ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

May 2009

BUDGET ACTIVITY	PE NUMBER AND TITLE
6 - Management support	**0604258A - TARGET SYSTEMS DEVELOPMENT**

	COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate
	Total Program Element (PE) Cost	15402	13453	13615
238	AERIAL TARGETS	5668	6205	4273
459	GROUND TARGETS	9734	7248	9342

A. Mission Description and Budget Item Justification: This program funds aerial and ground target hardware and software development, maintenance, and upgrades. The overall objective is to ensure validation of weapon system accuracy and reliability by developing aerial and ground targets essential for test and evaluation (T&E). These targets are economical and expendable, remotely controlled or stationary, and often destroyed in use. The Army is the Tri-Service lead under Reliance for providing rotary wing, mobile ground, towed, and designated targets for T&E. The Army executes development of some Service-peculiar target requirements in support of quality assurance, lot acceptance, and training and continues development of Service-peculiar and on-going target materiel upgrades to maintain continuity with current weapons technology and trends in modern and evolving Army weapons.

B. Program Change Summary	FY 2008	FY 2009	FY 2010
Previous President's Budget (FY 2009)	17787	13498	13703
Current BES/President's Budget (FY 2010)	15402	13453	13615
Total Adjustments	-2385	-45	-88
Congressional Program Reductions		-45	
Congressional Rescissions			
Congressional Increases			
Reprogrammings	-1933		
SBIR/STTR Transfer	-452		
Adjustments to Budget Years			-88

The Change Summary includes the following:

FY08 includes reprogramming the congressional add "Next Generation Ice Protection Technologies for UAVs" ($1,933) to PM UAV to execute in accordance with Congressional intent and ($452K) for SBIR/STTR transfer.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
6 - Management support	**0604258A - TARGET SYSTEMS DEVELOPMENT**	**238**

COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate
238 AERIAL TARGETS	5668	6205	4273

A. Mission Description and Budget Item Justification: Aerial Targets support Army Transformation and the Overseas Contingency Operations by providing for development, acquisition, operation, storage, update, and maintenance of realistic surrogate or acquired threat high-performance, multi-spectral aerial targets and development of virtual target computer models of aerial targets. Modern weapons require test, evaluation, and training using threat representative aerial targets to assess their effectiveness on the battlefield. This program encompasses a family of rotary and fixed-wing targets; full-scale, miniature and subscale targets; virtual targets; ancillary devices; and their control systems. These products are required to adequately stress weapon systems undergoing test and evaluation (T&E). In order to stress systems under test and evaluation, aerial targets must have flight characteristics, signatures, and other performance factors that emulate the modern threat. This includes long-range planning to determine future target needs and development of coordinated requirement documents; the management of target research, development, test and evaluation process; execution of the validation process to ensure that surrogate targets adequately represent the threat; development and acquisition of surrogate and acquired targets; and continuing maintenance, storage, and development/enhancements/update via engineering services of the developed and acquired threat targets to ensure availability for the T&E customer. The Army is the Reliance lead for rotary wing targets and towed target developments and the Tri-Service lead for procurement and enhancement of the MQM-107 fixed wing target.

Accomplishments/Planned Program:	FY 2008	FY 2009	FY 2010
Continues management and sustainment of Army (Reliance Lead) Rotary Wing Targets, including updates for obsolescence, maintenance, and safety to support T&E programs such as Medium Extended Air Defense System (MEADS), Surface Launched Advanced Medium Range Air to Air Missile (SLAMRAAM), Apache Block III, and others.	823	517	488
Provides Research, Development, Test and Evaluation (RDT&E) portion of funds needed to update aging High Speed Aerial Target (HSAT, MQM-107) equipment to overcome obsolescence for spare and repair parts, and to maintain equipment and documentation for safe operations supporting T&E programs such as Patriot, Stinger, Joint Land Attack Cruise Missile Defense Elevated Netted Sensors (JLENS), MEADS, SLAMRAAM, and classified programs for Army and Tri-Service customers.	1418	1207	1275
Provides for engineering support for all Target Tracking Control Systems (TTCS) and aerial target control components. Updates documentation of the system and operations and maintenance manuals. Supports operational repair and maintenance with engineering analysis of target control system performance. Provides for design modifications to solve obsolescence problems and updates software to correct anomalies. Provide for software performance enhancement modifications to support test and evaluation missions, improves test sets and develops upgraded operator displays. This will provide support to programs such as Patriot, SLAMRAAM, MEADS, and others.	741	678	523
Continues development, enhancement, maintenance, and storage for all RDT&E aerial targets, towed targets, and ancillary devices. Continues development and testing of Low Cost Towed target systems (Cruise Missile Tow Target, Reduced Radar Tow Target, and the Special Low Altitude Tow Target) emulating current threats at a very low cost to Patriot, JLENS, SLAMRAAM and classified customers. Signature modification and performance enhancement efforts for these targets is ongoing. Investigate/test other cost-saving towed systems (Glide-Tow and Height-Keeping-Tow) for Air Defense Weapons System customers.	633	694	669
Provides engineering support for the Integrated Avionics Program (IAP). Designs component changes to correct for obsolescence.	289	232	261

Update software to correct problems and to modify the software to support specific test and evaluation mission requirements. IAP provides the avionics for aerial targets to support multiple mission requirements for programs such as Patriot, SLAMRAAM, and MEADS.			
Supports research and development of Aerial Virtual Targets of evolving Army and DOD simulation standards and evolving implementation techniques; focuses on simulation target models of airplanes, helicopters, missiles, and unmanned aerial vehicles in commonly used formats to support visualization, infrared, and radar analysis simulations; supports verification and validation of models, and provides archiving and distribution of simulation target models to simulation developers throughout the Army and DOD T&E communities. Simulation target models are employed to facilitate simulations for both developmental testing (DT) and operational testing (OT) test planning, test rehearsal, post-test analysis, hardware-in-the-loop testing, and execution of test events that are too costly or difficult to be conducted under actual field conditions. These models are being used by Developmental Test Command's simulations, Operational Test Command's Analytical Simulation and Instrumentation Suite (OASIS), and multiple weapon system's T&E activities. These models are available on line to all T&E simulation developers.	818	890	549
Provides engineering funding for the generic, tactical class Unmanned Aerial System Target (UAS-T) to provide threat representative support for SLAMRAAM testing in FY08-11 and MEADS testing in future years. Provides management of approximately 20 customer funded production air vehicles and initial target fleet, ground support equipment, maintenance and operator training. Enables identification and correction of system anomalies identified during operations. Provides limited engineering capability to address minor enhancements to the basic target system identified during operations. The target system can be controlled manually and in a beyond-visual-range mode using either the CloudCap Piccolo ground station or the Target Tracking Control System-Upgrade ground control station. This target system provides significant cost avoidance over using operational, tactical Unmanned Aerial Vehicles for T&E Targets.	582	538	508
Provides for management and requirements development leading to development, testing and fielding of replacement Rotary Wing (RW) targets to replace the current aging and unsupportable targets (aircraft & drone kits) with new fully supportable/maintainable RW capability for T&E customers. This capability is required to provide RW targets for kill and non-kill missions for T&E tests for customers such as MEADS, SLAMRAAM, FCS-SoS, EAADS, APACHE and others.	364	1290	
Small Business Innovative Research / Small Business Technology Transfer Programs		159	
Total	5668	6205	4273

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BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
6 - Management support	**0604258A - TARGET SYSTEMS DEVELOPMENT**	**459**

COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate
459 GROUND TARGETS	9734	7248	9342

A. Mission Description and Budget Item Justification: This program funds Army efforts to support test and evaluation (T&E) of advanced weapon systems and supports Army Transformation by developing surrogates, acquiring foreign equipment and developing virtual target computer models of ground vehicle targets. These products are required to adequately stress weapon systems undergoing T&E. This tasking includes long-range planning to determine future target needs and development of coordinated requirement documents; the centralized management of the ground target research, development, test and evaluation processes; execution of the validation process; acquisition of foreign equipment; and continuing maintenance, storage, and development/enhancement/update via engineering services of developed and acquired targets to ensure availability for T&E customers. This program also manages use of current assets and operates centralized spare parts program. The US Army is the Tri-Service lead for providing mobile ground targets for T&E.

Accomplishments/Planned Program:	FY 2008	FY 2009	FY 2010
Funds management and oversight of five Primary Operating Centers to include operation, storage, maintenance, repair, safety and configuration management for 155 active and 152 inactive Foreign Mobile Ground Target Vehicles, and acquisition of new material and spare parts. Efforts supports users such as Future Combat Systems (FCS), Apache Block III, Guided Multiple Launch Rocket System (GMLRS), Intelligent Munitions System (IMS), Mid-Range Munition (MRM), Non-Line-of-Sight Launch System (NLOS-LS), and others.	2140	2456	2770
Manages Mobile Ground Target Hardware effort. Supplements the Mobile Ground Targets threat fleet with up to date threat representative targets that emulate the visual, infrared, radio frequency, and acoustic signatures to support T&E (e.g.FCS,NLOS, IMS and others).	3421	1860	2656
Supports research and development of the Ground Virtual Targets of evolving Army and DOD simulation standards and evolving implementation techniques; focuses on simulation target models of wheeled and tracked ground vehicles in commonly used model formats; develops simulation target model infrared (IR) and radio frequency (RF) signature models; supports verification and validation of models, and provides archiving and distribution of simulation target models to simulation developers throughout the Army and DOD T&E communities. Simulation target models are employed to facilitate simulations for both developmental testing (DT) and operational testing (OT), (test planning, test rehearsal, post-test analysis, hardware-in-the-loop testing, and execution of test events that are too costly or difficult to be conducted under actual field conditions). These models will be used by Developmental Test Command's simulations, Operational Test Command's Analytical Simulation and Instrumentation Suite (OASIS, and multiple weapon system's T&E (e.g. Future Combat System (FCS), Excalibur, Mid Range Munition (MRM), etc.). These models are available on-line to all T&E simulation developers.	1847	2762	1041
Congressional Add - Mobile objects for Net-Centric Operations. Funding executed by INSCOM	2326		
Funds acquire and field fully mission capable targets (such as Main battle Tanks, Infantry Fighting Vehicles, and Armored Personnel Carriers) to meet emerging requirements for threat representative missions. This program will provide realistic threat capable targets for use in force-on-force exercises to allow Blue Forces to think and adapt to the changing battle dynamic as it unfolds.			2875

Small Business Innovative Research / Small Business Technology Transfer Program		170	
Total	9734	7248	9342