ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2006

BUDGET ACTIVITY	PE NUMBER AND TITLE
2 - Applied Research	**0602622A - Chemical, Smoke and Equipment Defeating Technology**

COST (In Thousands)		FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate
Total Program Element (PE) Cost		9977	10567	2212	2252	2305	2328	2365
552	SMOKE/NOVEL EFFECT MUN	3175	2483	2212	2252	2305	2328	2365
BA1	Protection Technologies (CA)	6802	8084	0	0	0	0	0

A. Mission Description and Budget Item Justification: The goal of this Program Element (PE) is to research and investigate smoke and obscurant technologies to increase personnel and platform survivability. The PE funds applied research in materials science and dissemination methodologies and mechanisms to counter enemy weapon target acquisition systems and/or degrade enemy surveillance capability. The obscurant materials and dissemination systems will be designed to be effective, safe, and environmentally acceptable. Modeling and Simulation (M&S) tools will be developed and used to analyze the ability of newly developed obscurant materials to increase survivability of soldiers and platforms. In FY06 a portion of the funding in project 552 is realigned to PE 0603004 project L97 to mature promising technology for potential transition to System Development and Demonstration (SDD). Work in this PE is consistent with the Strategic Planning Guidance, the Army Science and Technology Master Plan (ASTMP), the Army Modernization Plan, and the Defense Technology Area Plan (DTAP). This PE contains no duplication with any effort within the Military Departments. This work is performed by the Army Research, Development and Engineering Command, Edgewood Chemical Biological Center, Edgewood, MD.

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B. Program Change Summary	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY 2006)	7585	2519	2573
Current BES/President's Budget (FY 2007)	9977	10567	2212
Total Adjustments	2392	8048	-361
Congressional Program Reductions		-46	
Congressional Rescissions		-106	
Congressional Increases		8200	
Reprogrammings	2392		
SBIR/STTR Transfer			
Adjustments to Budget Years			-361

FY 05 increase of +$2.4 million (after adjustment for Congressional Undistributed Reductions) is attributed to reprogramming of two Congressional Adds. $1.4 million for Standoff Hazardous Agent Detection and Evalution Systems Research and $1.0 million for Advanced Laser Electric Program, both from PE 0603627A for proper execution. FY 07 decrease of -0.4 million attributed reprogramming to offset business re-engineering efficiencies.

Six FY06 Congressional adds totaling $8200 were added to this PE.

FY06 Congressional adds with no R-2As (appropriated amount shown):
($1000) Application of CHP-105 to Class A Biowarfare Agents
($1000) Automated Multiplexed Diagnostic System for Biowarfare Agent Detection
($3000) Battlefield Production of Modified Vaporous Hydrogen Peroxide for Field Decontamination
($1200) Bioaerosol Sampling Systems for US Army Force Protection
($1000) Biotechnology Education Initiative
($1000) Development/Operation of Test Range for Advanced Sensors and Obscurants

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2006

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
2 - Applied Research	**0602622A - Chemical, Smoke and Equipment Defeating Technology**	**552**

COST (In Thousands)	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate
552 SMOKE/NOVEL EFFECT MUN	3175	2483	2212	2252	2305	2328	2365

A. Mission Description and Budget Item Justification: Project 552 researches and investigates smoke and obscurant technologies with potential to enhance personnel/platform survivability by degrading threat force surveillance sensors and defeating the enemy's target acquisition devices, missile guidance, and directed energy weapons. It researches advanced infra-red (IR) and multi-spectral obscurant materials with potential to provide effective, affordable, and efficient screening of deployed forces, while being safe and environmentally acceptable. Other efforts within this project advance dissemination, delivery, M&S and vehicle protection technology to expand survivability options through increased standoff and threat protection. A major effort on dissemination of advanced infrared (IR) obscurants is making improvements to a high performance IR obscurant so the material can be effectively used in smoke pots and grenades. M&S tools will be investigated to predict performance and analyze strategic use of obscurants on the battlefield. In FY06 a portion of the funding in this project is realigned to PE 0603004 project L97 to mature promising technology for potential transition to SDD. The cited work is consistent with Strategic Planning Guidance, the Army Science and Technology Master Plan (ASTMP), the Army Modernization Plan, and the Defense Area Plan (DTAP). Work in this project is performed by the Army Research, Development and Engineering Command, Edgewood Chemical Biological Center, Edgewood, MD.

Accomplishments/Planned Program	FY 2005	FY 2006	FY 2007
Advanced IR Obscurants. In FY05, tested and assessed in a laboratory environment two IR obscurant screening materials that met performance goals for their use as dry powder aerosols; performed simulations that predicted the potential increase of survivability for the soldier due to improved obscurant material performance. In FY06, determine viable methods for smoke dissemination and begin to modify promising high performing materials to maximize dissemination behavior. In FY07, will continue to refine the loading techniques of IR materials into munitions and evaluate these techniques for their effect on smoke dissemination; and evaluate performance of these materials in a laboratory environment.	2350	1331	1322
Obscurant Enabling Technology for other smoke capabilities (non IR obscurants). In FY05, documented field evaluation of long range delivery (5-8 times further than current) and quick response time (<50% of current) concepts for vehicle and dismounted soldier protection. In FY06, perform field demonstration of long range and quick response concepts for vehicle and dismounted soldier protection. In FY07, will investigate novel non-thermal dissemination methods for visual smoke; using modeling and simulation, will assess the impact of contrast reduction on the effectiveness of obscurant materials.	825	1152	890
Total	3175	2483	2212