

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

February 2003

BUDGET ACTIVITY

6 - Management support

PE NUMBER AND TITLE

0604258A - TARGET SYSTEMS DEVELOPMENT

COST (In Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate
Total Program Element (PE) Cost	22504	10226	13890	12582	11016	10542	10782	11034
238 AERIAL TARGETS	6112	5363	8260	8303	7492	6941	6329	6476
459 GROUND TARGETS	16392	4863	5630	4279	3524	3601	4453	4558

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, and assigned legacy 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 ongoing target materiel upgrades to maintain continuity with current weapons technology and trends in modern and evolving Army weapons.

B. Program Change Summary	FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget (FY 2003)	25003	10772	14157	12925
Current Budget (FY 2004/2005 PB)	22504	10226	13890	12582
Total Adjustments	-2499	-546	-267	-343
Congressional program reductions				
Congressional rescissions		-216		
Congressional increases				
Reprogrammings	-1825	-59		
SBIR/STTR Transfer	-674	-271		
Adjustments to Budget Years			-267	-343

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BUDGET ACTIVITY 6 - Management support				PE NUMBER AND TITLE 0604258A - TARGET SYSTEMS DEVELOPMENT				PROJECT 238			
COST (In Thousands)				FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate
238	AERIAL TARGETS			6112	5363	8260	8303	7492	6941	6329	6476
<p><u>A. Mission Description and Budget Item Justification:</u> Supports Army Transformation 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; tactical ballistic targets; virtual targets; ancillary devices; and their control systems. These products are required to adequately stress weapon systems undergoing test and evaluation (T&E). To stress systems under test, aerial targets must have flight characteristics, signatures, and other performance factors that emulate the modern threat. This tasking 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 US Army is the Reliance lead for rotary wing targets and the Tri-Service lead for procurement and enhancement of the MQM-107 fixed wing target.</p> <p>These systems support the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).</p>											
<u>Accomplishments/Planned Program</u>							<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	
Continue management and sustainment of more than 20 Army(Reliance Lead) Rotary Wing (RW) Targets, including updates for obsolescence, maintenance, and safety to support T&E programs such as Comanche, Medium Extended Air Defense System (MEADS), Surface Launched AMRAAM (SLAMRAAM), and others.							143	398	414	451	
Provides RDT&E portion of funds needed to update aging 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. In FY05 begin process to acquire replacements for expended targets, which will include development of updated component/subsystem replacements of no-longer-available, obsolete equipment and for an enhanced performance envelope, including endurance.							1093	843	997	1566	

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<u>Accomplishments/Planned Program (continued)</u>		<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Complete redesign and testing of upgraded Target Tracking Control System (TTCS) to new design. Complete testing of upgraded initial test sets. In FY02 investigate integration of BQM-34 target control capability into updated TTCS design. Continue to support current TTCS to maintain operations until all TTCSs are upgraded. Continue management of Targets Management Initiative to develop and integrate a set of Common Digital Architecture control equipment into aerial targets to improve performance and reduce operating costs. FY03 – 05 complete upgrade of remaining TTCS to new configuration at a rate of 2 – 3 per year. Also, includes cost of development of improved integrated test set, improvement of operator displays, software performance enhancements, and documentation of design. This will provide support to programs such as Patriot, SLAMRAAM, JLENS, MEADS, Patriot, etc..		2236	2751	3673	2104
Continue development, enhancement, maintenance, and storage for all RDT&E aerial targets, towed targets, and ancillary devices. Includes FY02 completion of development and testing of Tandem Tow Target under cooperative initiative with British, Australian, and Canadian Governments (The Technical Cooperative Program) with delivery of three test articles and initiated development of Low Cost Towed Target with delivery of three initial prototypes. FY03-04 completes development and testing of Low Cost Towed target emulating current threats at a very low cost (classified customer). FY05 integrates tandem tow technology into large-scale towed targets to support air defense weapons T&E (e.g. Patriot).		1251	694	732	749
Integrated Avionics Program incorporated Central Test and Evaluation Investment Program (CTEIP) Common Digital Architecture into aerial targets controlled by TTCS, improving reliability, maintainability, and target performance while reducing operational cost. FY 02 – 04 develops initial prototypes, test set, and performs tests in an MQM -107. FY05 provides RDT&E portion to initialize production, and provides maintainer and operator training, and finalizes technical documentation. The customer will provide funding for production units.		654	677	750	1509

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Accomplishments/Planned Program (continued)		FY 2002	FY 2003	FY 2004	FY 2005	
Supports research and development of evolving Army and DOD simulation standards and evolving implementation techniques; fabricates additional simulation target models of airplanes, helicopters, missiles, and unmanned aerial vehicles in commonly used model formats; develops simulation target model infrared and radar frequency signature models, and provides archiving and distribution of simulation target models to simulation developers throughout the Army and DOD test and evaluation communities. Simulation target models are employed to facilitate simulations for both Developmental and Operational Testing (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 DTC's Virtual Proving Ground simulation, OTC's Analytical Simulation and Instrumentation Suite (OASIS), and multiple weapon systems' T&E (e.g. Future Combat System, Comanche, Patriot, IBCT (Stryker), MEADS, etc.). These models are on-line and available to all T&E simulation developers.		735	0	394	814	
Develops, tests and provides generic, tactical class Unmanned Aerial Vehicle (UAV) targets to provide threat representative support for MEADS/SLAMRAAM testing in FY 05-06 and Comanche and MEADS testing in future outyears. Provides 12 COTS based air vehicles for development testing and initial targets fleet, ground support equipment, and maintainer and operator training. TTCS will be utilized for target control. Significant cost avoidances over using real UAVs for T&E targets.		0	0	1300	1110	
Totals		6112	5363	8260	8303	

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COST (In Thousands)			FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate
459	GROUND TARGETS		16392	4863	5630	4279	3524	3601	4453	4558
<p><u>A. Mission Description and Budget Item Justification:</u> 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 process; 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 test and evaluation customers. Project 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.</p> <p>This program line supports the Legacy-to-Objective transition path of the Transformation Campaign Plan (TCP).</p>										
<u>Accomplishments/Planned Program</u>							<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Provide funding to help manage and provide oversight of five Primary Operating Centers to include operation, storage, maintenance, and configuration management for the repair of more than 300 Mobile Ground Target vehicles, including acquisition of new material and spare parts. Supports users such as FCS, Comanche, ATACMS, Apache, etc.							1831	2526	2335	2224

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<u>Accomplishments/Planned Program (continued)</u>		<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	
Supports research and development of evolving Army and DOD simulation standards and evolving implementation techniques; fabricates additional 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, and provides for 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 DT and 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 DTC's Virtual Proving Ground simulation, OTC's Analytical Simulation and Instrumentation Suite (OASIS), and multiple weapon systems' T&E (e.g. Future Combat System (FCS), Comanche, ATACMS, IBCT (Stryker), Land/Air Warrior, etc.) These models are available on-line to all T&E simulation developers.		2212	1238	1965	1549	
Completed fabrication and deployment of the Next Mobile Ground Target Surrogate (Russian Smerch Multiple Rocket Launcher) units into the operational fleet to maintain up-to-date threat representative targets to support T&E (e.g., Comanche, Brilliant Anti-Armor Submunitions (BAT)). Completed delivery of six surrogates.		1055	0	0	0	
Develops (FY02-03), tests (FY04), validates (FY04), and fields (FY05) a very low cost (less than 10% of cost of the actual Main Battle Tank (MBT)) Russian MBT Surrogate, which will emulate the visual, infrared, and radio frequency signatures to support T&E (e.g., Comanche, Apache, LOSAT, and others). Delivers 22 surrogates.		1274	1099	1330	506	
Completed deployment of surrogate Infantry Fighting Vehicle (Russian name BMP3-S) into the operational fleet and update system configuration to maintain up-to-date threat representative targets that are required to support Comanche and BAT T&E in the FY 2002 timeframe.		225	0	0	0	
Acquire up to four T-80UD main battle tanks from the government of the Ukraine, to be placed in the Mobile Ground Targets vehicle fleet for use by T&E programs such as Comanche, BAT Product Improvements (BAT P3I), Land/Air Warrior, Apache, and others.		9795	0	0	0	
Totals		16392	4863	5630	4279	