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

February 2002

BUDGET ACTIVITY
6 - Management support

PE NUMBER AND TITLE
0605602A - Army Technical Test Instrumentation and Targets

COST (In Thousands)		FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost		39094	34719	43222	55430	60917	63331	80183	Continuing	Continuing
628	TEST TECH & SUST INSTR	39094	34719	34963	45915	50867	51807	55718	Continuing	Continuing
62B	OPERATIONAL TESTING INSTRUMENTATION DEVELOPMENT	0	0	6713	7626	8363	9444	12812	Continuing	Continuing
62C	MODELING AND SIMULATION INSTRUMENTATION	0	0	1546	1889	1687	2080	11653	Continuing	Continuing

A. Mission Description and Budget Item Justification: This Program Element provides critical front-end investments for development of new test methodologies, test standards, advanced test technology concepts for long range requirements, future test capabilities, and advanced instrumentation prototypes for the United States Army Developmental Test Command (DTC), which includes: Aberdeen Test Center (ATC), Aberdeen Proving Ground, Maryland; White Sands Missile Range (WSMR), New Mexico (including the Electronic Proving Ground (EPG), Fort Huachuca, Arizona); Yuma Proving Ground (YPG), Arizona (including the Cold Regions Test Center (CRTC), Fort Greely, Alaska and the Tropical Regions Test Center, Hawaii); Aviation Technical Test Center (ATTC), Fort Rucker, Alabama; Redstone Technical Test Center (RTTC), Redstone Arsenal, Alabama; and Dugway Proving Ground (DPG), Utah. These capabilities support the development and fielding cycle of the Army Transformation as well as Joint Vision 2020 initiatives. Within this program, a major initiative called Virtual Proving Ground (VPG) is directed towards integrating Modeling, Simulation, and Internetting technologies into the test and evaluation process to support acquisition streamlining and to offset prior manpower and budget reductions. The Virtual Proving Ground will significantly improve the ability of the Army to provide early influence on system design, reduce test costs and time, and extend the envelope of information to reduce risk and acquisition costs. This initiative is critical to achieving long-term efficiencies within the acquisition process by conforming to the Simulation and Modeling for Acquisition, Requirements, and Training (SMART) and Simulation Based Acquisition (SBA) processes. Sustaining instrumentation maintains existing testing capabilities at DTC test facilities by replacing unreliable, uneconomical and irreparable instrumentation, as well as incremental upgrades of instrumentation and software, to assure adequate test data collection capabilities. This data supports acquisition milestone decisions for all commodity areas throughout the Army including programs such as Interim Armored Vehicle (IAV), Future Combat System (FCS), Theater High Altitude Area Defense (THAAD), Comanche, Patriot Advanced Capability Phase 3 (PAC 3), High Mobility Artillery Rocket System (HIMARS), M1A2 Main Battle Tank, Joint Service Lightweight Integrated Suit Technology (JSLIST), Javelin Missile System, Family of Medium Tactical Vehicles, Army Battle Command System (ABCS), Force XXI Battle Command Brigade and Below (FBCB2) and Land Warrior. This Program Element develops and sustains developmental test capabilities that provide key support to the Army's Transformation Campaign Plan (TCP). This Program Element also includes funds transferred from the Army Test and Evaluation Command's (ATEC) Operational Testing Instrumentation line, 0605712A/987, to provide greater visibility of modeling and simulation efforts. Also funds were transferred from 0605712A/987 to support development and sustainment of operational test assets at Airborne Special Operations Test Directorate, Fort Bragg; Air Defense Artillery Test Directorate Fort Bliss; Fire Support Test Directorate, Fort Sill; Intelligence Electronic Warfare Test Directorate, Fort Huachuca; and Test and Evaluation Support Agency, Fort

Hood. The development and sustainment of ATEC's Simulation Operations Rehearsal Model (STORM)is also included. Systems that will benefit from this effort are Army Tactical Command and Control System (ATCCS), Battlefield Functional Area (BFA), Advanced Field Artillery Tactical Data System Service Support Control System (AFATDS), Maneuver Control System (MCS), Forward Area Air Defense Command Control and Intelligence (FAADC2I), All Source Analysis System (ASAS), and Combat Service Support Control System (CSSCS).

B. Program Change Summary	FY 2001	FY 2002	FY 2003
President's Previous Budget (FY 2002 PB)	36915	34259	34651
Appropriated Value	37256	35009	0
Adjustments to Appropriated Value	0	0	0
a. Congressional General Reductions	0	-290	0
b. SBIR / STTR	-1018	0	0
c. Omnibus or Other Above Threshold Reductions	0	0	0
d. Below Threshold Reprogramming	3198	0	0
e. Rescissions	-342	0	0
Adjustments to Budget Years Since (FY 2002 PB)	0	0	8571
Current Budget Submit (FY 2003 PB)	39094	34719	43222

Change Summary Explanation: Funding: FY 2003 - Funds were realigned from PE 0605712A, Support of Operational Testing, in order to align sustaining instrumentation funding into one program element (+8288).

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

February 2002

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
6 - Management support	**0605602A - Army Technical Test Instrumentation and Targets**	**628**

COST (In Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
628 TEST TECH & SUST INSTR	39094	34719	34963	45915	50867	51807	55718	Continuing	Continuing

A. Mission Description and Budget Item Justification: This program provides critical front-end investments for development of new test methodologies, test standards, advanced test technology concepts for long range requirements, future test capabilities, and advanced instrumentation prototypes for the United States Army Developmental Test Command (DTC), which includes: Aberdeen Test Center (ATC), Aberdeen Proving Ground, Maryland; White Sands Missile Range (WSMR), New Mexico (including the Electronic Proving Ground (EPG), Fort Huachuca, Arizona); Yuma Proving Ground (YPG), Arizona (including the Cold Regions Test Center (CRTC), Fort Greely, Alaska and the Tropical Regions Test Center, Hawaii); Aviation Technical Test Center (ATTC), Fort Rucker, Alabama; Redstone Technical Test Center (RTTC), Redstone Arsenal, Alabama; and Dugway Proving Ground (DPG), Utah. These capabilities support the development and fielding cycle of the Army Transformation as well as Joint Vision 2020 initiatives. Within this program, a major initiative called Virtual Proving Ground (VPG) is directed towards integrating modeling, simulation, and internetting technologies into the test and evaluation process to support acquisition streamlining and to offset prior manpower and budget reductions. The Virtual Proving Ground will significantly improve the ability of the Army to provide early influence on system design, reduce test costs and time, and extend the envelope of information to reduce risk and acquisition costs. This initiative is critical to achieving long-term efficiencies within the acquisition process by conforming to the Simulation and Modeling for Acquisition, Requirements, and Training (SMART) and Simulation Based Acquisition (SBA) processes. Sustaining instrumentation maintains existing testing capabilities at DTC test facilities by replacing unreliable, uneconomical and irreparable instrumentation, as well as incremental upgrades of instrumentation and software, to assure adequate test data collection capabilities. This data supports acquisition milestone decisions for all commodity areas throughout the Army including programs such as Interim Armored Vehicle (IAV), Future Combat System (FCS), Theater High Altitude Area Defense (THAAD), Comanche, Patriot Advanced Capability Phase 3 (PAC 3), High Mobility Artillery Rocket System (HIMARS), M1A2 Main Battle Tank, Joint Service Lightweight Integrated Suit Technology (JSLIST), Javelin Missile System, Family of Medium Tactical Vehicles, Army Battle Command System (ABCS), Force XXI Battle Command Brigade and Below (FBCB2) and Land Warrior. This Program Element develops and sustains developmental test capabilities that provide key support to the Army's Transformation Campaign Plan (TCP).

FY 2001 Accomplishments:

FY 2001 Accomplishments: (Continued)

- 12973 Continued Support of Virtual Proving Ground (VPG): Completed development of the physics-based helicopter simulation for Comanche to conduct T&E of the potential flight hazards associated with integration of new components into the aircraft. Completed development of visible and Infrared (IR) scenes to drive the scene projectors and signal injection interfaces in the Electro-Optics Target Acquisition, Electro-Optics Sensor Flight Evaluation and Infrared Simulation Test Acceptance test facilities. Continued acquisition and integration of computer workstations and software to enable conduct of virtual tests. Provided support to the Joint Modeling and Simulation System and determined its applications for test and evaluation. Initiated development and integration of common synthetic environments that include digitized terrain, signature models, disturbance environments, climatic models, and propagation models into system-level simulations. Developed a model to accurately replicate measured shock and vibration characteristics of ammunition stored on-board howitzers and to integrate real quantitative test measurements with simulation models and databases for real-time linking and visualization. Continued development of a DTC-wide High Level Architecture (HLA) compliant architecture for integrating internal and external models, software algorithms, virtual test tools, ground truth databases, and synthetic environments. Continued funding of the cooperative Technology Program Annexes (TPA) with the Army Research Lab to support development and integration of fire control and ground system platforms and other Unit Under Test simulations. Continued development of a standardization process to integrate various software components (synthetic environments, databases, data repositories, models and interfaces) to support virtual testing. Continued development of systems to merge telemetry, optics, radar, GPS, and TSPI data to support pre-test, test conduct, and post-test mission and playback analysis of large missile and air defense system test data. Continued development of a versatile information system and digital library that is integrated on-line to support testing and training requirements. Continued development of a suite of test control simulation tools and test beds which integrate actual field instrumentation data with existing simulations and models to conduct test range management, test setup, simulation model validation and test result validation. Continued development of a validated model to replicate a chemical/biological point detection system.
- 19912 Initiated/Continued Development, Acquisition and Sustainment of Critical Test Instrumentation and Equipment. Completed development of a six degree of freedom motion simulator used to perform non-destructive missile testing. Completed upgrade of a Weibel radar system used to track missiles and projectiles in extreme cold environments. Completed conversion of an optical tracker system to a single station laser tracker. Completed software upgrade of the Drone Formation Control System autopilot, control, navigation and guidance systems. Completed upgrade of the MPS-36 radars that control down range instrumentation (such as Kineto Tracking Mounts and other short-range radars) near the impact point for artillery and smart munitions testing. Completed acquisition of a digital real-time imaging system used to inspect rocket motors. Congressional Plus-up received to fund the Advanced Comprehensive Engineering Simulator (ACES) which upgrades missile debris dispersion and analysis software used for mission planning and missile flight safety analysis. Developed a common tool for stimulation of Command, Control and Communications equipment through simulated message and data traffic and controlling, collecting and storing data during large scale tests. Replaced range control instrumentation and upgraded and replaced radar, optics, telemetry and data processing equipment used in large missile testing. Continued development of an instrumentation platform to remotely collect, analyze, transmit and log Command, Control, Communications and Intelligence (C4I) message traffic.

FY 2001 Accomplishments: (Continued)

Acquired aircraft high-speed digital cameras, airborne video recorders, video cameras, telemetry link, signal conditioning equipment and ground control data processing equipment. Upgraded portable Weibel tracking radars used for ammunition testing in harsh desert environments. Completed acquisition of micro-organism fermentor/containment chamber used for chemical/biological agent detector testing. Acquired chemical/biological agent alarm test instrumentation including chemistry lab equipment, detection library for antibodies, high sampling rate data acquisition equipment and atmospheric turbulence and surface weather measurement equipment. Acquired smoke density detectors for the fire extinguisher testing of ground vehicles, aircraft icing instrumentation, digital communications devices for missile launch complexes. Developed a prototype air-to-air munitions scoring system that supports helicopter turreted gun accuracy testing. Continued development of a high speed/high capacity wireless data communication network for C4I testing, development of a soldier-system test instrumentation suite, precision target scoring system, gun chamber/gun pointing measurement system, aircraft icing spray system and airdrop test instrumentation. Continued integration of instrumentation across test sites for centralized monitoring and control of tests, development of autonomous vehicle control and test range traffic monitoring systems, acquisition of computer workstations for data processing and analysis, development of enhanced Developmental Test/Operational Test (DT/OT) on-board vehicle instrumentation and development of a remote arming and detonating capability to support live fire vulnerability testing. Continued acquisition of electromagnetic radiation effects power amplifiers, fiber optic network links digital data and video recorders, mobile mission control instrumentation, range radios and advanced data transport and range communications capabilities.

- 1336 Prototype Instrumentation and Advanced Concepts. Provided quick reaction capability to respond to emergency requirements. Provided support for technical committees forging future instrumentation technology developments. Conducted methodology studies to improve test processes and determine future test capability requirements. Continued to develop Test Operating Procedures (TOPs) and International Test Operation Procedures (ITOPs) to ensure quality and consistency of test results throughout Army and for international cooperative applications.
- 4873 Provided management support for VPG across the command. Conducted strategic planning and developed roadmaps to guide current and future programs. Provided command-level oversight and management support for the DTC instrumentation program. Technical support included requirements development, project prioritization, and execution of investment accounts for Small Business Innovative Research, Production Base Support, Army Test Technology and Sustaining Instrumentation, Major Test and Evaluation Investment, and the Central Test and Evaluation Investment Program. Provided management and support for direct interface with the T&E Executive Agent, management of needs and solutions calls for T&E Reliance oversight, and support to the Army principal of the Test Resource Advisory Group (TRAG). Provided administrative support for the HQ DTC Local Area Network, contracts, patents, symposia and conferences, exhibits and printing. Provided final year of funding support to the Joint Program Office (JPO) for Test and Evaluation as the tri-service Executive Agent for Test and Evaluation.

Total 39094

FY 2002 Planned Program

- 11427 Continue Support of Virtual Proving Ground (VPG): Continue development of a suite of test control simulation tools and test beds which integrate actual field instrumentation data with existing simulations and models to conduct test range management, test setup, simulation model validation and test result validation. Develop DTC-wide requirements for visualization tools to collect and portray real-time simulations as well as support after action reviews. Acquire existing FlightLab simulation to expand the physics-based helicopter simulation for the UH-60 Black Hawk, AH-64 Apache, and CH-47 Chinook. Initiate development of a validated model to replicate remote detection modeling and simulation systems. Continue development of a DTC-wide HLA compliant architecture for integrating internal and external models, software algorithms, virtual test tools, ground truth databases, and synthetic environments. Continue developing and integrating common synthetic environments that include digitized terrain, signature and propagation models, and disturbance and climatic environments into system-level models and simulations. Complete support to the Joint Modeling and Simulation System and determine its applications for test and evaluation. Continue funding of the cooperative TPAs with the Army Research Lab to

  support development and integration of fire control and ground system platforms and other Units Under Test simulations. Continue development of a standardization process to integrate various software components (synthetic environments, databases, data repositories, models, and interfaces) to support virtual testing. Continue development of a system to merge telemetry, optics, radar, GPS, and TSPI data to support mission analysis and playback of large missile and air defense system test data. Continue development of a validated model to replicate a chemical/biological point detection system. Initiate characterization of simulant/agent properties. Continue DTC-wide integration of terrain features, characteristics and functionality into system level models and simulations. Continue DTC-wide development and integration of ground truth databases, information systems, and synthetic environments into system level models and simulation. Initiate data mining capability for supporting a knowledge-based management tool. Initiate modeling of pressure transducers, accelerometer, and sensors to create ballistic model for direct and indirect firing test support.

- 16936 Initiate/Continue Development, Acquisition and Sustainment of Critical Test Instrumentation and Equipment. Complete acquisition of digital cameras, computer workstations and data processing systems used in ground vehicle testing and digital video systems, high-speed digital cameras, and telemetry link used in aircraft testing. Complete acquisition of wind turbulence measurement equipment used in chemical/biological agent alarm testing. Complete acquisition of fiber optic links and digital end devices supporting small missile testing. Complete development of an instrumentation platform to remotely collect, analyze, transmit and log C4I message traffic, development of a high speed/high capacity wireless data communication network, digital trunking and microwave system for C4I testing. Complete development of a prototype air-to-air munitions scoring system that supports helicopter turreted gun accuracy testing. Initiate development/acquisition of: an optical data measurement system to analyze missile flight position data; digital optical instrumentation for Kineto Tracking Mounts (KTM) and mobile video instrumentation and control equipment used for tracking and capturing event data on large missiles; instrumentation for nuclear effects, directed energy tests, electromagnetic environment effects and vibration environments for missile testing and digital ground-to-air radios, mobile communications equipment and digital end devices for

FY 2002 Planned Program (Continued)

communications and data transport. Initiate development of a helicopter fire control scoring capability for air-to-ground testing, acquisition of portable infrared and video tracking equipment for munitions testing, and replacement computer control and video tracking equipment for KTMs supporting munitions testing. Upgrade an environmental conditioning chamber used to condition small missiles prior to launch. Continue to replace range control instrumentation and upgrade and replace radar, optics, telemetry and data processing equipment used in large missile testing. Acquire aircraft signal conditioning equipment and ground control data processing equipment. Upgrade portable Weibel tracking radars used for ammunition testing in harsh desert environments. Acquire chemical/biological agent alarm test instrumentation including chemistry lab equipment, detection library for antibodies, computer workstations and high sampling rate data acquisition equipment. Acquire instrumentation and equipment for fire extinguisher testing. Continue development of a soldier-system test instrumentation suite, precision target scoring system, gun chamber/gun pointing measurement system, aircraft icing spray system and airdrop test instrumentation. Continue integration of instrumentation across test sites for centralized monitoring and test control, development of autonomous vehicle control and test range traffic monitoring systems, development of enhanced DT/OT on-board vehicle instrumentation and development of a remote arming and detonating capability to support live fire vulnerability testing. Continue acquisition of electromagnetic radiation effects power amplifiers and antennas, digital data and video recorders for small missile launch and in-flight data collection, mobile mission control instrumentation for ammunition testing, range radios and advanced data transport and range communications capabilities.

- 1220 Prototype Instrumentation and Advanced Concepts. Provide quick reaction capability to respond to emergency requirements. Provide support for technical committees forging future instrumentation technology developments. Continue to develop TOPs and ITOPs to ensure quality and consistency of test results throughout Army and for international cooperative applications.
- 5136 Provide management support for VPG across the command. Conduct strategic planning and develop roadmaps to guide current and future programs. Provide command-level oversight and management support for the DTC instrumentation program. Technical support includes requirements development, project prioritization, and execution of investment accounts for Small Business Innovative Research, Production Base Support, Army Test Technology and Sustaining Instrumentation, Major Test and Evaluation Investment, and the Central Test and Evaluation Investment Program. Provide management and support costs for direct interface with the T&E Executive Agent, management of needs and solutions calls for T&E Reliance oversight, and support to the Army principal of the TRAG. Provide support for the HQ DTC Local Area Network, contracts, patents, symposia and conferences, exhibits and printing.

Total 34719

FY 2003 Planned Program

- 11767 Continue Support of Virtual Proving Ground (VPG): Continue development of a suite of test control simulation tools and test beds which integrate actual field instrumentation data with existing simulations and models to conduct test range management, test setup, simulation model validation and test result validation. Continue development of a DTC-wide HLA compliant architecture for integrating internal and external models, software algorithms, virtual test tools, databases, and synthetic environments. Continue funding of the cooperative TPAs with the Army Research Lab to support development and integration of fire control and ground system platforms and other Units Under Test simulations. Continue development of a standardization process to integrate software components (synthetic environments, databases, data repositories, models, and interfaces) for virtual testing. Continue developing and integrating common synthetic environments that include digitized terrain, signature and propagation models, disturbance and climatic environments, virtual battlespace generation, and human effects into system-level models and simulations. Initiate distributing of the synthetic environments via HLA Environment Federation. Continue development of a system to merge telemetry, optics, radar, GPS, and TSPI data to support mission playback, analysis, and reporting tool of large missile and air defense system test data. Continue development of a validated model to replicate a chemical/biological point detection system and characterization of simulant/agent properties. Continue DTC-wide development and integration of ground truth databases, information system, and synthetic environments into system level models and simulation. Continue development of a simulation model to

  accurately measure shock and vibration characteristics of ammunition stored on-board howitzers. Continue to acquire visualization tools to collect and portray real-time simulations as well as support after action reviews. Continue development and initiate a mobile version of the visible and IR scenes to drive the scene projectors and signal injection interfaces in the Electro-Optics Target Acquisition, Electro-Optics Sensor Flight Evaluation and Infrared Simulation Test Acceptance test facilities. Develop an integrated suite of C4I test tools to support distributed developmental and operational tests, experiments, and training exercises, to include range operations and control capability. Continue development of data mining capability for supporting a knowledge-based management tool. Develop models of pressure transducers, accelerometer, and sensors to create ballistic and target modeling for direct and indirect firing test support.

FY 2003 Planned Program (Continued)

- 16954 Initiate/Continue Development, Acquisition and Sustainment of Critical Test Instrumentation and Equipment. Initiate acquisition of instrumentation for reliability, availability and maintainability data collection on ground vehicle systems, replacement ballistic transducers for measuring chamber pressures during ammunition tests, modification of a rail delivery system supporting live fire tests and acquisition of high bandwidth signal conditioners for on-vehicle data collection. Initiate upgrade of power amplifiers on vibration shaker tables. Initiate integration of lab equipment used for testing infrared guidance systems. Initiate acquisition of large capacity data storage devices for small missile system testing. For large missile system tests, initiate acquisition of chemistry lab equipment for analyzing hazardous wastes, radar transponders for high accuracy missile tracking and upgrade to Global Positioning System equipment for position location. For C4I testing, initiate development of distributed communications test capabilities and upgrade of test tools for message/data traffic simulation/stimulation. Support development of common instrumentation for developmental and operational testing within all test commodity areas. Continue to replace range control instrumentation and upgrade and replace radar, optics, telemetry and data processing equipment used in large missile testing. Acquire aircraft data recorders, signal conditioning equipment and ground control data processing equipment. Upgrade portable Weibel tracking radars used for ammunition testing in harsh desert environments. Acquire chemical/biological

  agent alarm test instrumentation including chemistry lab equipment, detection library for antibodies, computer workstations and high sampling rate data acquisition equipment. Continue development of a soldier-system test instrumentation suite, precision target scoring system, gun chamber/gun pointing measurement system, aircraft icing spray system and airdrop test instrumentation. Continue integration of instrumentation across test sites for centralized monitoring and control. Continue development of autonomous vehicle control and test range traffic monitoring systems, development of enhanced DT/OT on-board vehicle instrumentation and development of a remote arming and detonating capability to support live fire vulnerability testing. Continue acquisition of electromagnetic radiation effects power amplifiers and antennas, digital data and video recorders for small missile launch and in-flight data collection, mobile mission control instrumentation for ammunition testing, range radios, advanced data transport, and range communications capabilities. Continue development/acquisition of: an optical data measurement system to analyze missile flight position data; digital optical instrumentation for Kineto Tracking Mounts (KTM) and mobile video instrumentation and control equipment used for tracking and capturing event data on large missiles; instrumentation for nuclear effects, directed energy tests, electromagnetic environment effects for missile testing and digital end devices for communications and data transport. Continue development of a helicopter fire control scoring for air-to-ground testing, and replacement computer control and video tracking for KTMs supporting munitions testing.
- 912 Prototype Instrumentation and Advanced Concepts. Provide quick reaction capability to respond to emergency requirements. Provide support for technical committees forging future instrumentation technology developments. Continue to develop TOPs and ITOPS to ensure quality and consistency of test results throughout Army and for international cooperative applications.

FY 2003 Planned Program (Continued)

- 5330 Provide management support for VPG across the command. Conduct strategic planning, and develop roadmaps to guide current and future programs. Provide command-level oversight and management support for the DTC instrumentation program. Technical support included requirements development, project prioritization, and execution of investments accounts for Small Business Innovation Research, Production Base Support, Army Test Technology and Sustaining Instrumentation, Major Test and Evaluation Investment, and the Central Test and Evaluation Investment Program. Provide management and support costs for direct interface with the T&E Executive Agent, management of needs and solutions calls for T&E Reliance oversight, and support of the Army principal of the TRAG. Provide administrative support for HQ DTC Local Area Network, contracts, patents, symposia and conferences, exhibits and printing.

Total 34963

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

February 2002

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
6 - Management support	**0605602A - Army Technical Test Instrumentation and Targets**	**62B**

COST (In Thousands)		FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
62B	OPERATIONAL TESTING INSTRUMENTATION DEVELOPMENT	0	0	6713	7626	8363	9444	12812	Continuing	Continuing

A. Mission Description and Budget Item Justification: Provides for technical upgrades and maintenance of essential operational test instrumentation. Funding supports development and sustainment of cost effective technologies: data collection, data processing, telemetry, miniaturization, synthetic jammers, embedded instrumentation, mobile instrumentation, information assurance, and electronic warfare. As digitization of the battlefield continues, this effort allows ATEC to modernize and develop its non-major instrumentation so that it can be integrated with automated instrumentation and combat simulation capability within the operational tests. This project supports development and sustainment of operational test assets at the Airborne Special Operations Test Directorate, Fort Bragg; the Air Defense Artillery Test Directorate, Fort Bliss; the Fire Support Test Directorate, Fort Sill; the Intelligence Electronic Warfare Test Directorate, Fort Huachuca; and the Test and Evaluation Support Agency, Fort Hood. Funding originally programmed within the Operational Testing Instrumentation (0605712A/987) line, these funds were realigned to this new project in order to provide visibility of the development of operational testing instrumentation.

FY 2001 Accomplishments:

Program funded in 0605712A/987.

FY 2002 Planned Program

Program funded in 0605712A/987.

FY 2003 Planned Program

- 6713 Planned projects include Improved Field Data Collector Enhancements, Multi- Media Data Transfer System Enhancements, Common Vehicular Instrumentation Initiative, High Speed Telemetry System, Global Positioning System (GPS) Modernization, Video Tracking System Upgrade, Automated Intelligence/ Electronic Warfare Test System (AI/EWTS Multiple Emitter Capability), Video Telemetry Recording System and Electro-Optic Facility Instrumentation.

Total 6713

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

February 2002

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
6 - Management support	**0605602A - Army Technical Test Instrumentation and Targets**	**62C**

COST (In Thousands)		FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
62C	MODELING AND SIMULATION INSTRUMENTATION	0	0	1546	1889	1687	2080	11653	Continuing	Continuing

A. Mission Description and Budget Item Justification: This project provides a critical foundation necessary to develop and sustain ATEC's current and future modeling and simulation (M&S) instrumentation efforts. ATEC's M&S efforts include: Simulation Testing Operations Rehearsal Model (STORM), Fire Support Automated Test Suite (FSATS), Extensible C4I Instrumentation Suite-Fire Support Application (ExCIS), Command, Control and Communication Driver (C3Driver), Intelligence Modeling and Simulation for Evaluation (IMASE) C3I Engineering Evaluation System (CEES), and OTC Analytic Simulation-Instrumentation Suite (OASIS). Systems that will benefit from this effort include, but are not limited to Interim Armored Vehicle (IAV), Army Tactical Command and Control System (ATCCS), Battlefield Functional Area (BFA), Advanced Field Artillery Tactical Data System (AFATDS), Maneuver Control System (MCS), Forward Area Air Defense Command Control and Intelligence (FAADC2I), All Source Analysis System (ASAS), and Combat Service Support Control System (CSSCS). Funding originally programmed within the Operational Testing Instrumentation (0605712A/987) line, these funds were realigned to this new project in order to provide greater visibility to modeling and simulation efforts.

FY 2001 Accomplishments:

Program funded in 0605712A/987.

FY 2002 Planned Program

Program funded in 0605712A/987.

FY 2003 Planned Program

- 1546 Funds development and sustainment of high priority modeling and simulation instrumentation systems, such as the Simulation Testing Operations Rehearsal Model (STORM).

Total 1546