

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2004

BUDGET ACTIVITY

6 - Management support

PE NUMBER AND TITLE

0604258A - TARGET SYSTEMS DEVELOPMENT

| COST (In Thousands) | | FY 2003 Actual | FY 2004 Estimate | FY 2005 Estimate | FY 2006 Estimate | FY 2007 Estimate | FY 2008 Estimate | FY 2009 Estimate |
|---------------------------------|----------------|-------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| Total Program Element (PE) Cost | | 10049 | 13444 | 11017 | 9446 | 9423 | 9830 | 10330 |
| 238 | AERIAL TARGETS | 5270 | 7995 | 7241 | 6392 | 6174 | 5750 | 6043 |
| 459 | GROUND TARGETS | 4779 | 5449 | 3776 | 3054 | 3249 | 4080 | 4287 |

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 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.

These systems support the Current to Future transition path of the Transformation Campaign Plan (TCP).

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| | FY 2003 | FY 2004 | FY 2005 |
|---------------------------------------|---------|---------|---------|
| Previous President's Budget (FY 2004) | 10226 | 13890 | 12582 |
| Current Budget (FY 2005 PB) | 10049 | 13444 | 11017 |
| Total Adjustments | -177 | -446 | -1565 |
| Congressional program reductions | | -118 | |
| Congressional rescissions | | | |
| Congressional increases | | | |
| Reprogrammings | -177 | -328 | |
| SBIR/STTR Transfer | | | |
| Adjustments to Budget Years | | | -1565 |

Change Summary Explanation: Funding - FY 2005: Funds realigned (\$1565) to support higher priority requirements.

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|--|----------------|--|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| BUDGET ACTIVITY 6 - Management support | | PE NUMBER AND TITLE 0604258A - TARGET SYSTEMS DEVELOPMENT | | | PROJECT 238 | | | |
| COST (In Thousands) | | FY 2003 Actual | FY 2004 Estimate | FY 2005 Estimate | FY 2006 Estimate | FY 2007 Estimate | FY 2008 Estimate | FY 2009 Estimate |
| 238 | AERIAL TARGETS | 5270 | 7995 | 7241 | 6392 | 6174 | 5750 | 6043 |
| <p>A. Mission Description and Budget Item Justification: 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; 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 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 Current to Future transition path of the Transformation Campaign Plan (TCP).</p> | | | | | | | | |
| Accomplishments/Planned Program | | | | | FY 2003 | FY 2004 | FY 2005 | |
| Continue management and sustainment of more than 20 Army (Reliance Lead) Rotary Wing Targets, including updates for obsolescence, maintenance, and safety to support T&E programs such as Comanche, Medium Extended Air Defense System (MEADS), Surface Launched Advanced Medium Range Air to Air Missile (AMRAAM) (SLAMRAAM), and others. | | | | | 343 | 414 | 349 | |
| 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. FY05 begins the 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. | | | | | 996 | 997 | 1566 | |

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PROJECT

238**Accomplishments/Planned Program (continued)**

FY 2003

FY 2004

FY 2005

Complete redesign and testing of upgraded Target Tracking Control System (TTCS) to new design. Complete testing of upgraded initial test sets. 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 completes upgrade of remaining TTCS to new configuration at a rate of 2-3 per year. Also develops/improves integrated test set, operator displays, software performance enhancements, and documentation of design. This will provide support to programs such as Patriot, SLAMRAAM, JLENS, MEADS, and others.

2691

3389

2104

Continue development, enhancement, maintenance, and storage for all RDT&E aerial targets, towed targets, and ancillary devices. FY03-05 continues development and testing of Low Cost Towed target system emulating current threats at a very low cost to Patriot and a classified customer. FY05 also integrates tandem tow technology into large-scale towed targets to support air defense weapons T&E (e.g. Patriot).

706

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 03-04 develops initial prototypes and test set, and performs tests using an MQM-107. FY05 provides RDT&E portion to initialize production and provide maintainer and operator training, and finalize technical documentation. The customer will provide funding and training for production units.

534

750

1509

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| Accomplishments/Planned Program (continued) | | FY 2003 | FY 2004 | FY 2005 |
| FY04-05 funding 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 Developmental Test Command's (DTC) Virtual Proving Ground simulation, Operational Test Command's (OTC) Analytical Simulation and Instrumentation Suite (OASIS), and multiple weapon systems' T&E (e.g. Future Combat System, Comanche, Patriot, SBCT (Stryker), MEADS, etc.). These models are on-line and available to all T&E simulation developers. | | 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 years. Provides 12 COTS based air vehicles for developmental testing and initial targets fleet, ground support equipment, and maintainer and operator training. TTCS will be utilized for target control. This effort provides significant cost avoidances over using real UAVs for T&E targets. | | 0 | 1093 | 150 |
| Small Business Innovative Research/Small Business Technology Transfer Programs. | | 0 | 226 | 0 |
| Totals | | 5270 | 7995 | 7241 |

| | | | | | | | | | | |
|--|----------------|--|--|---|---------------------|---------------------|-----------------------|---------------------|---------------------|---------------------|
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| BUDGET ACTIVITY 6 - Management support | | | | PE NUMBER AND TITLE 0604258A - TARGET SYSTEMS DEVELOPMENT | | | PROJECT 459 | | | |
| COST (In Thousands) | | | | FY 2003 Actual | FY 2004 Estimate | FY 2005 Estimate | FY 2006 Estimate | FY 2007 Estimate | FY 2008 Estimate | FY 2009 Estimate |
| 459 | GROUND TARGETS | | | 4779 | 5449 | 3776 | 3054 | 3249 | 4080 | 4287 |
| <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 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.</p> <p>These systems support the Current to Future transition path of the Transformation Campaign Plan (TCP).</p> | | | | | | | | | | |
| <u>Accomplishments/Planned Program</u> | | | | | | | | FY 2003 | FY 2004 | FY 2005 |
| FY03-05 funds management and oversight of five Primary Operating Centers to include operation, storage, maintenance, and configuration management for the repair of 167 active and 182 inactive Mobile Ground Target vehicles, and acquisition of new material and spare parts. Supports users such as FCS, Comanche, Precision Fire, Apache, and others. | | | | | | | | 2160 | 2152 | 1964 |

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PROJECT

459

Accomplishments/Planned Program (continued)

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 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, SBCT (Stryker), Land/Air Warrior, etc.) These models are available on-line to all T&E simulation developers.

FY 2003

1384

FY 2004

1965

FY 2005

1366

Develops (FY03), 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, FCS, NLOS, LOSAT, and others).

1235

1190

446

Small Business Innovative Research/Small Business Technology Transfer Programs.

0

142

0

Totals

4779

5449

3776