 11				FY 12				FY 13				FY 14				FY 15			
	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) Increment 1a IOT, (2) Increment 1b OT					▲ ₁ Increment 1a IOT								▲ ₂ Increment 1b OT																			

Schedule Detail (R4a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration		PE NUMBER AND TITLE 0604818A - Army Tactical Command & Control Hardware & Software					PROJECT JN1	
<u>Schedule Detail</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>
Increment 1a IOT		1Q						
Increment 1b OT				1Q				

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

May 2009

BUDGET ACTIVITY		PE NUMBER AND TITLE			
5 - System Development and Demonstration		0604822A - General Fund Enterprise Business System (GFEBS)			
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
GF5 GENERAL FUND ENTERPRISE BUSINESS SYSTEM (GFEBS)	108358	50142	6002		164502

A. Mission Description and Budget Item Justification: The General Fund Business Enterprise System (GFEBS) is a Major Automated Information System (MAIS) program and is in the developmental phase. It will follow the DoD Business Enterprise Architecture which is aligned to the mandated Federal Enterprise Architecture. GFEBS was implemented to fulfill the needs and comply with the Federal Financial Management Improvement Act (FFMIA), The Chief Financial Officers Act of 1990, the Government Performance and Results Act of 1993, the Government Management Reform Act of 1994, and the Clinger-Cohen Act of 1996 and to fulfill the stated mission of the Assistant Secretary of the Army for Financial Management and Comptroller (ASA(FM&C)). GFEBS will replace financial systems operating in excess of 30 years like the Standard Finance Systems (STANFINS) and other costly feeder systems which do not allow the Department of Defense (DoD) or the U.S. government to achieve an unqualified opinion on its financial statements. GFEBS will become the Department of the Army's new core financial management system for administering its General Fund. GFEBS will be a commercial off-the-shelf (COTS) Enterprise Resource Planning (ERP) system that is certified by the Chief, Financial Officer Council (CFOC) and provides the six core financial functions. GFEBS will allow tactical commanders to make informed decisions on a virtually real time system.

On 1 October 2008, GFEBS Release 1.2 was successfully implemented to the Fort Jackson Garrison, Defense Finance Accounting Service (DFAS) Indianapolis, Indiana and several other organizations. It is a viable and operational system with positive feedback from the field. On 1 April 2009 GFEBS Release 1.3 was successfully implemented to Release 1.2 locations as well as Fort Benning, Fort Stewart, DFAS Rome and several other organizations. In addition, GFEBS has continued development work in FY09 with the completion of the Build and Test of Release 1.3 and the completion of the Build of Release 1.4. Testing for Release 1.4 is currently underway and scheduled to complete this FY. Release 1.4 is scheduled to begin deployment with a Mini-Wave to PEO EIS and Fort Benning on 1 October 2009.

In FY2010, \$6.1 Million was moved from OPA to RDTE. This was a zero sum adjustment (no program growth) of funds. The \$6.1 Million in RDTE is required to complete Release 1.4 (SOMARDS) Testing. At the advise of the Assistant Secretary of the Army, Financial Management (ASA FM&C), GFEBS revised its deployment strategy based on lessons learned from Release 1.2 and Release 1.3. This revision extended the final Release 1.4 Testing into the 1st quarter of FY2010.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

May 2009

BUDGET ACTIVITY	PE NUMBER AND TITLE		
5 - System Development and Demonstration	0604822A - General Fund Enterprise Business System (GFEBs)		
<u>B. Program Change Summary</u>	FY 2008	FY 2009	FY 2010
Previous President's Budget (FY 2009)	111873	60308	
Current BES/President's Budget (FY 2010)	108358	50142	6002
Total Adjustments	-3515	-10166	6002
Congressional Program Reductions		-10166	
Congressional Rescissions			
Congressional Increases			
Reprogrammings	-392		
SBIR/STTR Transfer	-3123		
Adjustments to Budget Years			6002

Change Summary Explanation: Funding -FY 2010: Funds realigned from OPA to RDTE to support further GFEBs development.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration		PE NUMBER AND TITLE 0604822A - General Fund Enterprise Business System (GFEBS)			PROJECT GF5
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
GF5 GENERAL FUND ENTERPRISE BUSINESS SYSTEM (GFEBS)	108358	50142	6002		164502

A. Mission Description and Budget Item Justification: The General Fund Business Enterprise System (GFEBS) is a Major Automated Information System (MAIS) program and is in the developmental phase. It will follow the DoD Business Enterprise Architecture which is aligned to the mandated Federal Enterprise Architecture. GFEBS was implemented to fulfill the needs and comply with the Federal Financial Management Improvement Act (FFMIA), The Chief Financial Officers Act of 1990, the Government Performance and Results Act of 1993, the Government Management Reform Act of 1994, and the Clinger-Cohen Act of 1996 and to fulfill the stated mission of the Assistant Secretary of the Army for Financial Management and Comptroller (ASA(FM&C)). GFEBS will replace financial systems operating in excess of 30 years like the Standard Finance Systems (STANFINS) and other costly feeder systems which do not allow the Department of Defense (DoD) or the U.S. government to achieve an unqualified opinion on its financial statements. GFEBS will become the Department of the Army's new core financial management system for administering its General Fund. GFEBS will be a commercial off-the-shelf (COTS) Enterprise Resource Planning (ERP) system that is certified by the Chief, Financial Officer Council (CFOC) and provides the six core financial functions. GFEBS will allow tactical commanders to make informed decisions on a virtually real time system.

On 1 October 2008, GFEBS Release 1.2 was successfully implemented to the Fort Jackson Garrison, Defense Finance Accounting Service (DFAS) Indianapolis, Indiana and several other organizations. It is a viable and operational system with positive feedback from the field. On 1 April 2009 GFEBS Release 1.3 was successfully implemented to Release 1.2 locations as well as Fort Benning, Fort Stewart, DFAS Rome and several other organizations. In addition, GFEBS has continued development work in FY09 with the completion of the Build and Test of Release 1.3 and the completion of the Build of Release 1.4. Testing for Release 1.4 is currently underway and scheduled to complete this FY. Release 1.4 is scheduled to begin deployment with a Mini-Wave to PEO EIS and Fort Benning on 1 October 2009.

In FY2010, \$6.1 Million was moved from OPA to RDTE. This was a zero sum adjustment (no program growth) of funds. The \$6.1 Million in RDTE is required to complete Release 1.4 (SOMARDS) Testing. At the advise of the Assistant Secretary of the Army, Financial Management (ASA FM&C), GFEBS revised its deployment strategy based on lessons learned from Release 1.2 and Release 1.3. This revision extended the final Release 1.4 Testing into the 1st quarter of FY2010.

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
Development	80389	34266	4465
Project Management	27969	14480	1537
Small business Innovative Research/Small Business Technology Transfer Programs		1396	
Total	108358	50142	6002

<u>B. Other Program Funding Summary</u>	FY 2008	FY 2009	FY 2010	To Compl	Total Cost

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY	PE NUMBER AND TITLE				PROJECT
5 - System Development and Demonstration	0604822A - General Fund Enterprise Business System (GFEBS)				GF5
RDTE, 655013MO5				Continuing	Continuing
OPA, BE4168000	9751	30048	85801	Continuing	Continuing
OMA, 432612000		39546	35210	Continuing	Continuing

Comment: Position: PB10/11

C. Acquisition Strategy GFEBS is being procured as a performance-based acquisition to encourage innovative and creative solutions and to avoid hampering, dictating, or prescribing how the work must be performed. Therefore, the focus of the Statement of Objectives (SOO) was on "what" the Army is trying to achieve instead of "how" it must be achieved. The use of an SOO is an emerging method that transforms the acquisition process by requiring each of the competing contractors to develop their unique proposed technical approach, work breakdown schedule, project plan and schedule, schedule of deliverable items, performance metrics, performance measurement plan, and quality assurance plan. To achieve its GFEBS project objectives, the Army used an existing Blanket Purchase Agreement (BPA) to select a System Integrator (SI). The contract period of performance is 1 base year with 9 option years. DoD through the Department of the Navy has established enterprise agreements for ERP System Integration Services with five qualified SI(s) that are General Services Administration (GSA) Federal Supply Service (FSS) Schedule holders under the Enterprise Software Initiative (ESI). The Army has selected the SI; all contractor work will be performed under the selected SI's ESI-SI BPA through the award of one task order with several options. Multiple options are anticipated to support each project objective. The products and services described in task orders will be grouped and referenced as Contract Line Item Numbers (CLIN). All CLINs will be awarded on a Fixed Price basis with performance based incentives and disincentives. The task order and all options exercised will be performance based, containing financial incentive and disincentive provisions. Offerors were provided performance based metrics and were required to propose performance incentive and disincentive provisions by CLIN in their Quality Assurance Surveillance Plan (QASP) submitted in response to the Request for Quote (RFQ). The QASP elements were evaluated as part of the evaluation of the Offerors' proposals.

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
5 - System Development and Demonstration			0604822A - General Fund Enterprise Business System (GFEBS)							GF5		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Concept Exploration	FFP	Accenture Springfield, Va.	24113								23332	
Development	FFP	Accenture Springfield Va.	30670	80389	1-4Q	34100	1-4Q	6002		Cont.	Cont.	
Subtotal:			54783	80389		34100		6002		Cont.	Cont.	
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Program Management	FFP	Accenture Springfield Va.	123608	27969	1-4Q	16042	1-4Q			Cont.	Cont.	
Subtotal:			123608	27969		16042				Cont.	Cont.	
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
System Procurement	FFP	Accenture Springfield Va.	30778							Cont.		
System Maintenance/Item Management	FFP	Accenture Springfield Va.	15794							Cont.		
Hardware Maintenance	FFP	Accenture Springfield Va.	1898							Cont.		
Software Maintenance	FFP	Accenture Springfield Va.	16880							Cont.		
Subtotal:			65350							Cont.		

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604822A - General Fund Enterprise Business System (GFEBS)	PROJECT GF5
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IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:												
Project Total Cost:			243741	108358		50142		6002		Cont.	Cont.	

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

May 2009

BUDGET ACTIVITY		PE NUMBER AND TITLE			
5 - System Development and Demonstration		0604823A - FIREFINDER			
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	84546	47688	20334	Continuing	Continuing
L86	9658				9658
L87		100	107		292
L88	74888	47588	20227	Continuing	Continuing

A. Mission Description and Budget Item Justification: This Program funds design, development and test of primary target acquisition and counterfire radars to automatically detect, locate and classify hostile indirect fire weapons (mortars, artillery, rockets, and missiles). This PE directly supports the prioritization, tracking, and locating of targets, and dissemination of that information for simultaneous attack of multiple threats. It provides the Warfighter with continuous and responsive counterfire target acquisition systems for all types and phases of military operations. Project L86, Lightweight Counter Mortar Radar, Version 3 (LCMR (V)3) provides 360 degree coverage and is used to detect, locate and report hostile locations of enemy indirect firing systems out to a range of 10 kilometers. Project L88, Enhanced AN/TPQ-36 (EQ-36), is a highly mobile radar system that will leverage the latest in technology design to accelerate technology infusion and increase range while improving False Alarm Rate, reducing obsolescence and increasing reliability. EQ-36 will provide 90 degree coverage and extended range, with an incremental development to increase detection capability to 360 degrees. The EQ-36 will be interoperable with future Battle Command Systems.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

May 2009

BUDGET ACTIVITY	PE NUMBER AND TITLE		
5 - System Development and Demonstration	0604823A - FIREFINDER		
<u>B. Program Change Summary</u>	FY 2008	FY 2009	FY 2010
Previous President's Budget (FY 2009)	76767	47845	9790
Current BES/President's Budget (FY 2010)	84546	47688	20334
Total Adjustments	7779	-157	10544
Congressional Program Reductions		-157	
Congressional Rescissions			
Congressional Increases			
Reprogrammings	9928		
SBIR/STTR Transfer	-2149		
Adjustments to Budget Years			10543

Change Summary Explanation: Funding - FY2010 funding increased for completion of EQ-36 Increment 1 and Increment 2 development, integration and test.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration		PE NUMBER AND TITLE 0604823A - FIREFINDER			PROJECT L86
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
L86 LIGHTWEIGHT COUNTER MORTAR RADAR (LCMR)	9658				9658

A. Mission Description and Budget Item Justification: The AN/TPQ-48(V)3 Lightweight Counter Mortar Radar (LCMR) will provide 360 degrees of azimuth coverage and be used to detect, locate, and report hostile locations of enemy indirect firing systems. It will cover a range of 500 meters to 10 kilometers and provide observed fires from friendly units. The AN/TPQ-48(V)3 shall be a digitally connected, day/night mortar, cannon, and rocket locating system. The AN/TPQ-48(V)3 will be a spiral enhancement to the existing AN/TPQ-48(V)2. The LCMR was originally designed to operate as a stand alone capability for Special Forces and is man portable when disassembled. This capability has been fielded to Operation Iraqi Freedom (OIF) as a Limited Procurement Urgent (LPU) capability.

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
Primary development of thirteen (13) test articles to include non recurring engineering and Program Management support.	6177		
Develop/build Radar Environmental Simulator (RES) to simulate system hardware/software and emulate the radar performance.	1063		
Activities to support Development Test/Operational Test. Efforts include conduct of Live Ammunition Test at Yuma Proving Ground (YPG), Limited User Test, ammunition and manpower to support system test.	2418		
Total	9658		

<u>B. Other Program Funding Summary</u>	FY 2008	FY 2009	FY 2010	To Compl	Total Cost
SSN: B05201 Lightweight Counter Mortar Radar	58512	80760	90251	Continuing	Continuing

Comment:

C. Acquisition Strategy The Lightweight Counter Mortar Radar (LCMR) prototype was developed as a Special Operations Command (SOCOM) program under the Office of Special Technology, Broad Agency Announcement (BAA). The LCMR Engineering Development Program was also SOCOM funded which resulted in to a functional system. The LCMR leverages the SOCOM developed program and serves as a spiral development effort to provide greater range, accuracy, interoperability and transportability to support Army's requirements. Acquisition Strategy Approval was obtained in May 06 and a contract was awarded in Sep 06 to spiral the existing system into the Army's objective system.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604823A - FIREFINDER			PROJECT L88	
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
L88 ENHANCED AN/TPQ 36	74888	47588	20227	Continuing	Continuing

A. Mission Description and Budget Item Justification: The Enhanced AN/TPQ-36 (EQ-36) is a highly mobile radar system designed to classify targets for automatic first-round location of mortar, cannon and rocket enemy fires and to provide observed fires from friendly units. The EQ-36 will provide 90 and 360 degree coverage against the entire threat set. This program will leverage the latest in technology design to provide increased range, reduced crew size, as well as increased reliability, availability, and maintainability. The EQ-36 will provide digital communications and be interoperable with future Battle Command Systems.

FY2010:

- a. Continuation of development, integration and test of four (4) Non-Recurring Engineering (NRE) Increment 1 systems
- b. Design, integration and test of Increment 2 capabilities

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
Primary development and test of four (4) Enhanced AN/TPQ-36 NRE Increment 1 systems, and associated Program Management support to meet the Army's counterfire requirements.	71504	32270	8681
Increment 2 Design and Integration	3184	8384	7402
Activities to support Development Test/Operational Test. Efforts include cost of range times at YUMA Proving Ground (YPG), gun crews, and manpower to support system test.	200	5601	4144
Small Business Innovative Research/Small Business Technology Transfer Programs		1333	
Total	74888	47588	20227

<u>B. Other Program Funding Summary</u>	FY 2008	FY 2009	FY 2010	To Compl	Total Cost
B05310 Enhanced AN/TPQ-36	160344	106745	220665	Continuing	Continuing

Comment:

C. Acquisition Strategy The Enhanced AN/TPQ-36 (EQ-36) leverages technology developed in the Multi-Mission Radar Advanced Technology Objective (ATO) program incorporating the latest antenna technology into the EQ-36. In order to field the EQ-36 capability to the Warfighter in the most expeditious manner with the least amount of risk, the EQ-36 will be produced in two increments based on two tiers of technical threshold requirements. Increment 1 capabilities are planned to be fielded as a replacement to the AN/TPQ-36 and AN/TPQ-37 radar systems. Increment 2 capabilities will provide increased performance over Increment 1 and will meet all of the user's threshold requirements.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)**May 2009**

BUDGET ACTIVITY

5 - System Development and Demonstration

PE NUMBER AND TITLE

0604823A - FIREFINDER

PROJECT

L88

A contract was awarded in 4QFY06 based on full and open competition. The system will be procured in three (3) Initial Production lots. Full rate production contract is to be competed in FY11. The system is planned to eventually replace all of the AN/TPQ-36 and AN/TPQ-37 legacy systems in the fleet.

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
5 - System Development and Demonstration			0604823A - FIREFINDER							L88		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development	CPIF	Lockheed Martin, Syracuse, NY	52590	67773	1-4Q	37286	1-3Q	13313	1-3Q	Cont.	Cont.	
Ancillary Equipment	MIPR/Requisitions	Various	1032	2539	2Q	935	2Q	973	2Q		5479	
Radar Environmental Simulators (RES)	MIPR	Oakridge National Labs, Oak Ridge, TN	4500								4500	
Systems Engineering (Contractor)	C/FP	Various	2090	1708	1-2Q	658	1-3Q	600	1-3Q	Cont.	Cont.	
Systems Engineering (Government)	MIPR	Various	540	186	1-2Q	372	1-2Q	100	1-2Q	Cont.	Cont.	
SBIR/STTR Transfers						1333					1333	
Subtotal:			60752	72206		40584		14986		Cont.	Cont.	
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Source Selection Efforts	MIPR	Various	828							Cont.	Cont.	
Development Support (Government)	MIPR	Various	1078	1225	1-2Q	781	1-2Q	647	1-2Q		3731	
Development Support (Contractor)	C/FF	Various	1193	443	1-2Q	372	1-2Q	200	1-2Q		2208	
Subtotal:			3099	1668		1153		847		Cont.	Cont.	
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Test Support (Government)	MIPR	Various	125	200	2Q	5601	2Q	4144	2Q	Cont.	Cont.	
Subtotal:			125	200		5601		4144		Cont.	Cont.	

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604823A - FIREFINDER

PROJECT
L88

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Program Management (Contractor)	C/FP	Various	1727	255	1-3Q		1-3Q			Cont.	Cont.	
Program Management (Government)	MIPR	Various	556	146	1-3Q		1-3Q			Cont.	Cont.	
Program Management	In-House	PM NV/RSTA, Fort Monmouth, NJ	1703	413	1-4Q	250	1-4Q	250	1-4Q	Cont.	2866	
Subtotal:			3986	814		250		250		Cont.	Cont.	
Project Total Cost:			67962	74888		47588		20227		Cont.	Cont.	

Schedule Detail (R4a Exhibit)

May 2009

BUDGET ACTIVITY		PE NUMBER AND TITLE						PROJECT	
5 - System Development and Demonstration		0604823A - FIREFINDER						L88	
<u>Schedule Detail</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	
NRE Increment 1 & System Integration	1Q - 4Q	1Q - 4Q	1Q - 4Q						
System Requirements Review (SRR)									
Preliminary Design Review (PDR)									
Critical Design Review (CDR)	2Q								
NRE Increment 2 & System Integration	3Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 2Q					
Initial Production	4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q				
Dev Test/Operational Test (DT/OT) Increment 1		3Q - 4Q							
Dev Test/Operational Test (DT/OT) Increment 2			1Q - 2Q						
First Unit Equipped (FUE) - IP Systems			2Q						
Full Rate Production Decision(FRP)				3Q					

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604827A - Soldier Systems - Warrior Dem/Val				
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	1545	17730	19786	Continuing	Continuing
S56 MOUNTED SOLDIER		17730	19786	Continuing	Continuing
S65 SOLDIER POWER	1545				1545

A. Mission Description and Budget Item Justification: This program element is composed of two projects: Project S56 for Mounted Warrior Soldier System (MWSS) and Project S57 for Land Warrior (LW). MWSS provides combat crewmembers and vehicle commanders in the Current and Future force with increased mission effectiveness on the network centric battlefield in the areas of lethality, command and control, communications, survivability, mobility, and sustainability. MWSS provides the dismounted and mounted combat crewmembers increased capabilities to conduct offensive and defensive operations by providing uninterrupted viewing of their platform and dismounted Soldiers. MWSS Helmet Mounted Display extends fire control information to vehicle crewmembers while they are standing up in, or viewing out of the hatch allowing them to maintain immediate situational awareness of their direct battle space, while simultaneously controlling inter-netted fires, vehicle, or dismounted Soldiers. Project S57 supports the LW concept, a first generation, modular, integrated fighting system focused on the needs of the individual infantry Soldier and Soldiers in support of the close fight. An Army Stryker Battalion was equipped with LW and MW for evaluation purposes in FY 2006. The LW and MW systems proved to be highly reliable and provided a significantly increased level of Battle Command Situational Awareness for dismounted forces and mounted crew members. As a result, the Battalion that was conducting the assessment decided to take the systems to war with them in the Spring of 2007.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

May 2009

BUDGET ACTIVITY	PE NUMBER AND TITLE		
5 - System Development and Demonstration	0604827A - Soldier Systems - Warrior Dem/Val		
<u>B. Program Change Summary</u>	FY 2008	FY 2009	FY 2010
Previous President's Budget (FY 2009)	1589	15790	13901
Current BES/President's Budget (FY 2010)	1545	17730	19786
Total Adjustments	-44	1940	5885
Congressional Program Reductions		-52	
Congressional Rescissions			
Congressional Increases		1992	
Reprogrammings			
SBIR/STTR Transfer	-44		
Adjustments to Budget Years			5885

Change Summary Explanation: Funding - FY 2010 funding increase to support the Mounted Warrior program.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604827A - Soldier Systems - Warrior Dem/Val			PROJECT S56	
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
S56 MOUNTED SOLDIER		17730	19786	Continuing	Continuing

A. Mission Description and Budget Item Justification: Mounted Soldier (MS) provides combat crew members and vehicle commanders in the Current and Future Force with increased mission effectiveness on the network centric battlefield in the areas of lethality, command and control, communications, survivability, mobility and sustainability. The MS integrates the following subsystems into the vehicle platform: 1) Body Gear provides the soldier access to the vehicle intercom system while mounted or dismounted, and a cooling vest; 2) Head Gear provides the mounted soldier the ability to view the platform command and control system through a Soldier worn display; 3) Vehicle Interface Kit provides the Micro-Climate Cooling Unit, Vehicle Mounting Kits (A and B kits), Intercom interface and antennae; and 4) System Connectivity provides required cables, connectors and a cooling hose. The MS equips Combat Vehicle Crewman/Vehicle Commanders on Heavy Brigade Combat Team (HBCT), Stryker Brigade Combat Team (SBCT) and Future Combat Systems (FCS) platforms.

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
FY09 and FY10: Developmental engineering, prototyping, manufacturing, and systems engineering, assessment, contractor testing and program management support for Mounted Soldier (MS) for use in Heavy and Stryker Brigades.		16599	16262
FY09 and FY10: Governmental Test and Evaluation activities		690	3524
FY09: Small Business Innovative Research/Small Business Technology Transfer (SBIR/SBTR)		441	
Total		17730	19786

<u>B. Other Program Funding Summary</u>	FY 2008	FY 2009	FY 2010	To Compl	Total Cost
MS OPA3 M80600000			1085		1085

Comment:

C. Acquisition Strategy The MS acquisition roadmap is comprised of two increments. The MS Increment I is documented in the Mounted Warrior Soldier System (MWSS) Capability Production Document (CPD) and was fielded to the 4/9 IN BN of the 4th SBCT during FY07/08 to maintain tethered voice communications, tethered access to host platform displays, sensors, and sights via a tethered helmet mounted display (HMD). The MS Increment II is documented in the Mounted Soldier System (MSS) Capability Development Document (CDD). Increment II implements a strategy of time-phased development driven by technology maturity, vehicle availability, and user prioritization. Increment II adds wireless voice communications and Micro-Climate cooling. The acquisition approach is centered around vehicle kit development and integration since the planned MS subsystems are using relatively mature technology. The MS program takes advantage of components available from other Government agencies, and

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY

5 - System Development and Demonstration

PE NUMBER AND TITLE

0604827A - Soldier Systems - Warrior Dem/Val

PROJECT

S56

Commercial-Off-the-Shelf (COTS) components and technologies as available.

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
5 - System Development and Demonstration			0604827A - Soldier Systems - Warrior Dem/Val							S56		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Develop and Engineer Mounted Soldier System Wireless Comms	FFP	Thales Communications, Inc., Clarksburg, MD				4187	3Q	3678	1-4Q		7865	
Develop and Engineer Mounted Soldier System Microclimate Cooling	FFP	TBD				3320	3Q	3822	1-4Q		7142	
Develop and Engineer Mounted Soldier System Display	FFP	Rockwell Collins, Carlsbad, CA				2044	2Q	3000	1-4Q		5044	
Subtotal:						9551		10500			20051	
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Mounted Soldier Support	OGA, MIPR	Various				3266		3178	1-4Q		6444	
Subtotal:						3266		3178			6444	
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Various Testing Organizations	OGA, MIPR	ATEC, TTC/YPG/DTC/EPG/ARL-SLAD, etc.	2000			690	1-4Q	3524	1-4Q		9782	
Subtotal:			2000			690		3524			9782	
IV. Management Services	Contract	Performing Activity &	Total	FY 2008	FY 2008	FY 2009	FY 2009	FY 2010	FY 2010	Cost To	Total	Target

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
5 - System Development and Demonstration			0604827A - Soldier Systems - Warrior Dem/Val							S56		
	Method & Type	Location	PYs Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Complete	Cost	Value of Contract
PM Soldier Warrior oversight of MS program	In-House/Task Order	PM Soldier Warrior, Ft. Belvoir, VA				3782	1-4Q	2584	1-4Q		6366	
SBIR/SBTRR						441	1Q				441	
Subtotal:						4223		2584			6807	
Project Total Cost:			2000			17730		19786			43084	

Schedule Profile (R4 Exhibit)

May 2009

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604827A - Soldier Systems - Warrior Dem/Val

PROJECT
S56

Event Name	FY 08				FY 09				FY 10				FY 11				FY 12				FY 13				FY 14				FY 15			
	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
MWSS Increment I - Deployed with 4/9 IN BN	MS Increment I - Deployed with 4/9 IN BN																															
(1) MS Increment II - Milestone B	MS Increment II - Milestone B Decision																															
MS Increment II - EMD HBCT	MS Increment II - EMD HBCT																															
(2) MS Increment II - Milestone C	MS Increment II - Milestone C Decision																															
MS Increment II - LRIP HBCT	MS Increment II - LRIP HBCT																															
Independent Operational Test and Evaluation (IOTE)	IOTE																															
MS Increment II - Production HBCT	MS Increment II - Production HBCT																															
MS Increment II - EMD SBCT	MS Increment II - EMD SBCT																															
MS Increment II - EMD FCS	MS Increment II - EMD FCS																															

Schedule Detail (R4a Exhibit)

May 2009

BUDGET ACTIVITY		PE NUMBER AND TITLE						PROJECT	
5 - System Development and Demonstration		0604827A - Soldier Systems - Warrior Dem/Val						S56	
<u>Schedule Detail</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	
MWSS Increment I - Deployed with 4/9 IN BN	1Q - 4Q								
MS Increment II - Milestone B	1Q								
MS Increment II - EMD HBCT		1Q - 4Q	1Q - 3Q						
MS Increment II - Milestone C			4Q						
MS Increment II - LRIP HBCT			4Q	1Q - 4Q	1Q - 2Q				
Independent Operational Test and Evaluation (IOTE)				4Q	1Q				
MS Increment II - Production HBCT					3Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	
MS Increment II - EMD SBCT				1Q - 4Q	1Q - 4Q				
MS Increment II - EMD FCS						2Q - 4Q	1Q - 4Q	1Q - 4Q	

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration		PE NUMBER AND TITLE 0604827A - Soldier Systems - Warrior Dem/Val			PROJECT S65
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
S65 SOLDIER POWER	1545				1545

A. Mission Description and Budget Item Justification: Congressional adds in FY08 and FY09 support the M-25 Defense Acquisition Challenge Program Fuel Cell by focusing on solutions that reduce the M-25 system weight and complexity, and increase energy density to accomplish the most lightweight and compact power source possible. Soldier Fuel Cells will provide more power in a smaller, lighter weight package compared to batteries thereby lightening the Soldiers' carried load.

\$2 Million should be reflected in FY09. This funding has been received by PEO Soldier.

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
FY08 and FY09: Congressional adds are combined to provide developmental and system improvement efforts to the M-25 Soldier Fuel Cell System.	1545		
FY09: Small Business Innovative Research/Small business Technology Transfer (SBIR/SBTTR)			
Total	1545		

B. Other Program Funding Summary Not applicable for this item.

C. Acquisition Strategy Not applicable for this item.

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
5 - System Development and Demonstration			0604827A - Soldier Systems - Warrior Dem/Val							S65		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Development and System Improvements to M-25	TBD	TBD		1545	4Q		3Q				1545	
SBIR/SBTRR							1Q					
Subtotal:				1545							1545	
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:												
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:												
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:												
Project Total Cost:				1545							1545	

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

May 2009

BUDGET ACTIVITY	PE NUMBER AND TITLE				
5 - System Development and Demonstration	0604854A - Artillery Systems - EMD				
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	30603	33190	23318	Continuing	Continuing
509 LIGHTWEIGHT 155M HOWITZER	2960	5552	5645		14157
516 PALADIN/FAASV	27643	27638	17673	Continuing	Continuing

A. Mission Description and Budget Item Justification: This program element supports the Joint Light Weight 155mm Howitzer (LW155) and the Paladin/FAASV Improvement programs.

The LW155, a joint program with the Marine Corps, provides the replacement for the current 1970's vintage M198, 155mm Towed Howitzer. The LW155 provides significant improvement in strategic and tactical mobility over the M198. Project 509 supports Towed Artillery Digitization (TAD) Block II, a software upgrade to the digital fire control system for the M777A2(LW155).

The Paladin Integrated Management (PIM) Program which began in FY08 is incorporating a fleet management strategy that addresses obsolescence, reliability, maintainability, and supportability faced on the current fleet platforms (M109A6 and M992A2). The focus is on the following obsolescence areas: power train, suspension, power management, and electronic sub-systems. This allows the opportunity to touch the following areas: next generation fire control system, navigation system, communication/data transfer, Vehicle Health Management System (VHMS), and improved gun drive system. These system level improvements enhance the Paladin mission effectiveness, increase reliability as well as reduce life cycle costs and address electronic obsolescence with the obsolete components and provide the Army with a more viable platform which meets the needs of the maneuver commander out till 2050.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

May 2009

BUDGET ACTIVITY	PE NUMBER AND TITLE		
5 - System Development and Demonstration	0604854A - Artillery Systems - EMD		
<u>B. Program Change Summary</u>	FY 2008	FY 2009	FY 2010
Previous President's Budget (FY 2009)	24067	42300	23808
Current BES/President's Budget (FY 2010)	30603	33190	23318
Total Adjustments	6536	-9110	-490
Congressional Program Reductions		-9110	
Congressional Rescissions			
Congressional Increases			
Reprogrammings	7209		
SBIR/STTR Transfer	-673		
Adjustments to Budget Years			-490

Change Summary Explanation: Funding - FY 2008: Funds reprogrammed to support Paladin requirements.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604854A - Artillery Systems - EMD			PROJECT 509	
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
509 LIGHTWEIGHT 155M HOWITZER	2960	5552	5645		14157

A. Mission Description and Budget Item Justification: The Lightweight 155mm (LW155) Towed Howitzer, a jointly managed program with the Marine Corps, replaces the M198, 155mm Towed Howitzer. LW155 provides significant strategic and tactical mobility improvements. Project 509 supports Towed Artillery Digitization (TAD) Block II, an upgrade to the digital fire control system for the M777A2 (LW155).

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
Funds Matrix Support Software Engineers for TAD Block II Software Development	2960	5397	5645
Small Business Innovative Research/Small Business Technology Transfer Programs (SBIR/STTR)		155	
Total	2960	5552	5645

<u>B. Other Program Funding Summary</u>	FY 2008	FY 2009	FY 2010	To Compl	Total Cost
Procurement, Marine Corps LW155 Towed Howitzer with TAD Prod, BLIN 218500	235502	71493	61420		368415
Procurement, WTCV, Army, LW155 with TAD G01700	470591	112871	157568		741030

Comment: FY 2010 WTCV Base funding in the amount of \$49572 will procure 17 Lightweight 155MM Towed Howitzers (LW155).
FY 2010 OCO funding in the amount of \$107996 will procure 36 Lightweight 155MM Towed Howitzers (LW155).

C. Acquisition Strategy Towed Artillery Digitization (TAD) is an evolutionary acquisition strategy for the Lightweight 155mm Towed Howitzer (LW155). Block 0 consisted of "glass and iron" optical sights as the weapon's fire control. Block 1 TAD incorporated digitized aiming and pointing which increased accuracy and enabled a battery of howitzers to emplace and engage the enemy within 2 to 3 minutes as opposed to 15 to 20 minutes. Block 1a added the ability for the LW155 Howitzer to fire the XM982 Excalibur Precision Munition. Funding identified above will be used to upgrade to Block 2, which is the objective TAD configuration. The primary benefit of TAD Block 2 will be the addition of mission processing capability at the platform, enabling enhanced responsiveness and flexibility to the battlefield commander. It will also integrate a Muzzle Velocimeter for increased accuracy.

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
5 - System Development and Demonstration			0604854A - Artillery Systems - EMD							509		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Funds Matrix Support Software Engineers for TAD Software Development		ARDEC, Picatinny Arsenal, NJ		2960	1Q	5397	1Q	5645	1Q		14002	
SBIR/STTR						155					155	
Subtotal:				2960		5552		5645			14157	
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:												
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:												
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:												
Project Total Cost:				2960		5552		5645			14157	

Schedule Profile (R4 Exhibit)

May 2009

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604854A - Artillery Systems - EMD

PROJECT
509

Event Name	FY 08				FY 09				FY 10				FY 11				FY 12				FY 13				FY 14				FY 15			
	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) IBR	[Red shaded area]																															
Trade Study / Downselect	[Blue bar]																															
Software Requirements Definition	[Blue bar]																															
Preliminary Design	[Blue bar]																															
(2) Preliminary Design Review	[Blue triangle]																															
Detailed Design	[Blue bar]																															
Component Qualification Testing	[Blue bar]																															
Coding and Unit Test	[Blue bar]																															
(3) Coding Complete	[Blue triangle]																															
Integration and Engineering Evaluation Test	[Blue bar]																															
Software Formal Qualification Test	[Blue bar]																															

Schedule Detail (R4a Exhibit)

May 2009

BUDGET ACTIVITY		PE NUMBER AND TITLE						PROJECT	
5 - System Development and Demonstration		0604854A - Artillery Systems - EMD						509	
<u>Schedule Detail</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	
IBR	1Q								
Trade Study / Downselect	1Q								
Software Requirements Definition	2Q								
Preliminary Design	2Q - 4Q								
Preliminary Design Review		1Q							
Detailed Design		1Q - 4Q							
Component Qualification Testing			1Q - 2Q						
Coding and Unit Test			2Q - 3Q						
Coding Complete			3Q						
Integration and Engineering Evaluation Test			3Q - 4Q						
Software Formal Qualification Test			4Q						

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604854A - Artillery Systems - EMD			PROJECT 516	
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
516 PALADIN/FAASV	27643	27638	17673	Continuing	Continuing

A. Mission Description and Budget Item Justification: The Paladin Integrated Management (PIM) Program is incorporating a fleet management strategy that addresses obsolescence, reliability, maintainability, and supportability faced on the current fleet platforms (M109A6 and M992A2). PIM focuses on the following obsolescence areas: power train, suspension, power management, and electronic sub-systems. These system level changes address obsolescence and sustainment issues on the current fleet, increase reliability and maneuverability as well as reduce life cycle costs. PIM provides the Army with a more viable platform which meets the needs of the maneuver commander out till 2050.

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
Paladin Integrated Management (PIM) Development	27643	21176	10112
Test and Evaluation		5689	7200
Program management			361
Small Business Innovative Research/Small Business Technology Transfer Program		773	
Total	27643	27638	17673

<u>B. Other Program Funding Summary</u>	FY 2008	FY 2009	FY 2010	To Compl	Total Cost
PA, WTCV, Paladin/FAASV	60448	28828	134123		223399

Comment: These funds cover the current Paladin/FAASV fleet and PIM production efforts starting in FY09.

C. Acquisition Strategy The PIM program is part of the overall HBCT fleet management strategy for the Paladin/Field Artillery Ammunition Support Vehicle (FAASV) to address ongoing obsolescence issues and ensure long term sustainment of these systems. The PIM program leverages both Government and Contractor capabilities in developing a system's level approach to address the obsolescence issues through the integration of proven Bradley and Future Combat Systems(FCS) common components (power train, suspension and electronics) into a new chassis. To obtain the best value for the Army, PM Fire Support Platform (FSP) is using the Original Equipment Manufacturer (OEM) as the system integrator for developing and producing these Paladin/FAASV Integrated Management (PIM) vehicles. The PIM development/integration effort began in FY08 utilizing a System Technical Support (STS) work directive that covered System Functional Review (SFR), Preliminary Design Review (PDR) and Critical Design Review (CDR) system engineering activities and early procurement of key components to support the building of 5 Howitzers/2 FAASVs that will undergo Government Testing in FY09-11. In FY09, the PM awarded a cost reimbursable R&D contract for the completion of PIM development efforts and the fabrication, assembly and delivery of 7 prototypes (5

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY

5 - System Development and Demonstration

PE NUMBER AND TITLE

0604854A - Artillery Systems - EMD

PROJECT

516

howitzers/2 FAASV) for Government testing (Development Testing, Limited User Ttest, and Live Fire). In FY10, after Milestone C approval, the PM anticipates awarding a contract for the fabrication and delivery of 13 PIM sets (13 Paladins and 13 FAASV's) as part of Low Rate Initial Production (LRIP) of which 8 sets will be used for Initial Operational Test (IOT) testing.

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
5 - System Development and Demonstration			0604854A - Artillery Systems - EMD							516		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Component Design and Software Development	STS/CPFF	Northrop Grumman, Carson, CA	5027								5027	6250
System Integration	STS/CPFF	BAE Systems, York, Pa	4834								4569	7304
TDP Development	MIPR	Other Gov't Agencies	452								452	452
Software Development & System Integration	MIPR	TACOM-ARDEC, Picatinny, NJ	10990								7093	4136
PIM Development	STS/CPFF	BAE		26531	2Q	21949	2Q	10112	2Q		58592	
Initiate PIM IPT Structure	STS/CPFF	BAE/Northrup Grumman	1688								1327	966
Subtotal:			22991	26531		21949		10112			77060	19108
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Logistics	MIPR	TACOM-ACALA, Moline, IL	229								229	370
TARDEC			367								367	
Engineering	MIPR	Various									820	
Subtotal:			596								1416	370
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Component Level Testing	MIPR	TACOM-ARDEC, Picatinny, NJ	953								953	1158

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration			PE NUMBER AND TITLE 0604854A - Artillery Systems - EMD							PROJECT 516		
System Level Testing	MIPR	Various OGAs	930	1002	2Q	5689	2Q	7200	2Q		14821	4022
Subtotal:			1883	1002		5689		7200			15774	5180

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
PMO Support	NA	PM Paladin/FAASV, Picatinny, NJ/TACOM	1213	110	2Q			361	2Q		1684	995
Subtotal:			1213	110				361			1684	995

Project Total Cost:	26683	27643		27638		17673		95934	25653
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Schedule Profile (R4 Exhibit)

May 2009

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604854A - Artillery Systems - EMD

PROJECT
516

Event Name	FY 08				FY 09				FY 10				FY 11				FY 12				FY 13				FY 14				FY 15							
	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				
PIM Development and Integration																																				
Critical Design Review																																				
Contractor Testing																																				
Government Development Test																																				
Live Fire Testing																																				
Milestone C																																				
Low Rate Initial Production Contract																																				
Low Rate Initial Production Deliveries																																				
Full Rate Production																																				

Schedule Detail (R4a Exhibit)

May 2009

BUDGET ACTIVITY		PE NUMBER AND TITLE						PROJECT	
5 - System Development and Demonstration		0604854A - Artillery Systems - EMD						516	
<u>Schedule Detail</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	
Initiate PIM IPT Structure									
PIM Development and Integration	2Q - 4Q	1Q - 4Q	1Q - 3Q						
Critical Design Review		1Q							
Contractor Testing		3Q - 4Q							
Government Development Test		4Q	1Q - 4Q	1Q - 2Q					
Live Fire Testing		1Q - 4Q	1Q - 4Q	1Q - 4Q					
Milestone C			3Q						
Low Rate Initial Production Contract			3Q - 4Q						
Low Rate Initial Production Deliveries				3Q - 4Q	1Q				
Full Rate Production					3Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

May 2009

BUDGET ACTIVITY		PE NUMBER AND TITLE			
5 - System Development and Demonstration		0604869A - Patriot/MEADS Combined Aggregate Program (CAP)			
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
M06 PATRIOT/MEADS COMBINED AGGREGATE PROGRAM (CAP)	401565	429846	569182	Continuing	Continuing

A. Mission Description and Budget Item Justification: Medium Extended Air Defense System (MEADS) is a tri-national co-development program among the United States, Germany, and Italy to replace the U.S. PATRIOT air defense systems, PATRIOT and HAWK systems in Germany, and NIKE Hercules systems in Italy. Participating countries will sign a Memorandum Of Understanding (MOU) for each successive program phase. The NATO MEADS Management Agency (NAMEADSMA) is the North Atlantic Treaty Organization (NATO) contracting authority providing management of the MEADS program on behalf of the participating nations and is responsible for managing the system acquisition. The U.S. and Italy signed the Design and Development (D&D) MOU on September 24, 2004, and September 27, 2004, respectively. The NAMEADSMA awarded the MEADS D&D letter contract to MEADS International Inc. on September 28, 2004, initiating the MEADS D&D phase. The MOU was amended in March 2005 by the U.S. and Italy to allow the German Parliament additional time for their signature decision and on April 22, 2005 Germany signed the MOU. NAMEADSMA awarded a \$3.4 billion D&D definitized contract to MEADS International Inc. on May 31, 2005. Within the PATRIOT/MEADS Combined Aggregate Program (CAP) there are two synergistic efforts: an international MEADS development effort managed by NAMEADSMA, and a U.S. effort to inject U.S.-specific capability requirements into the MEADS Major End Items (MEIs).

MEADS will provide joint and coalition forces, critical asset and defended area protection against multiple and simultaneous attacks by short to medium range ballistic missiles, cruise missiles, unmanned aerial vehicles and tactical air-to-surface missiles. MEADS will have a netted and distributed architecture with modular components to increase survivability and flexibility of employment in a number of operational configurations. The objective MEADS Fire Unit, which will be scalable and tailorable to operational requirements, will consist of: two Battle Management Command, Control, Communication, Computers and Intelligence (BMC4I) tactical operations center (TOC), enabling distributed system operations and Beyond-Line-of-Site (BLOS) engagements for maximum protection of supported forces by engaging at longer ranges; six near-vertical launchers capable of transporting and launching up to eight missiles; three launcher reloaders; the PAC-3 Missile Segment Enhancement (MSE); an ultra-high frequency (UHF) Surveillance Radar (SR) that provides 360-degree coverage and near-range to long-range detection of low radar cross-section targets; and two X-band Multifunction Fire Control Radars (MFCR) that provide 360-degree coverage and are designed for high-precision handover to the in-flight missile, discrimination capabilities, and short-range target detection and horizon search.

In addition, MEADS will provide significant improvements in strategic deployability, transportability, mobility and maneuverability. Its substantially reduced lift requirements enable MEADS to be deployed rapidly with essential combat loads via inter/intra-theater land, sea, and airlift anywhere in the world. MEADS will provide Combatant Commanders with an Air Missile Defense (AMD) system that is fully transportable by C-130 aircraft, thus increasing strategic and tactical mobility. Further, its decreased size/weight and ability to conduct rapid march order and system emplacement will enhance maneuverability, thereby providing better AMD protection to maneuvering forces.

The PAC-3 system is continuously being improved via hardware and software changes. The latest missile improvement is the MSE and has been accepted as the baseline missile for MEADS. It is being developed by the U.S. for PATRIOT to meet U.S. operational requirements. The MSE will provide a more agile and lethal interceptor that increases the engagement envelope/defended area of PATRIOT and the MEADS systems. The MSE improves upon the current PAC-3 missile capability with a higher performance solid rocket motor, modified lethality enhancer, more responsive control surfaces, upgraded guidance software, and insensitive munitions improvements.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

May 2009

BUDGET ACTIVITY

PE NUMBER AND TITLE

5 - System Development and Demonstration

0604869A - Patriot/MEADS Combined Aggregate Program (CAP)

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604869A - Patriot/MEADS Combined Aggregate Program (CAP)
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<u>B. Program Change Summary</u>	FY 2008	FY 2009	FY 2010
Previous President's Budget (FY 2009)	369786	431270	585597
Current BES/President's Budget (FY 2010)	401565	429846	569182
Total Adjustments	31779	-1424	-16415
Congressional program reductions		-1424	
Congressional rescissions			
Congressional increases			
Reprogrammings	42126		
SBIR/STTR Transfer	-10347		
Adjustments to Budget Years			-16415

Change Summary Explanation: Funding -FY 2008 reprogramed funds for MSE and PAC-3 GPU; FY 2010 funds realigned to support Army higher priority requirements;

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration		PE NUMBER AND TITLE 0604869A - Patriot/MEADS Combined Aggregate Program (CAP)			PROJECT M06
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
M06 PATRIOT/MEADS COMBINED AGGREGATE PROGRAM (CAP)	401565	429846	569182	Continuing	Continuing

A. Mission Description and Budget Item Justification: Medium Extended Air Defense System (MEADS) is a tri-national co-development program among the United States, Germany, and Italy to replace the U.S. PATRIOT air defense systems, PATRIOT and HAWK systems in Germany, and NIKE Hercules systems in Italy. Participating countries will sign a Memorandum Of Understanding (MOU) for each successive program phase. The NATO MEADS Management Agency (NAMEADSMA) is the North Atlantic Treaty Organization (NATO) contracting authority providing management of the MEADS program on behalf of the participating nations and is responsible for managing the system acquisition. The U.S. and Italy signed the Design and Development (D&D) MOU on September 24, 2004, and September 27, 2004, respectively. The NAMEADSMA awarded the MEADS D&D letter contract to MEADS International Inc. on September 28, 2004, initiating the MEADS D&D phase. The MOU was amended in March 2005 by the U.S. and Italy to allow the German Parliament additional time for their signature decision and on April 22, 2005 Germany signed the MOU. NAMEADSMA awarded a \$3.4 billion D&D definitized contract to MEADS International Inc. on May 31, 2005. Within the PATRIOT/MEADS Combined Aggregate Program (CAP) there are two synergistic efforts: an international MEADS development effort managed by NAMEADSMA, and a U.S. effort to inject U.S.-specific capability requirements into the MEADS Major End Items (MEIs).

MEADS will provide joint and coalition forces, critical asset and defended area protection against multiple and simultaneous attacks by short to medium range ballistic missiles, cruise missiles, unmanned aerial vehicles and tactical air-to-surface missiles. MEADS will have a netted and distributed architecture with modular components to increase survivability and flexibility of employment in a number of operational configurations. The objective MEADS Fire Unit, which will be scalable and tailorable to operational requirements, will consist of: two Battle Management Command, Control, Communication, Computers and Intelligence (BMC4I) tactical operations center (TOC), enabling distributed system operations and Beyond-Line-of-Site (BLOS) engagements for maximum protection of supported forces by engaging at longer ranges; six near-vertical launchers capable of transporting and launching up to eight missiles; three launcher reloaders; the PAC-3 Missile Segment Enhancement (MSE); an ultra-high frequency (UHF) Surveillance Radar (SR) that provides 360-degree coverage and near-range to long-range detection of low radar cross-section targets; and two X-band Multifunction Fire Control Radars (MFCR) that provide 360-degree coverage and are designed for high-precision handover to the in-flight missile, discrimination capabilities, and short-range target detection and horizon search.

In addition, MEADS will provide significant improvements in strategic deployability, transportability, mobility and maneuverability. Its substantially reduced lift requirements enable MEADS to be deployed rapidly with essential combat loads via inter/intra-theater land, sea, and airlift anywhere in the world. MEADS will provide Combatant Commanders with an Air Missile Defense (AMD) system that is fully transportable by C-130 aircraft, thus increasing strategic and tactical mobility. Further, its decreased size/weight and ability to conduct rapid march order and system emplacement will enhance maneuverability, thereby providing better AMD protection to maneuvering forces.

The PAC-3 system is continuously being improved via hardware and software changes. The latest missile improvement is the MSE and has been accepted as the baseline missile for MEADS. It is being developed by the U.S. for PATRIOT to meet U.S. operational requirements. The MSE will provide a more agile and lethal interceptor that increases the engagement envelope/defended area of PATRIOT and the MEADS systems. The MSE improves upon the current PAC-3 missile capability with a higher performance solid rocket motor, modified lethality enhancer, more responsive control surfaces, upgraded guidance software, and insensitive munitions improvements.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604869A - Patriot/MEADS Combined Aggregate Program (CAP)	PROJECT M06
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<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
Continue the U.S. contribution to the North Atlantic Treaty Organization (NATO) MEADS Management Agency (NAMEADSMA) International Program Office operational (prime contract) and administrative (support contracts/personnel/travel) budgets to manage the Design and Development (D&D) Phase contract to design, build, test and evaluate the production representative MEADS hardware.	289418	380121	413289
Implement program integration efforts to support transition from PATRIOT to development and fielding of US MEADS capability. This includes assessment of performance against US Threat and operational requirements to identify gaps / shortfalls; development and management of US MEADS programs to address unique US requirements; MEADS-IBCS compatibility; development of a US MEADS testbed, US MEADS sensor performance upgrades; PAC-3 CRI Compatibility; and US MEADS Production and Fielding efforts (required materiel release certifications, planning for US MEADS IOT&E , and required US logistics facilitization and training efforts).	74019	8207	87400
Continue management, support and salaries for the national and international program offices.	8328	3611	8236
Includes US only efforts to support Exciter & Exportable Missile Model and Missile Segment Enhancement. Includes White Sands Missile Range (WSMR) Support and Targets.	29800	25870	60257
Small Business Innovative Research/Small Business Technology Transfer Programs		12037	
Total	401565	429846	569182

<u>B. Other Program Funding Summary</u>	FY 2008	FY 2009	FY 2010	To Compl	Total Cost
SSN C50001, Patriot/MEADS CAP		30957	16406	Continuing	Continuing
PE 0102419A, Proj E55, JLENS	464877	355257	360076	Continuing	Continuing
PE 0604082A, Proj S23, SLAMRAAM	33570	33662	11736	Continuing	Continuing
SSN C81002, SLAMRAAM Launcher		40349	72920	Continuing	Continuing
PE 0604820A, Proj E10, SENTINEL	6828			Continuing	Continuing
PE 0603327A, Proj S34, AMD System of System Engineering and Integration	123712	114673	209531	Continuing	Continuing

Comment: PAC-3 / MEADS CAP RDTE funding was combined under PE0604869A beginning in FY06. This program is an integral part of the PEO, Missiles and Space Integrated Air and Missile Defense (IAMD) architecture.

C. Acquisition Strategy On 1 July 2004, the Defense Acquisition Board approved the Acquisition Strategy (AS) for the PATRIOT/MEADS CAP Milestone B. On 6 April 2006, the Lower Tier Project Manager submitted a Program Deviation Report (PDR) to notify the Under Secretary of Defense for Acquisition, Technology, and Logistics, of changes affecting the 6 August 2004, approved PATRIOT/MEADS CAP Acquisition Program Baseline (APB). On 9 February 2006, the Army System Acquisition Review

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY

5 - System Development and Demonstration

PE NUMBER AND TITLE

0604869A - Patriot/MEADS Combined Aggregate Program (CAP)

PROJECT

M06

Council (ASARC) approved establishment of the Integrated Air and Missile Defense (IAMD) Project Office (PO) to lead development efforts for the Army IAMD. On 8 May 2006, the Army established the IAMD PO which will manage the U.S. Army's initiatives to implement the user's operational concept from a System-Centric focus to a Network-Centric, Component-Based (Plug and Fight) architecture. The lead proponent for the U.S. oversight of the International MEADS Battle Management Command, Control, Communications, Computers and Intelligence (BMC4I) effort now resides with the IAMD PO. The PATRIOT/MEADS CAP Acquisition Program Baseline and Acquisition Strategy will be modified to reflect these changes.

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
5 - System Development and Demonstration			0604869A - Patriot/MEADS Combined Aggregate Program (CAP)							M06		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Design and Development	CPIF	NAMEADSMA, Huntsville, AL	365600	284500	2-3Q	387937	2-3Q	408600	2-3Q	Cont.	Cont.	
Missile Segment Enhancement - Lockheed Martin Missiles and Fire Control (LMMFC)	SS-CPIF	LMMFC, Dallas, TX	73000	22200	2Q			26000	2-3Q	Cont.	Cont.	
Missile Segment Enhancement (MSE) - Raytheon	SS-FP	Raytheon, Boston, MA	31800	5800	1-2Q	8000	2-3Q	6000	1-3Q	Cont.	Cont.	
Program Integration	N/A	Various, Huntsville, AL	94921	48738	1-2Q	2528	1-2Q	49129	1-3Q	Cont.	Cont.	
U.S. Only Security / Exciter	N/A	Lockheed Martin, Syracuse, NY, Dallas, TX & Orlando, FL	35900	500		16800	1-2Q	17257	3Q	Cont.	Cont.	
U. S. Other Government Agencies (OGA's)	N/A	Various, Huntsville, AL	23914	514	1-2Q			7735	1-3Q	Cont.	Cont.	
In-House	N/A	PO, Huntsville, AL	29940	10977	1-4Q	3753	1-4Q	12071	1-4Q	Cont.	Cont.	
U.S. Only Combined Aggregate Program (CAP)	N/A	Various, Huntsville, AL & Dallas, TX	67150							Cont.	Cont.	
Design and Development Government Furnished Equipment (GFE) Procurement Efforts	N/A	TACOM, Warren, MI	14087	888	2-3Q					Cont.	Cont.	
Subtotal:			736312	374117		419018		526792		Cont.	Cont.	
II. Support Costs			Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
International Program Office	N/A	NAMEADSMA, Huntsville, AL	8256	4030	2Q	4221	2Q	4689	1-3Q	Cont.	Cont.	
U.S. Contracts	CPFF; CPIF	Various, Huntsville, AL	36380	7185	2Q			14465	1-3Q	Cont.	Cont.	
Systems Engineering	N/A	MRDEC, Huntsville,	20641	6104	2Q	1926	2Q	4000	1-3Q	Cont.	Cont.	

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration			PE NUMBER AND TITLE 0604869A - Patriot/MEADS Combined Aggregate Program (CAP)							PROJECT M06		
		AL										
Subtotal:			65277	17319		6147		23154		Cont.	Cont.	

III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Range Support/Facilities	N/A	WSMR, White Sands, NM/Ft Wingate, White Sands NM	8400	1800	2-3Q	1070	1-3Q	3000	2-3Q	Cont.	Cont.	
Targets/Threat	N/A	Various	35400					6500	2-3Q	Cont.	Cont.	
Modeling and Simulation	N/A	AMRDEC, Huntsville, AL	8000					1500	2-3Q	Cont.	Cont.	
Subtotal:			51800	1800		1070		11000		Cont.	Cont.	

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Internal Operating	N/A	NAMEADSMA, Huntsville, AL	18204	8329	2-3Q	3611	2-3Q	8236	1-4Q	Cont.	Cont.	
Subtotal:			18204	8329		3611		8236		Cont.	Cont.	

Project Total Cost:			871593	401565		429846		569182		Cont.	Cont.	
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Schedule Profile (R4 Exhibit)

May 2009

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604869A - Patriot/MEADS Combined Aggregate Program (CAP)

PROJECT
M06

Event Name	FY 08				FY 09				FY 10				FY 11				FY 12				FY 13				FY 14				FY 15			
	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) PDB 6.5 Fielding									▲ PDB 6.5																							
Missile Segment Enhancement (MSE) Development (CAP Funded)									MSE DEVELOPMENT																							
MSE Test									MSE Test																							
MEADS Incremental System PDR: Preliminary Design Review																																
(2) MEADS System CDR: Critical Design Review																	▲															

Schedule Detail (R4a Exhibit)

May 2009

BUDGET ACTIVITY		PE NUMBER AND TITLE						PROJECT
5 - System Development and Demonstration		0604869A - Patriot/MEADS Combined Aggregate Program (CAP)						M06
<u>Schedule Detail</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>
PDB 6.5 Fielding			1Q					
Missile Segment Enhancement (MSE) Development (CAP Funded)	1Q - 4Q	1Q - 4Q	1Q - 4Q					
MSE Test	2Q - 4Q	1Q - 4Q	1Q - 4Q					
MEADS Incremental System PDR: Preliminary Design Review	1Q							
MEADS System CDR: Critical Design Review			4Q					

Termination Liability Funding For Major Defense Acquisition Programs, RDT&E Funding (R5)		May 2009	
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT	
5 - System Development and Demonstration	0604869A - Patriot/MEADS Combined Aggregate Program (CAP)	M06	
Funding in \$000			
Program	FY 2008	FY 2009	FY 2010
Patriot/MEADS CAP			
Total Termination Liability Funding:			
<p>Remarks: The Patriot/Meads CAP Prime Contract Incorporates the "Limitation Of Funds" Clause (DFARS 52.232-22) To Limit The Government's Liability. For the Patriot Meads CAP Program, The "Limitation Of Funds" Clause Limits The Government's Financial Liability Per The Contract To Those Funds Placed On Contract Plus Any Outstanding Commitments Plus Costs Associated With The Orderly Termination Of Contractual Actions.</p>			

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

May 2009

BUDGET ACTIVITY		PE NUMBER AND TITLE			
5 - System Development and Demonstration		0604870A - Nuclear Arms Control Monitoring Sensor Network			
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
SE1 NACT SENSOR ENGINEERING	6980	6240	7140	Continuing	Continuing

A. Mission Description and Budget Item Justification: This project provides Research, Development, Testing & Evaluation (RDTE) to meet technology requirements in support of implementation, compliance, monitoring and inspection for existing and emerging nuclear arms control activities and dual use technology for missile defense integration activities. The project addresses requirements validated by the Office of the Under Secretary of Defense, Acquisition, Technology & Logistics (OUSD AT&L). This project conforms to the administration's research and development priorities as related to Weapons of Mass Destruction (WMD) arms control and disarmament. Technical assessments are made to provide the basis for sound project development, evaluate existing programs and provide the data required to make compliance judgments and support US policy, decision-makers and negotiating teams. Technology developments and system improvement projects are conducted to ensure that capabilities for monitoring systems are available when required.

Primary emphasis is on improved sensor capabilities and improved detection and assessment capabilities against a wide range of threat origins.

The program includes development of equipment and procedures for data exchanges, inspections and monitoring capability and analysis. The technologies and procedures developed in the arms control technology program provide an invaluable source of information on equipment and procedures that is extensively used by US and international agencies. This project also supports the warfighting capability area of combating Weapons of Mass Destruction (WMD).

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

May 2009

BUDGET ACTIVITY	PE NUMBER AND TITLE		
5 - System Development and Demonstration	0604870A - Nuclear Arms Control Monitoring Sensor Network		
<u>B. Program Change Summary</u>	FY 2008	FY 2009	FY 2010
Previous President's Budget (FY 2009)	7253	6260	
Current BES/President's Budget (FY 2010)	6980	6240	7140
Total Adjustments	-273	-20	7140
Congressional Program Reductions		-20	
Congressional Rescissions			
Congressional Increases			
Reprogrammings	-70		
SBIR/STTR Transfer	-203		
Adjustments to Budget Years			7140

Change Summary Explanation: Funding - FY 2010 funding increase to continue the Defense Nuclear Arms Control Technology Program.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration		PE NUMBER AND TITLE 0604870A - Nuclear Arms Control Monitoring Sensor Network			PROJECT SE1
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
SE1 NACT SENSOR ENGINEERING	6980	6240	7140	Continuing	Continuing

A. Mission Description and Budget Item Justification: This project provides Research, Development, Testing & Evaluation (RDTE) to meet technology requirements in support of implementation, compliance, monitoring and inspection for existing and emerging nuclear arms control activities and dual use technology for missile defense integration activities. The project addresses requirements validated by the Office of the Under Secretary of Defense, Acquisition, Technology & Logistics (OUSD AT&L). This project conforms to the administration's research and development priorities as related to Weapons of Mass Destruction (WMD) arms control and disarmament. Technical assessments are made to provide the basis for sound project development, evaluate existing programs and provide the data required to make compliance judgments and support US policy, decision-makers and negotiating teams. Technology developments and system improvement projects are conducted to ensure that capabilities for monitoring systems are available when required.

Primary emphasis is on improved sensor capabilities and improved detection and assessment capabilities against a wide range of threat origins.

The program includes development of equipment and procedures for data exchanges, inspections and monitoring capability and analysis. The technologies and procedures developed in the arms control technology program provide an invaluable source of information on equipment and procedures that is extensively used by US and international agencies. This project also supports the warfighting capability area of combating Weapons of Mass Destruction (WMD).

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
Conduct analyses as required to support the OSD treaty manager.	430	305	340
Continue development of a prototype sensor.	1300	1200	1400
Continue development of radionuclide particle and noble gas detectors	325	400	400
Continue Information management systems enhancements	1200	1200	1500
Continue the R&D support system	700	660	900
Continue on-location research of calibration for infrasound events	350	400	500
Continue development of techniques to identify signals from sensor systems	1250	1000	1300
Continue development of nuclear detection and measurement systems	1425	900	800
Small Business Innovative Research/Small Business Technology Transfer Programs		175	
Total	6980	6240	7140

B. Other Program Funding Summary Not applicable for this item.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY

5 - System Development and Demonstration

PE NUMBER AND TITLE

0604870A - Nuclear Arms Control Monitoring Sensor Network

PROJECT

SE1

C. Acquisition Strategy Not applicable for this item.

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
5 - System Development and Demonstration			0604870A - Nuclear Arms Control Monitoring Sensor Network							SE1		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Product Development	Various	MS, VA	1731	2428	1-3Q	2400	1-3Q	2300	1-3Q	Cont.	Cont.	
Subtotal:			1731	2428		2400		2300		Cont.	Cont.	
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Monitoring Sensor Systems, Program Data Analysis, Verification Systems Concept Demo	Various	SAIC, General Dynamics, VA	2615	1957	1-4Q	1600	1-4Q	1600	1-4Q	Cont.	Cont.	
Support Contracts & Government Support	Various	FL, NM, VA, AL	1347	1165	1-4Q	760	1-4Q	1200	1-4Q	Cont.	Cont.	
SMDC Support	Various	Huntsville, AL	500	500	1-4Q	500	1-4Q	1200	1-4Q	Cont.	Cont.	
Subtotal:			4462	3622		2860		4000		Cont.	Cont.	
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Test and Evaluation	Various	Huntsville, AL	500	430	2-3Q	480	2-3Q	340	1-4Q	Cont.	Cont.	
Subtotal:			500	430		480		340		Cont.	Cont.	
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
SMDC Support	Various	Huntsville, AL	500	500	1-4Q	500	1-4Q	500	1-4Q	Cont.	Cont.	

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY	PE NUMBER AND TITLE						PROJECT	
5 - System Development and Demonstration	0604870A - Nuclear Arms Control Monitoring Sensor Network						SE1	
Subtotal:	500	500		500		500	Cont.	Cont.
Project Total Cost:	7193	6980		6240		7140	Cont.	Cont.

Schedule Profile (R4 Exhibit)

May 2009

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604870A - Nuclear Arms Control Monitoring Sensor Network

PROJECT
SE1

Event Name	FY 08				FY 09				FY 10				FY 11				FY 12				FY 13				FY 14				FY 15			
	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
NACT Technology Development																																

Schedule Detail (R4a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration		PE NUMBER AND TITLE 0604870A - Nuclear Arms Control Monitoring Sensor Network					PROJECT SE1	
<u>Schedule Detail</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>
NACT Technology Development	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q

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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

May 2009

BUDGET ACTIVITY		PE NUMBER AND TITLE			
5 - System Development and Demonstration		0605625A - Manned Ground Vehicle			
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
FC8 Manned Ground Vehicle			100000	Continuing	Continuing

A. Mission Description and Budget Item Justification: Based on recommendation to terminate the Manned Ground Vehicle Core Program of Record and subsequently restarted as a new combat vehicle program, this program element was established. The accomplishments and funding reflected in this justification are based on preliminary analysis of the new direction. Upon further resolution and detailed planning, adjustments may occur which could potentially change planned accomplishments, funding requirements, and program schedule will be established. The funding and accomplishments are a top-level attempt to incorporate the new direction to refocus the FCS MGV program. The funding is based on an independent assessment made by USD CAIG and PAE. Currently the requirements are being defined for this new combat vehicle program. Preliminary analysis suggest a contract award in the 3rd quarter FY10 to begin the development of the ICV (Bradley replacement).

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

May 2009

BUDGET ACTIVITY	PE NUMBER AND TITLE		
5 - System Development and Demonstration	0605625A - Manned Ground Vehicle		
<u>B. Program Change Summary</u>	FY 2008	FY 2009	FY 2010
Previous President's Budget (FY 2009)			
Current BES/President's Budget (FY 2010)			100000
Total Adjustments			100000
Congressional Program Reductions			
Congressional Recissions			
Congressional Increases			
Reprogrammings			
SBIR/STTR Transfer			
Adjustments to Budget Years			100000

Change Summary Explanation: Funding - FY 10: Increase due to FCS program restructure.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration		PE NUMBER AND TITLE 0605625A - Manned Ground Vehicle			PROJECT FC8	
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost	
FC8 Manned Ground Vehicle			100000	Continuing	Continuing	

A. Mission Description and Budget Item Justification: Please see Exhibit R-2.

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
Contractor System Engineering and Program Management - Effort to begin initial requirement decomposition and initial design effort of the ICV (New Combat platform).			100000
Total			100000

<u>B. Other Program Funding Summary</u>	FY 2008	FY 2009	FY 2010	To Compl	Total Cost
0604660A FCS Manned Ground Vehicles & Common Grd Vehicle	635846	782664	368557	Continuing	Continuing
0604661A FCS System of Systems Engr & Program Management	1292514	1414756	1067191	Continuing	Continuing
0604662A FCS Reconnaissance (UAV) Platforms	42772	57190	68701	Continuing	Continuing
0604663A FCS Unmanned Ground Vehicles	78826	102976	125616	Continuing	Continuing
0604664A FCS Unattended Ground Sensors	22007	17011	26919	Continuing	Continuing
0604665A FCS Network Hardware & Software	724397	556301	749182	Continuing	Continuing
0604646A Non Line of Sight - Launch System	246071	208009	88660	Continuing	Continuing
0604647A Non Line of Sight Cannon	133139	89545	58216	Continuing	Continuing
0604666A FCS Spin Outs	84111	111032		Continuing	Continuing
060639A FCS MRM	43068	40731		Continuing	Continuing
WTCV G86100 FCS Core Program	78932	154127		Continuing	Continuing
WTCV G86200 FCS Spin Out Program	1370	67268	327921	Continuing	Continuing

Comment: Comp Programs:

ASTAMIDS, GSTAMIDS, WIN-T, JTRS-HMS, JTRS-GMR, JTRS-AMF, STARLite SAR/GMTI, JAVELIN, JCADS, JSLSCAD, DCGS-A, FBCB2, OneTESS, OneSAF

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY

5 - System Development and Demonstration

PE NUMBER AND TITLE

0605625A - Manned Ground Vehicle

PROJECT

FC8

C. Acquisition Strategy The initial plan to implement the new directive is to award a SDD contract in the 3rd FY10 to begin the design analysis required to support the restructure combat vehicle program.

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
5 - System Development and Demonstration			0605625A - Manned Ground Vehicle							FC8		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Contractor System Engineering and Prog. Mgt	TBD	TBD						100000	3Q		100000	
Subtotal:								100000			100000	
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:												
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:												
Remarks: All Test and Evaluation costs for this project are included in PE 0604661A, Project FC2 SoS Engineering and Program Management project.												
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
New R3 Line												
Subtotal:												
Remarks: All Management Service costs for this project are included in 0604661 FC2 SoS Engineering and Program Management project.												
Project Total Cost:								100000			100000	

Schedule Profile (R4 Exhibit)

May 2009

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0605625A - Manned Ground Vehicle

PROJECT
FC8

Event Name	FY 08				FY 09				FY 10				FY 11				FY 12				FY 13				FY 14				FY 15							
	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				
Requirement Analysis																																				
Contract SOW and Analysis					Requirement Analysis																															
Contract Award					Contract SOW & Analysis																															

Schedule Detail (R4a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration		PE NUMBER AND TITLE 0605625A - Manned Ground Vehicle					PROJECT FC8	
<u>Schedule Detail</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>
Requirement Analysis		3Q - 4Q	1Q					
Contract SOW and Analysis			1Q - 2Q					
Contract Award			3Q					

Development of complete schedule for the new combat vehicle program is not completed and will be planned later this FY with the Army and OSD leadership.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

May 2009

BUDGET ACTIVITY		PE NUMBER AND TITLE			
5 - System Development and Demonstration		0605013A - Information Technology Development			
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	171448	67819	35452	Continuing	Continuing
087 Distributed Learning System (DLS)	552	453	564	Continuing	Continuing
099 Army Human Resource System (AHRS)	73005	12648	3552	Continuing	Continuing
137 TRANS COORDINATORS' AUTO INFO FOR MOVEMENT SYS II	3106	146			3252
184 INSTALLATION SUPPORT MODULES (ISM)	1025	733	713	Continuing	Continuing
193 MEDICAL COMMUNICATIONS FOR COMBAT CASUALTY CARE	12941	7613	6990	Continuing	Continuing
316 STACOMP	2319				2319
474 ENTERPRISE TRANSMISSION SYSTEMS	959	1981	2957	Continuing	Continuing
738 AcqBiz	67606	27164	10728	Continuing	Continuing
FM1 FINANCIAL DISCLOSURE MANAGEMENT SYSTEM					
M05 Enterprise Army Workload & Performance Sys (eAWPS)	1535	1255	526	Continuing	Continuing
T04 USMEPCOM TRANSFORMATION - IT MODERNIZATION	8400	15826	1030	Continuing	Continuing
T05 ARMY BUSINESS SYSTEM MODERNIZATION INITIATIVES			8392	Continuing	Continuing

A. Mission Description and Budget Item Justification: Supports efforts to plan, design, develop, and test information technology solutions to fulfill the Army's Warfighter Support Mission and accommodate changing Army requirements while fulfilling future Army needs. Provides for development and acquisition of Combat Service Support (CSS) and business information technology solutions to help arm, sustain, fix, move, train and man the force. Completed development/acquisition efforts will also enhance sustaining base functions and power projection capabilities and facilitate global messaging and electronic data interchange (EDI). Ongoing development efforts support multiple functional areas including logistics, personnel, transportation, training, medical/health protection, and sustaining base.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

May 2009

BUDGET ACTIVITY	PE NUMBER AND TITLE		
5 - System Development and Demonstration	0605013A - Information Technology Development		
<u>B. Program Change Summary</u>	FY 2008	FY 2009	FY 2010
Previous President's Budget (FY 2009)	106075	73740	41240
Current BES/President's Budget (FY 2010)	171448	67819	35452
Total Adjustments	65373	-5921	-5788
Congressional Program Reductions		-5925	
Congressional Rescissions			
Congressional Increases	19352		
Reprogrammings	49841		
SBIR/STTR Transfer	-2894		
Adjustments to Budget Years			-5931

Change Summary Explanation: Funding - FY 2008: Supplemental funds provided to support the Wounded Warrior Program (4,608) and the Defense Integrated Military Human Resources System (DIMHRS)(14,744). Funds reprogrammed from O&M, Army to support Army Business Systems Modernization Initiatives.
 FY 2010: Funds realigned to support Army higher priority requirements.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0605013A - Information Technology Development			PROJECT 087	
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
087 Distributed Learning System (DLS)	552	453	564	Continuing	Continuing

A. Mission Description and Budget Item Justification: The Distributed Learning System (DLS) is an Army Acquisition Category III Army Component (ACAT III AC) automated information system that modernizes training delivery in the Army training and education system by leveraging information technology (IT). DLS is an integral component of the Department of Defense Advanced Distributed Learning Initiative (ADLI), and Strategy Plan for Transforming DoD Training, which calls for the full exploitation of technologies to support quality education and training. DLS supports the E-Government Strategy by using the Web to provide training materials, by enabling the intra-agency sharing of training data, and by adopting commercial practices and products to reduce operating costs. DLS supports the President's Management Agenda by making use of e-Learning to leverage scarce training funds and provide greater agency access to training materials. DLS provides standard automation and supporting infrastructure to improve Army's ability to train service members and supporting civilian workforce in all Army components by introducing proven distance learning enhancements into the Army training inventory.

FY2010 Core funding procures operational test & evaluation (OT&E) of DLS Increment 4, Deployed Digital Training Campus (DDTC).

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
Increment 4 (DDTC) - Engineering & Manufacturing Development (E&MD) [FY2010 Core]	552	300	75
Increment 4 (DDTC) - System Developmental Test & Evaluation (DT&E)		153	
Increment 4 (DDTC) - System Operational Test & Evaluation (OT&E) [FY2010 Core]			489
Total	552	453	564

<u>B. Other Program Funding Summary</u>	FY 2008	FY 2009	FY 2010	To Compl	Total Cost
OMA APEs 432615/432612/324612/324631 [FY2010 Core]	45525	52490	50238	Continuing	Continuing
OPA SSN BE4173 THE ARMY DISTANCE LEARNING PROGRAM [FY2010 Core]	5784	9071	8649	Continuing	Continuing

Comment:

C. Acquisition Strategy Distributed Learning System (DLS) follows an evolutionary acquisition strategy using a spiral development process based on the following rationale:

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY

5 - System Development and Demonstration

PE NUMBER AND TITLE

0605013A - Information Technology Development

PROJECT

087

(1) cost savings can be realized immediately upon implementation of even a limited set of digital training facilities, courseware, and media types; (2) requirements for future increments are dependent upon technology maturation. DLS will be executed using four discrete increments narrow in scope and as brief in duration as practical to deliver a measurable net benefit independent of future segments. Each increment satisfies a set of requirements identified in the Army's Training and Doctrine Command (TRADOC) requirements document and provides a militarily useful and operationally supportable function, which permits additional increments to be added over time without having to completely re-design and redevelop those portions of the system already fielded. New capabilities requirements will be integrated with the existing functional baseline system as technologies and capabilities mature using system releases where feasible. A rigid configuration management program is established to maintain the integrity of each functional and technical baseline. The approved DLS acquisition strategy identifies four increments for implementation. Two previously identified capability requirements (Video-to-Desktop and Simulations) are best satisfied by changes to the existing Increment 2 (Networked DLS) platform as future system releases.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0605013A - Information Technology Development			PROJECT 099	
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
099 Army Human Resource System (AHRS)	73005	12648	3552	Continuing	Continuing

A. Mission Description and Budget Item Justification: Army Human Resource System (AHRS) is the Army's system of systems that provides commanders the necessary personnel information to make informed decisions on mobilized military personnel resources (both Active Duty and Reserve Component). The implementation of AHRS requires the development of an authoritative Army Corporate database to support the eventual migration to the Defense Integrated Military Human Resource System (DIMHRS). However, major elements of AHRS are not planned to be subsumed into DIMHRS. AHRS consists of three major components:

- Electronic Military Personnel Office (eMILPO) is a web-based, multi-tiered application, accessed via the AKO portal. eMILPO provides the U.S. Army with a reliable, timely, and efficient mechanism for performing personnel actions and managing strength accountability. The application is vital in determining the strength and capability of the Army and subordinate commands. It delivers enhanced performance to the Soldier, providing superior data accuracy, and a more intuitive web-based approach resulting in increased productivity, quality, timeliness, security, and user satisfaction. It re-hosted the USC Title 10 functionality, formerly resident in the Standard Installation Division Personnel System-3 (SIDPERS-3) application, for the migration to DIMHRS. Select elements of eMILPO will need to be operated in parallel with DIMHRS until/unless DIMHRS is able to absorb all eMILPO functionality.
- Deployed Theater Accountability System (DTAS) is a web-enabled system residing on the Secret Internet Protocol Router Network (SIPRNet) that accounts for military and civilian personnel in a deployed theater by unit, day and location supporting force tracking and deployed Operations Tempo (OPTEMPO) tracking. DTAS will continue to exist after DIMHRS migration and will be interfaced to DIMHRS in order to provide this accountability function, which is not present within DIMHRS.
- The Tactical Personnel System (TPS) is a stand-alone application for task organization/manifests and jump manifests used by tactical units. The system interfaces with DTAS, allowing soldiers to be loaded into DTAS en mass upon arrival in theater. TPS will need to operate for some time after DIMHRS migration, and will eventually be subsumed into DIMHRS or the Army Enterprise Human Resource System (eHRS).

Personnel Transformation (PT)- Enterprise Service Bus (ESB)- The Army's Enterprise Service Bus (ESB) provides a data integration service in which data can be extracted from the legacy human resource systems and transferred to DIMHRS. The ESB will be a middleware application which will provide a single interface to and from DIMHRS from the Army Legacy Systems. The ESB will provide the infrastructure for the integration of new and existing applications by allowing systems and applications to easily exchange information across different environments and platforms. It will also form the information bridge between DIMHRS, the Army Legacy Systems, and external systems to create more streamlined systems in support of the military mission and personnel transformation goals.

FY 2010 Core funding procures configuration management software, test and evaluation software, life cycle replacement of legacy equipment and Continuity of Operations (COOP) equipment and software to support persistent system functions.

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
AHRS - Post Deployment Software Support (PDSS) - Engineering Change Packages (ECPs)/System Change Packages (SCPs) Interim Change Packages (ICPs) in support of eMILPO and DTAS	18069	3447	1397
AHRS - Development	18141	4299	1456
Army Continuing Education System			699

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0605013A - Information Technology Development	PROJECT 099	
Personnel Transformation - Enterprise Service Bus (ESB)	18608		
DIMHRS - Army Defense Integrated Military Human Resource System	18187	4548	
Small Business Innovative Research/Small Business Technology Transfer Programs		354	
Total	73005	12648	3552

<u>B. Other Program Funding Summary</u>	FY 2008	FY 2009	FY 2010	To Compl	Total Cost
AHRS, OPA, SSN W00800, STACOMP	10001	10579	10781	Continuing	Continuing
AHRS, OMA, 432612/432615	5570	5586	5736	Continuing	Continuing
Personnel Transformation- ESB, OPA, BE4164000	3043	3243	3305	Continuing	Continuing
Personnel Transformation-ESB OPA, SSN W00800				Continuing	Continuing
Personnel Transformation-eHRS, OMA, 432612	25155	22320	22870	Continuing	Continuing

Comment:

C. Acquisition Strategy Army Human Resource System (AHRS)- The program manager makes extensive use of Integrated Product Teams (IPTs). Sub-elements of the acquisition (engineering and design, logistics planning, testing, etc.) are intensively managed by integrated teams of government and contractor personnel. Task performance is tracked against the Work Breakdown Structure (WBS) and resources allocated to each task are adjusted based on performance against the WBS. AHRS contractual efforts are acquired on a time and materials basis through GSA schedule and existing contractual vehicles. The Title 10 functionality has transferred to AHRS. Additionally, as the Personnel community manages their migration to the Defense Integrated Military Human Resource System (DIMHRS), the functionality resident in the 320+ external interface current systems will migrate to AHRS. This migration began in FY03, and will ensure the personnel community retains functionality necessary to meet operational requirements while addressing Transformation requirements.

Personnel Transformation - The Enterprise Service Bus (ESB) program management approach is a middleware application which will provide a single interface to and from DIMHRS from the Army Legacy Systems. The ESB will provide the infrastructure for the integration of new and existing applications by allowing systems and applications to easily exchange information across different environments and platforms. It will also form the information bridge between DIMHRS, the Army Legacy Systems, and external systems. Contractor selection will be accomplished through open competition, administered by a federal certified contracting agency. Program Management is accomplished by combining a "best practices" approach coupled with standard tools.

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
5 - System Development and Demonstration			0605013A - Information Technology Development							099		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
AHRS - PDSS ECPs/SCPs/ICPs	C/FP	Electronic Data Systems, Herndon, VA	21330	6435	1Q	3447	1Q	1397		Cont.	Cont.	Cont.
Personnel Transformation ESB - Research/Development PT Impacts on Objective Force	C/FP	Science Applications International Corp (SAIC) , San Diego, CA	25652	6435						Cont.	Cont.	Cont.
DIMHRS		Northrup Grumman		53700		4902					58602	
AHRS - Software Development		Electronic Data Systems, Herndon, VA	39901	6435	1Q	4299	1Q	1456		Cont.	Cont.	Cont.
Army Continuing Education System								699		699	1398	
Subtotal:			86883	73005		12648		3552		Cont.	Cont.	Cont.
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:												
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:												
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0605013A - Information Technology Development							PROJECT 099		
Subtotal:										
Project Total Cost:	86883	73005		12648		3552		Cont.	Cont.	Cont.

Schedule Profile (R4 Exhibit)

May 2009

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0605013A - Information Technology Development

PROJECT
099

Event Name	FY 08				FY 09				FY 10				FY 11				FY 12				FY 13				FY 14				FY 15			
	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
Migration DIMHRS																																
eMILPO Support/Enhancements																																
DTAS Support/Enhancements																																
DIMHRS																																
Personnel Transformation Development																																
Tactical Personnel System (TPS) Support/Enhancements																																

Schedule Detail (R4a Exhibit)

May 2009

BUDGET ACTIVITY		PE NUMBER AND TITLE						PROJECT
5 - System Development and Demonstration		0605013A - Information Technology Development						099
<u>Schedule Detail</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>
Migration DIMHRS	1Q - 4Q	1Q - 4Q	1Q - 2Q					
eMILPO Support/Enhancements	1Q - 4Q	1Q - 4Q	1Q - 2Q					
DTAS Support/Enhancements	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q				
DIMHRS	3Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q		
Personnel Transformation Development	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q				
Tactical Personnel System (TPS) Support/Enhancements	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q				

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0605013A - Information Technology Development			PROJECT 137	
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
137 TRANS COORDINATORS' AUTO INFO FOR MOVEMENT SYS II	3106	146			3252

A. Mission Description and Budget Item Justification: Transportation Information Systems (TIS) Product Office funding supports design, development, testing, and program management functions for Transportation Coordinators' - Automated Information for Movement System II (TC-AIMS II).
 TC-AIMS II:
 - Provides an integrated information transportation system capability for deployment, sustainment, and redeployment operations during both war and peacetime operations for the U.S. Army and U.S. Navy.
 - Consolidates the management of unit/installation-level transportation functions of Unit Movement, Load Planning, and Installation Transportation Office/Traffic Management Office (ITO/TMO) operations, and facilitates the movement and support of personnel and cargo during all phases of military operations in all environments, including sustainment; reception, staging, onward movement and integration (RSO&I); and battlefield operations.
 - Supports routine and surge requirements and automates shipping/receiving, and deployment; sustainment and redeployment processes; produces movement documentation, unit move data; and furnishes timely transportation information to major commands, transportation component commands, and United States Transportation Command.
 - Supports Pre-Planned Product Improvements (P3I), a post Block 3 development capabilities.

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
Project Management Office (PMO) Contractor Support			
PMO Operations			
Facility Lease/Service Management			
Block 3 (Movements Control & Planning; Map Graphics) System Development			
Block 3 (Movements Control & Planning; Map Graphics) System Test and Evaluation			
Pre-Planned Product Improvements (P3I)	3106	146	
Small Business Innovative Research/Small Business Technology Transfer Programs.			
Total	3106	146	

<u>B. Other Program Funding Summary</u>	FY 2008	FY 2009	FY 2010	To Compl	Total Cost
OPA - SSN: BZ8900 TC AIMS II	74999	32785	11124	Continuing	Continuing
OMA - APE: 432612	30571	37130	40970	Continuing	Continuing

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

5 - System Development and Demonstration

0605013A - Information Technology Development

137

Comment:

C. Acquisition Strategy Transportation Information Systems (TIS) Product Office for the Transportation Coordinators' - Automated Information for Movement System II (TC-AIMS II) uses an Integrated Support Memorandum of Agreement (MOA) to develop and maintain the software. A separate contract provides program management support, fielding of the system, and training to the software. TC-AIMS II system development is following a multi-block, phased development and fielding strategy to reduce technical, program, and user acceptance risks. TC-AIMS II system capability is broken into three separate, software blocks including: Block 1 - Unit Move, Block 2 - Enhanced Unit Move (Web), and Block 3 - Reception, Staging, Onward Movement and Integration (RSO&I), Movement Control and Planning, and Map Graphics. Infrastructure requirements are being satisfied by the establishment of an Enterprise Architecture composed of a Central Management Facility supporting Multiple Regional Access Nodes. Additional infrastructure requirements include the acquisition and deployment of Commercial-Off-The-Shelf (COTS) hardware to provide a breakaway client-server capability which will function in isolated workgroups or in stand-alone modes. Funding supports the operations of a Central Management Facility (CMF) with a minimum of three Regional Access Nodes. This Enterprise Management System operating at the CMF supports central software distribution to remote sites. Funding for Army hardware is included in the TIS program.

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
5 - System Development and Demonstration			0605013A - Information Technology Development							137		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
System Development	C/CPAF	Computer Sciences Corporation (CSC), Springfield, VA	35075								35075	
System Development	MOA	Army Engineer Research & Development Center (ERDC), Springfield, VA	37347							Cont.	Cont.	Cont.
Pre-Planned Product Improvements (P3I)	MOA	Army Engineer Research & Development Center (ERDC), Springfield, VA	2433	3106	3Q	146				Cont.	Cont.	Cont.
Subtotal:			74855	3106		146				Cont.	Cont.	Cont.

Remarks: The Cost Review Board (CRB) developed an Army Cost Position (ACP) for Transportation Coordinators' Automated Information Movement System II (TC-AIMS II) to support Increment 3 Full Deployment Decision Review. The Army Cost Position was approved on 29-November-2007.

II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Facility Lease/Service Management	T&M	Smart Technologies, Springfield, VA	16202							Cont.	Cont.	Cont.
Project Management Office (PMO) Contractor Support	T&M	L3/Titan, Springfield, VA	38913							Cont.	Cont.	Cont.
PMO Operations	NA	PMO, Springfield, VA	19496							Cont.	Cont.	Cont.
Subtotal:			74611							Cont.	Cont.	Cont.

Remarks: Product Management Office (PMO) Operations includes direct pay of government employees, Temporary Duty (TDY), training, supplies, etc.

III. Test And Evaluation	Contract	Performing Activity &	Total	FY 2008	FY 2008	FY 2009	FY 2009	FY 2010	FY 2010	Cost To	Total	Target
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ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
5 - System Development and Demonstration			0605013A - Information Technology Development							137		
	Method & Type	Location	PYs Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Complete	Cost	Value of Contract
OT & DT	MOA	Various	6593							Cont.	Cont.	Cont.
Subtotal:			6593							Cont.	Cont.	Cont.
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:												
Project Total Cost:			156059	3106		146				Cont.	Cont.	Cont.

Schedule Detail (R4a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration		PE NUMBER AND TITLE 0605013A - Information Technology Development					PROJECT 137	
<u>Schedule Detail</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>
Block 2 Training & Fielding	1Q - 4Q	1Q - 4Q	1Q - 3Q					
Block 3 Development & Testing								
Block 3 Training & Fielding	2Q - 4Q	1Q - 4Q	1Q - 3Q					
Block 3 Full Rate Prod Decision	1Q							

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0605013A - Information Technology Development			PROJECT 184	
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
184 INSTALLATION SUPPORT MODULES (ISM)	1025	733	713	Continuing	Continuing

A. Mission Description and Budget Item Justification: Continues migration of the fielded Installation Support Modules (ISM) software (Disk Operating System character based) applications to a more modern graphical user interface in a web based environment allowing the combat soldier as well as the field commander access to records impacting soldier readiness. Additional functionality will be fielded in FY09 and FY10. ISM, deployed to Army sites worldwide is software applications that have been developed and standardized to perform business functions at the Installation level. These modules are based upon functional processes used by the combatant command staff as well as installation staff. The ISM system is a web environment that utilizes a single, centralized, replicated database to store data for the entire Army. The web server architecture supports a graphical user interface, web-based user access, and a consolidated infrastructure in accordance with the Army Knowledge Management (AKM) Strategic Plan. This modernized system enables the Army Installation Management community to provide simple web-enabled software applications for soldier processing; ready and relevant information to the commander; while transparently integrating multiple complex processes for soldiers, commanders, and Army executives. ISM consists of five discrete modules focusing on Army Force Generation activities including in/out processing of soldiers, personnel locator services, soldier transition processing, management of soldier educational records, and management of organizational clothing and individual equipment. The Theater Network Operations and Security Center, Ft. Huachuca, AZ manages the ISM network, provides general system configuration control, operates a 24/7 Helpdesk, provides user account management, and performs automated backups for ISM devices located at Army sites worldwide.

Coalition Warfighter Interoperability Demonstration (CWID) is a mandated Joint program that requires participation by the US Army to explore near-term technologies that support Joint and Coalition Warfare Interoperability. Funding is to facilitate Coalition Force interoperability research and development and to comply with CJCSI 6230.2 date 30 April 05.

FY10 Core funding is essential for supporting demands for improved systems to provide for soldier safety and combat equipment as well as support research and development to comply with Chairman, Joint Chiefs of Staff Initiative 6230.2. Applications to use bar code devices in Central Issue Facilities will insure that excess stocks can be moved to units with emerging needs to satisfy deployment requirements without having unnecessary procurement. Funding for CWID will continue to facilitate Coalition Force interoperability research and development.

FY10 OCO funding is not required.

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
Post-Deployment Software Support (PDSS) - Engineering Change packages (ECPs)/System Change Packages (SCPs) Accomplishments: Added ability for the Central Issue Facility (CIF) module application to use data from a "Body Scanner" to determine clothing sizes required for organizational clothing and individual equipment (OCIE) items reducing processing time. Added an e-Signature capability to the CIF module for issue and turn-in of OCIE, reducing processing time and improving accountability. Planned Program: Add self service functions to the CIF through Army Knowledge on Line (AKO). Allow soldiers and commanders to access appointments, hand receipts and clothing records; helps eliminate duplicate ordering, provides commanders easy access to determine soldier readiness; improves asset visibility. Add compliance with personal privacy safeguards to mask social security numbers and other personal information. Add OCIE logistical data from National Guard systems and create a common data base to reduce duplicate ordering	474	336	351

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0605013A - Information Technology Development		PROJECT 184
and increase utilization of existing stocks; improves asset visibility. Add Bar-Code tracking OCIE by lot number and manufacturer for containment of unsafe equipment, cross leveling of stocks to installations with emerging needs, eliminating procurement of unnecessary stocks, and reduces manpower requirements for storing OCIE. Add automation of soldier test scoring when taking the Armed Forces Classification Test.			
New Accomplishment			
Independent Verification and Validation (IV&V) Testing	59	60	62
Coalition Warfighter Interoperability Demonstration (CWID)	492	317	300
Small Business Innovative Research/Small Business Technology Transfer Programs		20	
Total	1025	733	713

<u>B. Other Program Funding Summary</u>	FY 2008	FY 2009	FY 2010	To Compl	Total Cost
OMA APE: 432612/432100	13165	12219	12546	Continuing	Continuing
BE4162 MACOM AUTOMATION SYSTEMS	512	509	521	Continuing	Continuing

Comment:

C. Acquisition Strategy This system is in Post Deployment Software Support (PDSS). The present concept calls for the use of full and open competition to implement enhancements as defined by the Functional Proponent, Army Chief Information Officer (CIO)/G-6.

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
5 - System Development and Demonstration			0605013A - Information Technology Development							184		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
PDSS ECPs/SCPs/ICPs	C/FP	Systems Research & Applications, Fairfax, VA	9762	547	2Q	350	2Q	357	1-4Q	Cont.	Cont.	Cont.
JWID Development - Army	MIPR	OSD	3937	418	1Q	323	1Q	356	1-4Q	Cont.	Cont.	Cont.
Rock Island Ops Center486	C/FP	Intergraph, Huntsville, AL	949								949	
Subtotal:			14648	965		673		713		Cont.	Cont.	Cont.
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
PM Support	MIPR	AMRDEC, Redstone Arsenal, AL										
Subtotal:												
Remarks: AMRDEC - Aviation and Missile Research, Development and Engineering Center (US Army Aviation and Missile Command)												
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Independent Verification and Validation (IVV) Testing	C/FP	ANTEON Corp, Fairfax, VA	1740	60	1Q	60	1Q			Cont.	Cont.	Cont.
Subtotal:			1740	60		60				Cont.	Cont.	Cont.
IV. Management Services	Contract Method &	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award	FY 2009 Cost	FY 2009 Award	FY 2010 Cost	FY 2010 Award	Cost To Complete	Total Cost	Target Value of

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration			PE NUMBER AND TITLE 0605013A - Information Technology Development						PROJECT 184		
	Type				Date		Date		Date		Contract
Subtotal:											

Project Total Cost:		16388	1025		733		713		Cont.	Cont.	Cont.
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Schedule Detail (R4a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration		PE NUMBER AND TITLE 0605013A - Information Technology Development					PROJECT 184	
<u>Schedule Detail</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>
ISM Hardware Fielding	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q				

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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration		PE NUMBER AND TITLE 0605013A - Information Technology Development			PROJECT 193	
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost	
193 MEDICAL COMMUNICATIONS FOR COMBAT CASUALTY CARE	12941	7613	6990	Continuing	Continuing	

A. Mission Description and Budget Item Justification: The Medical Communications for Combat Casualty Care (MC4) System provides multipliers to the medical force structure through the acquisition of digital communications and information technology solutions for the deployable medical forces. The MC4 System will also fulfill the requirements highlighted in United States Code: Title 10, Subtitle A, Part II, Chapter 55, Section 1074f, mandating the proper documentation of deployed service members' medical treatment to include pre- and post-deployment screening and its associated medical surveillance. The MC4 System will interface Force Health Protection and medical surveillance information with Army Battle Command and Combat Service Support information technology systems as they evolve to support the Army Transformation. The MC4 System also indirectly supports other soldier protection initiatives as analysis of injury data collected from the MC4 systems is used to support the identification and development of other critical soldier support systems such as body armor, improved helmets, traumatic brain injury protection and trauma reduction. Current MC4 Program efforts are focused on system engineering, testing and integration, and fielding automation infrastructure for Army users of the Joint Theater Medical Information Program (TMIP-J) suite of software. Funding provides support system engineering, integration and developmental testing of information management/information technology to better support Force Health Protection in the Army Campaign Plan and Global War On Terrorism units.

FY10 Core funding will be used for the engineering effort required to provide the Defense Health Information Management System (DHIMS) TMIP-J software on the Army platform, as well as the engineering effort for other Army unique capability. Activities include:

- Test augmentation to include development testing of TMIP (all releases until final objective), and other Army unique software capabilities
- Integration testing of software systems on the MC4 baseline system
- Future engineering in architecture development for better efficiency and effectiveness
- Evaluation of technology obsolescence and solutions
- Evaluation and testing of technology upgrades to include capabilities identification through market surveys and demonstrations
- Evaluation of new health care capabilities not provided by DHIMS/TMIP, e.g. teleradiology
- Test and evaluation of new capabilities and how well they work in the combat theater
- Lab site studies with technology and scenarios
- Interfaces with other systems, e.g. Future Combat System (FCS)

NOTE: FY08 value in Amended Pres Bud FY10 of \$12.941 million is incorrect. \$4.294 million was given to MC4 in error and returned to correct program. \$8.647 million was funded to MC4.

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
Program Management	195	210	225
Logistics Support Planning for P3I and System Upgrades	167	179	192

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT		
5 - System Development and Demonstration	0605013A - Information Technology Development	193		
Engineering and Technical Support for P3I and System Upgrades	2096	1654	1748	
MC4 Testing for P3I and System Upgrades	1130	1200	1261	
Integration and testing for Army Unique Solutions	354	389	416	
MC4/TMIP Integration and Testing for P3I and System Upgrades	3563	2991	3148	
Supplemental funds to support Wounded Warrior Program - Engineering, technical support, integration, testing to support rapid deployment of enhanced medical software to theater.				
Small Business Innovative Research/Small Business Technology Transfer Programs	242	190		
Electronic Commodity	900	800		
Funding not received	4294			
Total	12941	7613	6990	

<u>B. Other Program Funding Summary</u>	FY 2008	FY 2009	FY 2010	To Compl	Total Cost
OPA SSN MA8046 (MC4)	91016	50277	18601	Continuing	Continuing
OMA APE 432612	14169	9037	9253	Continuing	Continuing

Comment:

C. Acquisition Strategy The MC4 Program supports a number of Army Medical Information Technology/Communications initiatives. The near and mid-term focus of the MC4 program is to engineer, design, test, acquire and field the Army automation/communications infrastructure capabilities supporting fielding of the Joint Theater Medical Information Program (TMIP) integrated software application suite and other Army requirements. The MC4 hardware is procured as Commercial-off-the-Shelf (COTS) components. Since TMIP software is a major component of the MC4 System, the MC4 Program will deliver capabilities in increments, recognizing the need for future system upgrades and Preplanned Product Improvements (P3Is). The MC4 Program continues to work with the user community to continually define and refine additional requirements and match them with available technologies to provide the user enhanced capabilities. These enhanced capabilities will be provided to the user at the earliest possible date. This approach yields the most operationally useful and supportable capability in the shortest time possible with Cost As an Independent Variable. Moreover, this approach provides an initial capability with the explicit intent of delivering improved and updated capability in subsequent upgrades and Pre-Planned Product Improvements. This evolutionary development approach will be accomplished through a rapid prototyping process that will progress the system from its current functional capabilities to fully integrated objective capabilities. Appropriate commercial technology enhancements (e.g. advances in operating systems, voice activated technology, etc) will be incorporated into MC4 products and systems as they become available. Each MC4 System component will undergo a full range of developmental testing to include software unit testing, integration testing, interoperability testing and software qualification testing. The MC4 system upgrades and improvements will continue to undergo follow-on operational testing.

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration			PE NUMBER AND TITLE 0605013A - Information Technology Development							PROJECT 193		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:												

Remarks: MC4 is a COTS hardware, GFE Software system. MC4 provides the integration of the hardware and software and fields and supports the system. No product development is done.

II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Electronic Commodity		GOV WORKS	1900	900	2Q	800	2Q				3600	
PMO Support	C/CPFF	CACI Inc-Federal, Arlington, VA	2275							Cont.	Cont.	Cont.
Logistics Planning	In House	PMO, Ft. Detrick, MD	2629	167	1-4Q	179	1-4Q	192	1-4Q	Cont.	Cont.	Cont.
Logistics Planning Spt	C/CPFF	CACI Inc-Federal, Arlington, VA	1481							Cont.	Cont.	Cont.
Engineering & Technical Spt	In House	PMO, Ft. Detrick, MD	3336							Cont.	Cont.	Cont.
Engineering & Tech Spt	C/CPFF	L3 (was Titan), Reston, VA	7341	354	1Q	389	1Q	426	1Q	Cont.	Cont.	Cont.
PMO Support	C/CPFF	General Dynamics (was Anteon Inc.), Fairfax, VA	708	1389	2Q					Cont.	Cont.	Cont.
Information Assurance		ISEC Support				650	1-4Q	675			2025	
Subtotal:			19670	2810		2018		1293		Cont.	Cont.	Cont.

Remarks: Electronic Commodity is a pass-through to Department of Interior, an initiative of SEN Byrd of West Virginia, from Congressional MARKS. SBIR/STTR reductions taken from program.

PMO SUPPORT with GDIT moved to another appropriation to better align activities with program life cycle

III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
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ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
5 - System Development and Demonstration			0605013A - Information Technology Development							193		
MC4 Integration and Testing	C/CPFF	L3 (was Titan), Reston, VA	12090	2868	1Q	1905	1Q	1886	1Q	Cont.	Cont.	Cont.
PMO Testing Spt	MIPR	ATEC/AMEDD Board	3042	425	1-4Q	425	1-4Q	456	1-4Q	Cont.	Cont.	Cont.
MC4/TMIP System Engineering	C/CPFF	John Hopkins University (JHU) Applied Physics Lab, Laurel, MD	17064	2349	1Q	3055	1Q	3130	1Q	Cont.	Cont.	Cont.
Subtotal:			32196	5642		5385		5472		Cont.	Cont.	Cont.

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Prog Mgmt Operations	In House	PMO, Ft Detrick, MD	7810	195	1-4Q	210	1-4Q	225	1-4Q	Cont.	Cont.	Cont.
funding not received				4294							4294	
Subtotal:			7810	4489		210		225		Cont.	Cont.	Cont.

Remarks: Funding in Program Management Operations includes direct pay of PMO government employees, TDY, training, supplies, etc. in direct support of RDTE effort
 \$4.294 million in FY08 not received by MC4 program

Project Total Cost:	59676	12941		7613		6990		Cont.	Cont.	Cont.
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Schedule Profile (R4 Exhibit)

May 2009

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0605013A - Information Technology Development

PROJECT
193

Event Name	FY 08				FY 09				FY 10				FY 11				FY 12				FY 13				FY 14				FY 15			
	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
Pre-Planned Product Improvements, System Upgrades																																

Schedule Detail (R4a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration		PE NUMBER AND TITLE 0605013A - Information Technology Development					PROJECT 193	
<u>Schedule Detail</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>
Pre-Planned Product Improvements	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q
System Upgrades	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q

Pre Planned Product Improvements (P3I) correspond to current TMIP Acquisition Strategy schedules for upgrades and enhanced capability of the TMIP software. System Upgrades correspond to projected software change packages throughout this time period. Both P3I and Upgrades require integration and testing prior to acceptance and release.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0605013A - Information Technology Development			PROJECT 316	
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
316 STACOMP	2319				2319

A. Mission Description and Budget Item Justification: The Standard Army Management Information System (STAMIS) Tactical Computers (STACOMP) program provides acquisition, logistics, and integration support to numerous tactical logistics programs through in-house matrix and contract support. This support includes managing the Program Executive Office (PEO) warranty program for hardware and software products; developing and managing the PEO Integrated Logistics System (ILS) program for all systems; serving as the policy advisor on related matters, and maintaining liaison with the Headquarters, Department of the Army (HQDA) Logistics Studies Steering Committee (LCSS) and other members of the Acquisition Logistics community across the Army and Department of Defense (DoD). Support also includes managing contract negotiations and legal reviews; software/hardware evaluation testing; and contractor customer support for 24 hour hotline, technical upgrades, order processing/tracking reports, and World Wide Web (WWW) site.

The Global Combat Support System - Army (GCSS-Army) program will provide the Army's CS/CSS warfighter with a seamless flow of timely, accurate, accessible, actionable, and secure information not readily available today that gives combat forces a decisive edge. GCSS-Army will modernize automated logistics by implementing best business practices to streamline supply operations, maintenance operations, property accountability, and logistics management and integration procedures in support of the Future Force transition path of the Army Campaign Plan. This effort will implement a comprehensive logistics automation solution for the field (deployable) Army and provide the Commander on the battlefield with an integrated, interoperable view of the battle-space in time to support decisions that will affect the outcome of combat operations, combat power, and planning for future operations.

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
Congressional add for Health Informatics Initiative.	2319		
Total	2319		

<u>B. Other Program Funding Summary</u>	FY 2008	FY 2009	FY 2010	To Compl	Total Cost
OPA, W00800, STACOMP (STAMIS)	3693	3800	3803	Continuing	Continuing

Comment:

C. Acquisition Strategy The Standard Army Management Information System (STAMIS) Tactical Computer (STACOMP) supports acquisition and deployment of Program Executive Office (PEO) logistics personnel systems.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY

5 - System Development and Demonstration

PE NUMBER AND TITLE

0605013A - Information Technology Development

PROJECT

316

Empty justification area.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0605013A - Information Technology Development			PROJECT 474	
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
474 ENTERPRISE TRANSMISSION SYSTEMS	959	1981	2957	Continuing	Continuing

A. Mission Description and Budget Item Justification: Combat Service Support (CSS) Automated Information System Interface (CAISI) is a high-data-rate wireless system that provides sensitive information (SI) and is the backbone for logistics connectivity down to individual Combat Service Support (CSS) computer systems located within the sustainment area. The CAISI design effort focuses on integrating Commercial Off-The-Shelf (COTS) equipment from various manufacturers to create a standard deployable set of communications equipment. Current CAISI equipment is being fielded with new equipment training to logistics units Army-wide. Maintenance support is provided at depot level with additional support at forward repair activities. Computer based training, on-line refresher training and technical support is also provided for CAISI users. CAISI employs a deployable wireless LAN infrastructure linking up to 103 tents, vans or shelters in a 7 square-kilometer area using wireless bridging. CAISI design incorporates full lifecycle sustainability features to ensure reliability and supportability in full spectrum operations.

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
The FY10 funds will provide follow-on testing, product improvement, integration and IA compliance.	959	1925	2957
Small Business Innovative Research/Small Business Technology Transfer Programs		56	
Total	959	1981	2957

<u>B. Other Program Funding Summary</u>	FY 2008	FY 2009	FY 2010	To Compl	Total Cost
OPA, BD3512	12609	16486	17629	Continuing	Continuing
OMA 423612	4184	5687	5788	Continuing	Continuing

Comment:

C. Acquisition Strategy Acquisition strategy will be to obtain engineering support, as well as applicable hardware and software to enhance current CAISI capabilities. Funding provides functional assesment, technical support and integration of IA requirements. Integral to this strategy is the imperative of developing the capability for inserting and integrating emerging technologies into the new CAISI.

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
5 - System Development and Demonstration			0605013A - Information Technology Development							474		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:												
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:												
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Research, modification/integration and testing of CAISI 2.0.	C/FFP	ISEC, Ft Huachuca, AZ	17913	959	1-2Q	1981	1-2Q	2957		Cont.	Cont.	Cont.
Subtotal:			17913	959		1981		2957		Cont.	Cont.	Cont.
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:												
Project Total Cost:			17913	959		1981		2957		Cont.	Cont.	Cont.

Schedule Profile (R4 Exhibit)

May 2009

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0605013A - Information Technology Development

PROJECT
474

Event Name	FY 08				FY 09				FY 10				FY 11				FY 12				FY 13				FY 14				FY 15			
	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
Test and Evaluation																																

Schedule Detail (R4a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration		PE NUMBER AND TITLE 0605013A - Information Technology Development					PROJECT 474	
<u>Schedule Detail</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>
Test and Evaluation	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q

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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0605013A - Information Technology Development			PROJECT 738	
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
738 AcqBiz	67606	27164	10728	Continuing	Continuing

A. Mission Description and Budget Item Justification: PM AcqBusiness establishes and sustains the family of IT business systems that support the business of Army acquisition. The PM AcqBusiness product, AcqBiz, will consist of a family of existing IT solutions, COTS products, decision support tools and web services that are integrated through a common architecture. Whenever possible, AcqBiz will provide access to external enterprise tools and services from other business domains, Army, OSD and DISA and will not duplicate those capabilities. PM AcqBusiness establishes the enterprise level investment control, portfolio management and requirements visibility which is the heart of IT business system transformation in Army Acquisition. AcqBiz will provide Army Acquisition practitioners with a consistent set of unique business tools, web services, and decision support tools which will provide visibility of authoritative data, consistency in business process, more timely support to acquisition decisions and enterprise control over IT investments. The enterprise tools provided via AcqBiz will also enable the reduction and eventual elimination of stovepipe and redundant tools that exist in the domain today. AcqBiz will provide an environment that will enable a standard capability to allow access to disparate Acquisition Domain data sources. AcqBiz will provide role-based access to authoritative data sources and services. In addition, AcqBiz will provide a framework for information providers to publish their data and expose their services to authorized users.

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
Analysis and Design, Development, Test and Integration of AcqBiz.	17577	14250	8091
Program Management	3357	3710	2637
Army Business Systems Modernization Initiatives.	46672	8444	
Small Business Innovative Research/Small Business Technology Transfer Programs (SBIR/STTR)		760	
Total	67606	27164	10728

<u>B. Other Program Funding Summary</u>	FY 2008	FY 2009	FY 2010	To Compl	Total Cost
OMA APE 432612	7227	13157	11811	Continuing	Continuing

Comment:

C. Acquisition Strategy The AcqBusiness Product Manager was established to acquire a centrally managed and funded suite of standard net-centric business capabilities in order to provide Army acquisition practitioners the data visibility necessary to optimize the acquisition of supplies, services, and materiel for the Warfighter. PM AcqBusiness is using an evolutionary acquisition strategy to acquire the capabilities specified in the AcqBiz requirements document in order to realize benefits early and reduce risk. The full range of

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY

5 - System Development and Demonstration

PE NUMBER AND TITLE

0605013A - Information Technology Development

PROJECT

738

AcqBiz service oriented architecture (SOA) services will be achieved through an evolutionary implementation of individual components, each delivered in 90 to 120 day increments of time. Each service is designed to federate cleanly with and leverage the capabilities provided by other SOA environments by leveraging an open-standards based approach to design. Each AcqBiz SOA service will implement new functionality, and may or may not utilize other already published SOA services. Each service capability will be tested and then made available to consumers throughout the acquisition community and the Army. This approach minimizes the cost incurred for testing the system, as well as minimizes release transition impacts on users.

Functionality to be incorporated into each future increment of AcqBiz will be vetted through the CIO Council and approved by the Acquisition Business Enterprise Governance Board. PM AcqBusiness is using an evolutionary acquisition approach, incorporating the use of commercial-off-the-shelf (COTS) hardware and software, and custom developed software to meet Army requirements. In this approach, the maintenance release will be streamlined to expedite the fielding of a particular AcqBiz software fix or upgrade. Maintenance releases will be installed on an "as needed" basis after testing and approval by PM AcqBusiness. This approach minimizes the time required to deliver new capabilities to users. The PM AcqBusiness acquisition approach embraces the tenets of Subtitle III of Title 40, U.S.C. (Formerly the Clinger-Cohen Act of 1996) As such, the PM AcqBusiness is: (1) performing Business Process Reengineering (BPR) in advance of development of AcqBusiness capabilities. AcqBusiness is primarily about changing how the acquisition business functions are done in the Army; (2) encouraging the purchase of commercial products and innovations from private industry; (3) involving potential suppliers of SOA technology early in the requirements generation process; (4) employing outsourcing wherever possible; and (5) acquiring the AcqBiz capabilities in interoperable modules, leveraging the evolutionary acquisition approach.

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
5 - System Development and Demonstration			0605013A - Information Technology Development							738		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Army Business Systems Modernization Initiatives.	Various			46073	1-4Q						46073	
Analysis and Design, Development, Integration and Testing	C & T&M	Northrup Grumman, McLean, VA	20468							Cont.	Cont.	Cont.
Application Licenses	SS & FP	Mythics, Virginia Beach, VA	8840							Cont.	Cont.	Cont.
Analysis and Design, Development, Integration	MIPR to Various Agencies	Various Agencies		11106	1-4Q	13514	1-4Q	3539	1-4Q	Cont.	Cont.	Cont.
Requirements, Equipment and Software	MIPR to Various Agencies	Various Agencies		3000	1-4Q	6850	1-4Q	2778	1-4Q	Cont.	Cont.	Cont.
Subtotal:			29308	60179		20364		6317		Cont.	Cont.	Cont.
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support Costs	SS	Bearing Point Inc, McLean, VA	174		1-4Q		1-4Q		1-4Q	Cont.	Cont.	Cont.
Subtotal:			174							Cont.	Cont.	Cont.
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Test and Evaluation	MIPRs to Various Agencies	Various Agencies	1350	4070	1-4Q	3000	1-4Q	1774	1-4Q	Cont.	Cont.	Cont.

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0605013A - Information Technology Development	PROJECT 738
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Subtotal:	1350	4070		3000		1774		Cont.	Cont.	Cont.
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IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	MIPRs to Various Agencies	Various Agencies	4015	3357	1-4Q	3800	1-4Q	2637	1-4Q	Cont.	Cont.	Cont.
Subtotal:			4015	3357		3800		2637		Cont.	Cont.	Cont.

Project Total Cost:	34847	67606		27164		10728		Cont.	Cont.	Cont.
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Schedule Profile (R4 Exhibit)

May 2009

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0605013A - Information Technology Development

PROJECT
738

Event Name	FY 08				FY 09				FY 10				FY 11				FY 12				FY 13				FY 14				FY 15							
	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				
Technical Prototyping & Component Integration	Integration & Benefits Assessments																																			
(1) Increment One IOC, (2) Increment Two IOC					▲ 1 ▲ 2																															
(3) Increment Three IOC, (4) Increment Four IOC									▲ 3				▲ 4																							
(5) Increment Five IOC, (6) Increment Six IOC													▲ 5				▲ 6																			
(7) Increment Seven IOC, (8) Increment Eight IOC																	▲ 7				▲ 8															
(9) Increment Nine IOC, (10) Increment Ten IOC																					▲ 9				▲ 10											
(11) Increment Eleven IOC, (12) Increment Tweleve IOC																									▲ 11				▲ 12							
(13) Increment Thirteen IOC, (14) Increment Fourteen IOC																													▲ 13				▲ 14			
(15) Increment Fifteen IOC																																	▲ 15			
Sustainment													Continuous																							

Schedule Detail (R4a Exhibit)

May 2009

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0605013A - Information Technology Development

PROJECT
738

<u>Schedule Detail</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>
Technical Prototyping & Component Integration	1Q - 4Q							
Increment One IOC		2Q						
Increment Two IOC		3Q						
Increment Three IOC		4Q						
Increment Four IOC			2Q					
Increment Five IOC			4Q					
Increment Six IOC				2Q				
Increment Seven IOC				4Q				
Increment Eight IOC					2Q			
Increment Nine IOC					4Q			
Increment Ten IOC						2Q		
Increment Eleven IOC						4Q		
Increment Twelve IOC							2Q	
Increment Thirteen IOC							4Q	
Increment Fourteen IOC								2Q
Increment Fifteen IOC								4Q
Sustainment		1Q - 4Q						

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration		PE NUMBER AND TITLE 0605013A - Information Technology Development			PROJECT FM1
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
FM1 FINANCIAL DISCLOSURE MANAGEMENT SYSTEM					

A. Mission Description and Budget Item Justification: Not applicable for this item.

Accomplishments/Planned Program: Not applicable for this item.

B. Other Program Funding Summary Not applicable for this item.

C. Acquisition Strategy Not applicable for this item.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration		PE NUMBER AND TITLE 0605013A - Information Technology Development			PROJECT M05	
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost	
M05 Enterprise Army Workload & Performance Sys (eAWPS)	1535	1255	526	Continuing	Continuing	

A. Mission Description and Budget Item Justification: The Enterprise Army Workload and Performance System (eAWPS) is a capstone Human Resource based system that combines information from multiple Army business operations into an integrated data environment to support senior decision making. Additionally, it provides scenario planning to identify program alternatives and risks linked to the transformation of the Army business enterprise. eAWPS operates on the principle of building information from workload and performance data derived from authoritative Army systems (existing and future) to create an enterprise view. The system is comprised of five major modules integrating data on operational requirements, current performance information, resource management, time and attendance, and output to facilitate the linkage between manpower and budget programming, planning, and execution. eAWPS provides strategic and operational decision makers the ability to view information at user-specified levels of aggregation providing unique customization capabilities. eAWPS was originally designed for the Army Material Command maintenance community and is now being extended to non-maintenance activities commencing with the Office of the Administrative Assistant, Army Reserve, Human Resources and Army Medical Command, as well as maintenance expansion into Army Reserve and Army National Guard maintenance sites.

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
Software and architecture development	1303	1005	526
Program Management	232	215	
Small Business Innovative Research/Small Business Technology Transfer Program		35	
Total	1535	1255	526

B. Other Program Funding Summary Not applicable for this item.

C. Acquisition Strategy Not applicable for this item.

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
5 - System Development and Demonstration			0605013A - Information Technology Development							M05		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Software and architecture development	TBD	TBD	200	1303		1040		526		Cont.	Cont.	Cont.
Subtotal:			200	1303		1040		526		Cont.	Cont.	Cont.
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:												
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:												
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Program Management	TBD	TBD	40	232		215				Cont.	Cont.	
Subtotal:			40	232		215				Cont.	Cont.	
Project Total Cost:			240	1535		1255		526		Cont.	Cont.	Cont.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration		PE NUMBER AND TITLE 0605013A - Information Technology Development			PROJECT T04
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
T04 USMEPCOM TRANSFORMTION - IT MODERNIZATION	8400	15826	1030	Continuing	Continuing

A. Mission Description and Budget Item Justification: The Virtual Interactive Processing System (VIPS) will modernize Department of Defense (DoD) military entrance processing. Compared to the current system, VIPS will be more responsive, more flexible, and faster at bringing capable and qualified people to meet Force Manning needs for routine and contingency operations. The US Military Entrance Processing Command (USMEPCOM) serves as a single entry point for determining the physical, aptitude, and past behavior qualifications of candidates for enlistment. USMEPCOM must have the capability to electronically acquire, process, store, secure, and seamlessly share personnel information across the Accessions Community of Interest (ACOI) to get boots on-the ground, sailors on deck and airmen in place for fighting the war. VIPS will perform this function while modernizing and enhancing the entrance processing system to collect, evaluate, validate, and exchange enlistee qualification information during wartime, peacetime, and mobilization. When fully implemented, VIPS will substantially expand the ACOI capacity to qualify and process applicants. It will also reduce the cycle time required to induct enlistees to meet the needs of Homeland Defense and conventional campaigns. VIPS enables pre-qualification of candidates without their traveling to Military Entrance Processing Stations. This Program Element will be based on a Service Oriented Architecture (SOA) that will enable 100% electronic capture of required applicant qualification data. The SOA will make accession data fully, appropriately and securely available to applicants and ACOI partners such as Recruiting and Training Commands, Armed Forces Health Longitudinal Technology Application, Defense Integrated Military Human Resources System and Defense Manpower Data Center. It will enable full compliance with DoD direction to move toward a paperless, net-centric environment and take advantage of automated data capture technology, e.g.: medical equipment with the capability to capture and electronically transmit exam results. When implemented, USMEPCOM's role in the ACOI will shift from verifying and qualifying information to serving as an information provider, not only to its ACOI partners, but secondary stakeholders as well. The entrance processing system of the future will be location independent, virtually paper-free, highly automated and focused on bringing the right people expeditiously to operational commanders. On November 1, 2008, the DoD Business Transformation Agency (BTA) assumed program lead. The funding that was transferred to BTA includes FY2010-2013 OMA, OPA, and part of RDT&E. This RDT&E will be used by USMEPCOM for continued project transformation support of VIPS. FY 2009 Congressional add for Health Information Technology Demonstration Project at Madigan Army Medical Center and Puget Sound VA Medical Center was erroneously placed in PE 0605013A and is in the process of being moved to 0603002A, Medical Advanced Technology

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
Product Development - Research and Prototype Development	7411	9734	
Test and Evaluation		163	
Project Support		880	1030
Program Management	989	3659	
Congressional increases for Health Information Technology Demonstration Project at Madigan Army Medical Center and Puget Sound VA Medical Center		947	
Small Business Innovative Research/Small Business Technology Transfer Program		443	

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0605013A - Information Technology Development			PROJECT T04	
Total		8400	15826	1030	
<u>B. Other Program Funding Summary</u>					
	FY 2008	FY 2009	FY 2010	To Compl	Total Cost
OMA APE 33271600	11815	9171			20986

Comment: Funding for Procurement, Operations, Maintenance, and most of Research Development Test and Evaluation for VIPS moved in FY10-13 to DoD Business Transformation Agency.

C. Acquisition Strategy The VIPS project will be acquired using an evolutionary acquisition strategy to develop and field the system in multiple increments. Increments will be developed to meet known/defined user requirements and to place a useful capability in the hands of the users as early in the program as possible. The increment development strategy will allow for opportunities to align VIPS engineering and development with the deployment of other Service modernization projects such as Armed Forces Health Longitudinal Technology Application (AHLTA) and Defense Integrated Military Human Resources System (DIMHRS), promoting incorporation of existing systems into the VIPS SOA and mitigating program costs. Requirements will be based on state-of-the art information technology developed through market sampling and review of emerging technology and systems conducted by PEO-EIS (IMS-A/USMEPCOM), BTA and the ACOI. RDT&E funding began in FY 08 and supported research on detailed VIPS requirements. The transfer of the program from PEO EIS to the DoD Business Transformation Agency (BTA) will result in the completion of milestone (MS) B in second quarter FY10. After MS B is achieved, development of the first Increment can be awarded. The final Increment will be deployed in FY 13 with Full Operational Capability attained by the end of FY 13 following completion of a Final Operational Test and Evaluation to verify that functional capability requirements have been fulfilled and that the system is operationally effective. The VIPS system will be acquired using a competitive contracting strategy using performance based contracting. BTA's VIPS Program Office will employ rigorous cost controls using Earned Value and a comprehensive risk management program to ensure development and deployment of a managed solution that meets USMEPCOM and ACOI requirements and fulfills identified capability gaps.

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
5 - System Development and Demonstration			0605013A - Information Technology Development							T04		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Research and Prototype	C/FP	Teracore, Illinois		7266	2-4Q	1599	1-4Q			Cont.	Cont.	8865
Research and Prototype	C/FP	Gartner, Virginia		145	4Q						145	145
Research and Prototype	C/TM	CNI, Illinois				699	1Q				699	699
Research and Prototype	C/CPAF	TBD				7436	3-4Q			Cont.	Cont.	7436
Health Information Technology Demonstration Project at Madigan Army Medical Center & Puget Sound V	C/CPAF	TBD				947	1-4Q			Cont.	Cont.	947
Small Business Innovative Rearch /Small Busiiness Technology Transfer Program	C/CPAF	TBD				443	1-4Q				443	443
Subtotal:				7411		11124				Cont.	Cont.	18535
Remarks: Continued development FY10-FY13 moved to DoD BTA and funds not shown here.												
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Program Transformation Support	C/CCPAF	TBD				320	1-4Q	1030	1-4Q	Cont.	Cont.	1350
Program Transformation Support	C/TM	Bearing Point, Illinois				560	2-4Q				560	560
Subtotal:						880		1030		Cont.	Cont.	1910
Remarks: This RDT&E will be used by USMEPCOM for continued project transformation support of VIPS.												
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Test and Evaluation	Reqn	JTIC, MD				163	3Q				163	163
Subtotal:						163					163	163

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0605013A - Information Technology Development

PROJECT
T04

Remarks: Funding for Test and Evaluation for VIPS moved in FY10-13 to DoD Business Transformation Agency.

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Contractor PM Support	C/FP	Bearing Point, Virginia		935	4Q	1209	2Q			Cont.	Cont.	2144
Contractor PM Support	C/CPAF					2400	4Q				2400	2400
Travel/ODCs	Various	USMEPCOM		54	4Q	50	1-4Q			Cont.	Cont.	104
Subtotal:				989		3659				Cont.	Cont.	4648

Remarks: Funding for Management Services for VIPS moved in FY10-13 to DoD Business Transformation Agency.

Project Total Cost:		8400		15826		1030		Cont.	Cont.	25256
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Schedule Profile (R4 Exhibit)

May 2009

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0605013A - Information Technology Development

PROJECT
T04

Event Name	FY 08				FY 09				FY 10				FY 11				FY 12				FY 13				FY 14				FY 15			
	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
PRODUCT DEVELOPMENT																																
Research and Prototype																																
(1) Milestone B Decision																																
Increment 1																																
(2) Milestone C, (3) FOC																																
OPERATIONS AND SUSTAINMENT																																

Schedule Detail (R4a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration		PE NUMBER AND TITLE 0605013A - Information Technology Development					PROJECT T04	
<u>Schedule Detail</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>
PRODUCT DEVELOPMENT								
Research and Prototype	2Q - 4Q	1Q - 4Q	1Q - 2Q					
Milestone B Decision			2Q					
Increment 1			2Q - 4Q	1Q - 2Q				
Milestone C				2Q				
FOC						4Q		
OPERATIONS AND SUSTAINMENT				2Q - 4Q	1Q - 4Q	1Q - 4Q		

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0605013A - Information Technology Development			PROJECT T05	
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
T05 ARMY BUSINESS SYSTEM MODERNIZATION INITIATIVES			8392	Continuing	Continuing

A. Mission Description and Budget Item Justification: Adapt/improve/install/field government of the shelf (GOTS), commercial off the shelf (COTS), and new software to perform various tasks in a networked environment such as data warehousing, force management, personnel, installation and environmental data bases and applications to support Business System Transformation and Installation Management.

The Army Human Resources Data Repository (AHDR) will be a consolidated database containing Army HR data from Army persistent systems and the Defense Integrated Human Resource System (DIHMRS). The AHDR can provide translated data to the five (5) DIHMRS Confirmed Capability Gaps (CCG) that are currently known: the Wounded Warrior Accountability System (WWAS), the Chief Army Reserve Decision Support System (CARDSS) Portal, Soldier Management System-WEB (SMS-WEB), Career Acquisition Personnel & Position Management System (CAPPMS), and Pretrained Individual Manpower Stratification Model (PIM).

The Wounded Warrior Accountability System (WWAS) is an integrated, technical/ business, application solution that uses Enterprise Service Bus (BUS) interfaces and direct data base access to provide users real-time authoritative information. This application provides a single source datum retrieval point using various authoritative data sources for non-clinical case management. The integrated applications and the associated automation infrastructure support injured Soldiers as they process through the Wounded Warrior life cycle management system e.g. medical treatment/rehabilitation, medical evaluation, physical disability evaluation, physical disability compensation determination, and transition and beyond, until the soldier/veteran is no longer qualified for the program.

The Army Mapper (AM) is the Army Geospatial data base of record and the HQDA repository for all Installation & Environment (I&E) related geo-spatial data systems. Its capabilities based, fully integrated, geospatially focused framework is supporting installation management, mission assurance, protection of Army critical assets, readiness and mission execution. At full operating capability (FY11), AM will improve installation management capabilities, achieve reductions in Army-wide operating costs for GIS, improve access to information, allow the I&E domain to deliver standardized geospatial capabilities more effectively and efficiently and replace 35 disparate systems. AM is reported to Congress as a component of the DoD Enterprise Transition Plan.

The Program Planning Budget (PPB)- Business Operating System (BOS) will standardize and better integrate the transactional automated information systems used in the HQDA level programming and budgeting processes. These systems are core to the PPBE business processes of the HQ for gathering programmatic requirements, balancing resources and delivering the Army's program budget to OSD. This project is streamlining programming and budgeting processes and significantly improving strategic analysis capabilities. The project is architecting, reengineering, streamlining and consolidating HQDA systems, feeder data base systems, and streamlining the associated processes. These improvements will improve capability eliminate redundancies and reduce overall cost of operations. The PPB BOS project is complementary to the Army's GFEBs program.

The Base Realignment And Closure (BRAC) Knowledge Office (BKO) formerly known as BRACFACTS consolidates and organizes all existing BRAC intellectual capital and data, and provides a central location for collective discussion and collaboration, individual work, and executive reporting.

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
<p>The Army Human Resources Data Repository (AHDR) will automate the extraction and translation of HR data from DIHMRS and other data sources for all persistent Army systems to support G-1 and non-G-1 data analysis. The AHDR will allow the Army to meet quick-response data requirements for the Global War on Terrorism (GWOT) as well as meet data needs for emerging Army HR requirements. The WWAS FY10 efforts will fund modernization focused on functionality gaps and integrating the Warrior Transition Unit (WTU) users within the infrastructure. Specific interface development will include Traumatic Serviceman's Group Life Insurance, Physical Disability Case Processing, Combat Injury Pay, Combat Related Special Compensation, Dept of Labor, Defense Enrollment Eligibility Reporting System (DEERS), Medical Operational Data System, Medical Evaluation Board Internal Tracking, DFAS Wounded In Action Cell, and the VA. It will include design and development of gap solutions for post DIHMRS support. The Army Mapper will be enhanced to support real property business practices - asset tracking and real property accountability. It will be enhanced to support reconciliation of environmental liabilities with real property assets, to manage specialized environmental liabilities data, define requirements for and implement specialized workflow process and management support functions, visualization, and reporting. Over the past year, the PPB BOS program has removed duplicative data, functionality, and business process. PPB BOS has also improved data visibility, accuracy, and access through deployment of the Enterprise Army PPBE Data Warehouse. In FY10, PPB BOS will deploy an enterprise-level application to improve operations, reduce workload, expand data visibility, and transfer budget data to GFEBs. The BKO will provide a central location of collective discussion and collaboration, supporting senior leadership as well as day to day program management tasks.</p>			8392
Total			8392

B. Other Program Funding Summary Not applicable for this item.

C. Acquisition Strategy Modernize IT legacy systems across Army IT domains by adapting/improving government off the shelf (GOTS), commercial off the shelf (COTS), and new software to perform various tasks in a networked environment. These efforts include the Army Human Resources Data Repository (AHDR), the Wounded Warrior Accountabilty System (WWAS), the Army Mapper, the Program Planning Budget Execution (PPBE) - Business Operating System (BOS), and the Base Realignment and Closure (BRAC) Knowledge Office (BKO).

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0605450A - Joint Air-to-Ground Missile (JAGM)				
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
JA6 JOINT AIR-TO-GROUND MISSILE (JAGM)		118125	127439	Continuing	Continuing

A. Mission Description and Budget Item Justification: The Joint Air-to-Ground Missile (JAGM) is an air-launched missile system that provides advanced line-of-sight (LOS) and beyond-line-of-sight (BLOS) capabilities, including precision point and fire-and-forget (active and passive) seeker targeting technologies; increased range; and increased lethality against soft and hardened moving and stationary targets. The system will be used with fixed-wing aircraft, rotary-wing aircraft, and unmanned aircraft systems (UAS).

The JAGM System will replace aviation-launched TOW, the HELLFIRE family of missiles, and the Navy's Maverick family of missiles. JAGM is a joint program with the Army, Navy and USMC that addresses rotary/fixed wing and UAS requirements. The Army is funding missile development and integration to Army unique platforms with the Navy funding their platform integration requirements. The Super Hornet (F/A 18E/F), the Apache (AH-64D), and the Super Cobra (AH-1Z) are Milestone C threshold platforms with integration occurring no later than (NLT) the end of FY13 and Initial Operational Capability (IOC) beginning NLT the end of FY16. Other threshold platforms are the Seahawk (MH-60R) and Extended Range Multi Purpose (ERMP) UAS, and an Army Light Armed Scout Helicopter. MH-60R integration occurs NLT FY14. Integration timelines for ERMP and the Light Armed Scout Helicopter are notional and will be updated prior to Milestone B as those programs mature. JAGM will increase the Warfighter's operational flexibility by effectively engaging a variety of stationary and mobile targets on the battlefield, including advanced heavy/light armored vehicles, bunkers, buildings, patrol craft, command and control vehicles, transporter/erector (e.g., SCUD) launchers, artillery systems, and radar/air defense systems. Its multi-mode seeker will provide robust capability in adverse weather, day or night, and in an obscured/countermeasure environment, against both stationary and moving targets. JAGM supports more efficient logistics for expeditionary force tailoring by replacing several missile variants with a single, interoperable weapon. The warhead is designed for high performance against both armored and non-armored targets. It also allows flexibility in the location of resupply on the battlefield, thereby minimizing the logistics burden of the combat force. The JAGM System includes missile, trainers, containers, support equipment, and launcher MODS. Six prototype missiles per contractor will be procured to support Technology Development.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

May 2009

BUDGET ACTIVITY	PE NUMBER AND TITLE		
5 - System Development and Demonstration	0605450A - Joint Air-to-Ground Missile (JAGM)		
<u>B. Program Change Summary</u>	FY 2008	FY 2009	FY 2010
Previous President's Budget (FY 2009)		118517	129401
Current BES/President's Budget (FY 2010)		118125	127439
Total Adjustments		-392	-1962
Congressional Program Reductions		-225	
Congressional Recissions			
Congressional Increases			
Reprogrammings			
SBIR/STTR Transfer			
Adjustments to Budget Years		-167	-1962

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0605450A - Joint Air-to-Ground Missile (JAGM)			PROJECT JA6	
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
JA6 JOINT AIR-TO-GROUND MISSILE (JAGM)		118125	127439	Continuing	Continuing

A. Mission Description and Budget Item Justification: The Joint Air-to-Ground Missile (JAGM) is an air-launched missile system that provides advanced line-of-sight (LOS) and beyond-line-of-sight (BLOS) capabilities, including precision point and fire-and-forget (active and passive) seeker targeting technologies; increased range; and increased lethality against soft and hardened moving and stationary targets. The system will be used with fixed-wing aircraft, rotary-wing aircraft, and unmanned aircraft systems (UAS).

The JAGM System will replace aviation-launched TOW, the HELLFIRE family of missiles, and the Navy's Maverick family of missiles. JAGM is a joint program with the Army, Navy and USMC that addresses rotary/fixed wing and UAS requirements. The Army is funding missile development and integration to Army unique platforms with the Navy funding their platform integration requirements. The Super Hornet (F/A 18E/F), the Apache (AH-64D), and the Super Cobra (AH-1Z) are Milestone C threshold platforms with integration occurring no later than (NLT) the end of FY13 and Initial Operational Capability (IOC) beginning NLT the end of FY16. Other threshold platforms are the Seahawk (MH-60R) and Extended Range Multi Purpose (ERMP) UAS, and an Army Light Armed Scout Helicopter. MH-60R integration occurs NLT FY14. Integration timelines for ERMP and the Light Armed Scout Helicopter are notional and will be updated prior to Milestone B as those programs mature. JAGM will increase the Warfighter's operational flexibility by effectively engaging a variety of stationary and mobile targets on the battlefield, including advanced heavy/light armored vehicles, bunkers, buildings, patrol craft, command and control vehicles, transporter/erector (e.g., SCUD) launchers, artillery systems, and radar/air defense systems. Its multi-mode seeker will provide robust capability in adverse weather, day or night, and in an obscured/countermeasure environment, against both stationary and moving targets. JAGM supports more efficient logistics for expeditionary force tailoring by replacing several missile variants with a single, interoperable weapon. The warhead is designed for high performance against both armored and non-armored targets. It also allows flexibility in the location of resupply on the battlefield, thereby minimizing the logistics burden of the combat force. The JAGM System includes missile, trainers, containers, support equipment, and launcher MODS. Six prototype missiles per contractor will be procured to support Technology Development.

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
Software Simulation Algorithm Maturity		8232	7180
Integrated Baseline Review (IBR)		11174	
Design Verification Test/Engineering Development Test (EDT)		50713	50769
System Requirement Review (SRR)		44698	
Small Business Innovative Research (SBIR)/Small Business Technology Transfer Program (STTR)		3308	
Source Selection Evaluation Board (SSEB)			6003
Preliminary Design Review (PDR)			23072
Prototype Flights			35205
Apache Integration			5210

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0605450A - Joint Air-to-Ground Missile (JAGM)	PROJECT JA6
Total		118125 127439

<u>B. Other Program Funding Summary</u>	FY 2008	FY 2009	FY 2010	To Compl	Total Cost
Joint Air-to-Ground Missile (JAGM) PE: 643460	51690				51690
Joint Air-to-Ground Missile (JAGM) SSN: C70302				Continuing	Continuing
Navy (RDTE) Joint Air-to-Ground Missile (JAGM)	11626	61757	81434	Continuing	Continuing
Navy (Procurement) Joint Air-to-Ground Missile (JAGM)				Continuing	Continuing

Comment: JAGM RDT&E funding for FY 2008 was received under Budget Activity 4, Advanced Component Development and Prototypes (ACD&P). Following solicitation and formal source selection, the government competitively awarded Fixed Price Incentive (FPI) contracts (with full cost reporting) to two contractors for the 27 month Technology Development (TD) phase with FY2008 funds. All JAGM RDT&E funding for FY 2009 and out has been established under Budget Activity 5, System Development and Demonstration.

C. Acquisition Strategy The JAGM System is an ACAT 1D Joint Army/Navy/USMC program with the Army designated as lead service. The JAGM system is a common air-to-ground precision guided missile for use by Joint Service manned and unmanned aircraft to destroy high-value stationary, moving, and relocateable land and naval targets. JAGM provides current and future aviation platforms a common, multi-mode weapon, with reactive targeting capability, which satisfies the sum of needs across the joint platforms and eliminates the requirement for separate upgrades to multiple existing missile systems. The JAGM program has four phases: a TD phase including system integration and preliminary design review (PDR), an Engineering Manufacturing, and Development (EMD) phase, a Production & Deployment (PD) phase, and an Operations & Support phase. Following solicitation and formal source selection, the government competitively awarded Fixed Price Incentive (FPI) contracts (with full cost reporting) to two contractors for the 27-month TD phase. The TD phase culminates with PDR and competitive fly-off of the contractor's prototype missiles. Approximately 22-months after TD phase contract award, TD contractors will be asked to submit proposals for the EMD and Low Rate Initial Production (LRIP) phases. A second source selection process will evaluate the contractor's TD performance and proposals for the EMD and PD phases. Offeror's plans to facilitate competition during the PD phase will be considered during the evaluation process for the EMD contract. The government plans to award one cost plus incentive fee/award fee (CPIF/AF) contract for the 48-month EMD phase, including provisions for procurement of long lead-time items to support the follow-on PD phase. Fixed Price Type contracts are planned for the PD phase (LRIP and full rate production (FRP)).

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
5 - System Development and Demonstration			0605450A - Joint Air-to-Ground Missile (JAGM)							JA6		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Lockheed Martin	FPI	Orlando, Florida				43860	1Q	49030	1Q	Cont.	Cont.	
Raytheon	FPI	Tucson, Arizona				50000	1Q	49030	1Q	Cont.	Cont.	
Support Contracts	Various	Various				4664	1-3Q	7120	1-3Q	Cont.	Cont.	
Development Engineering	Various	Various				3171	1-3Q	5859	1-3Q	Cont.	Cont.	
SBIR/STTR						3308	1Q				3308	
Subtotal:						105003		111039		Cont.	Cont.	
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Contractor Support	Various	Various				3488	1-3Q	4354	1-3Q	Cont.	Cont.	
Subtotal:						3488		4354		Cont.	Cont.	
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Other Gov Agencies	Various	Various				3216	1-3Q	3569	1-3Q	Cont.	Cont.	
Subtotal:						3216		3569		Cont.	Cont.	

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration			PE NUMBER AND TITLE 0605450A - Joint Air-to-Ground Missile (JAGM)							PROJECT JA6		
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
System Eng/ Project Management	Various	Various				6418	1-4Q	8477	1-4Q	Cont.	Cont.	
Subtotal:						6418		8477		Cont.	Cont.	
Project Total Cost:						118125		127439		Cont.	Cont.	

Schedule Detail (R4a Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration			PE NUMBER AND TITLE 0605450A - Joint Air-to-Ground Missile (JAGM)				PROJECT JA6	
<u>Schedule Detail</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>
Preliminary Design Review (PDR)			4Q					

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Termination Liability Funding For Major Defense Acquisition Programs, RDT&E Funding (R5)		May 2009	
BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0605450A - Joint Air-to-Ground Missile (JAGM)		PROJECT JA6
Funding in \$000			
Program	FY 2008	FY 2009	FY 2010
Joint Air-To-Ground (JAGM)			
Total Termination Liability Funding:			
<p>Remarks: For the FPIF Phase I, the JAGM Prime Contract incorporates the "Limitation of Government's Obligation" clause (DFARS 252.232-7007) to limit the Government's liability. For the CPIF/AF Phase II, the JAGM Prime Contract will incorporate the "Limitation of Funds" clause (FAR 52.232-22) to limit the Government's liability. For the JAGM Program, these two clauses limit the Government's financial liability per the contract to those funds placed on contract plus any outstanding commitments plus costs associated with the orderly termination of contractual actions.</p>			