

UNCLASSIFIED

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)	DATE February 2000
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BUDGET ACTIVITY 6 - Management and Support	PE NUMBER AND TITLE 0605602A Army Test Technology and Sustaining Instrumentation	PROJECT D628
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COST <i>(In Thousands)</i>	FY1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY2004 Estimate	FY2005 Estimate	Cost to Complete	Total Cost
D628 Test Technology & Sustaining Instrumentation	41726	31439	33156	34678	35175	46244	51283	Continuing	Continuing

A. Mission Description and Justification: Effective 1 October 1999, the US Army Operational Test and Evaluation Command (OPTEC) was redesignated as the US Army Test and Evaluation Command (ATEC). The three subordinate commands assigned to ATEC are: the Army Evaluation Center (AEC), the Operational Test Command (OTC), formerly the Test and Experimentation Command (TEXCOM), and the Developmental Test Command (DTC), formerly the US Army Materiel Command's Test and Evaluation Command (TECOM). All functions and resources in this PE are managed by the Developmental Test Command.

Test technology 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 DTC, which includes: Aberdeen Test Center (ATC), Aberdeen Proving Ground, MD; White Sands Missile Range (WSMR), NM (including the Electronic Proving Ground (EPG), Fort Huachuca, AZ); Yuma Proving Ground (YPG), AZ (including the Cold Regions Test Center (CRTC), Forts Greely and Wainwright, AK and the Tropic Test Site at Schofield Barracks, HI); Aviation Technical Test Center (ATTC), Fort Rucker, AL; Redstone Technical Test Center (RTTC), Redstone Arsenal, AL; and Dugway Proving Ground (DPG), UT. These capabilities support the streamlined development and fielding cycle of the Medium Brigade as well as Army Vision 2010 and Joint Vision 2010 initiatives. Within this element, 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 significant downsizing and budget reductions. VPG 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 not only within the Test and Evaluation (T&E) mission to offset funding and manpower reductions already taken, but also within the acquisition process at large 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 projects such as Patriot Advanced Capability Phase 3 (PAC 3), M1A2 Main Battle Tank, Joint Service Lightweight Integrated Suit Technology (JSLIST), Theater High Altitude Area Defense (THAAD), Comanche, Brigade Combat Team and Javelin.

FY 1999 Accomplishments:

- 15686 CONTINUED SUPPORT OF DTC VIRTUAL PROVING GROUND (VPG):
 ATC: Initiated development and integration of High Level Architecture-compliant models and simulations with ground truth data. Continued development of performance databases, direct fire control models to calculate gun-pointing error for the M1 series of tracked vehicles and system

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<p>interfaces to support virtual testing of fire control and ground vehicle systems. Continued funding of the cooperative Technology Program Annexes (TPA) with the Army Research Lab to support development and integration of fire control and ground vehicle simulations. Continued development of</p> <p>FY 1999 Accomplishments: (continued)</p> <p>an engineering model to support tri-service development and evaluation of common simulation systems. Initiated development of a bridge-crossing simulator to perform bridge performance and endurance testing by simulating heavy vehicle crossings.</p> <p>ATTC: Initiated development and integration of high fidelity aviation models and simulations required to conduct virtual testing. Completed development of a virtual test range to integrate various system models (such as the Comanche aircraft model), virtual terrain, and threat models to conduct virtual flight visualization testing. Continued development of a physics-based helicopter simulation, in cooperation with the Comanche program, to conduct test and evaluation of the potential flight hazards associated with integration of new components into the aircraft.</p> <p>DPG: Initiated procurement of computer workstation and software to conduct virtual testing. Developed a smoke/obscurant model in the visible spectrum to predict dispersion characteristics under various live test conditions. Conducted integration of the 4D Weather System at YPG to perform micro/meso-scale weather analyses and forecasts which provide increased range efficiencies and enhanced range safety. Completed development of a software model to conduct virtual chemical, biological, and aerosol testing.</p> <p>RTTC: Continued to acquire high resolution, three dimensional, validated terrain, target, cultural features, human and smoke/obscurant models in the visible, mid-wave infrared and long-wave infrared spectrums to develop a virtual component/subsystem test capability for small missile systems with open-loop and closed-loop non-destructive testing of imaging Infrared/Millimeter Wave (IR/MMW) Seekers and small missile systems. Completed development of small missile ground truth databases. Developed a 3-D smoke and obscurant model in the IR spectrum to generate and inject scenes for the Electro-Optics Sensor Flight Evaluation Lab (EOSFEL). Completed support to Project Constellation, a distributed virtual test capability across multiple DTC test centers, which included development of standard architectures, networks, and validation/accreditation procedures. Developed an electromagnetic model to measure the susceptibility parameters of various anti-tank and non-line-of-sight missiles. Continued acquisition of computer hardware and software to conduct virtual testing.</p> <p>WSMR: Continued acquisition of computer hardware and software required to conduct virtual large missile and C4I testing. Completed development of Command, Control, Communications, Computers and Intelligence (C4I) and Electronic Warfare (EW) simulation testing capabilities that replace expensive airborne jammers with simulators that inject actual threat waveforms into the test items which will significantly reduce test costs, test time, and provides test repeatability. Continued development of virtual reality mission planning for large missile systems. Completed development of a fiber optic link between the test range and software simulation laboratory. Completed development of an Airblast Survivability Model for Comanche. Completed support for Project Constellation that included development of standard architectures, networks, and validation/accreditation procedures. Acquired software to reconfigure the High Performance Computing (HPC) mainframe computer to servers that will provide real-time control of test resources. Completed development of terrain and ground truth databases. Completed development of software tools to simulate C4I systems and battlefield electromagnetic characteristics.</p>		
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<p>YPG: Developed a comprehensive virtual desert terrain database that incorporates digital mapping data, soil characteristics, and terrain characteristics. Completed development of aviation fire control and line of sight models to characterize turreted weapon systems in an Air-to-Air firing environment. Developed an enhanced virtual range to support and incorporate multi-weapon test scenarios. Initiated acquisition of computer hardware and software to conduct virtual testing. Developed software models to conduct virtual shock and vibration testing of howitzers.</p> <p>FY 1999 Accomplishments: (continued)</p> <ul style="list-style-type: none"> • 21133 CONTINUED DEVELOPMENT, ACQUISITION AND SUSTAINMENT OF CRITICAL TEST INSTRUMENTATION AND EQUIPMENT. <ul style="list-style-type: none"> ATC: Continued development of test site integration which consists of electronically linking test site instrumentation such as Weibel radars, ballistic test site terminals, digital flash x-rays cameras, Hadland high-speed photography cameras, and various types of environmental instrumentation to monitor toxic fumes and gases with an ATC test control facility to conduct test control, monitoring and real-time data analysis and review. Continued development of autonomous vehicle control and test range traffic monitoring systems. Continued acquisition of computer workstations to conduct data processing and analysis. Continued development of a combined Developmental Test (DT)/Operational Test (OT) vehicle instrumentation package. Continued development of vehicle endurance/performance test data analyzers. ATTC: Acquired inertial measurement units to measure aircraft altitude, angular rates and acceleration rates. Acquired airborne recorder interface units to simultaneously record and reproduce multiple aircraft data channels. DPG: Acquired gas chromatograph workstations, mini Chemical Agent Monitors and software to conduct real-time monitoring and detection of chemical agents. RTTC: Completed development of an acoustic flight vibration capability to reduce the number of costly missile test flights. Completed upgrade of the laser tracker hardware and software to provide accurate and reliable Time Space Position Information (TSPI) data. Continued acquisition of power amplifiers that are required to generate Electromagnetic Radiation environments used in physical environments testing. Installed high speed, high bandwidth fiber optic network to link the RTTC test ranges/facilities with the Army Aviation and Missile Command (AMCOM) Research Development Engineering Center (RDEC). WSMR: Continued to upgrade a single station laser tracker. Continued development of an instrumentation platform to remotely collect, analyze, transmit and log C4I message traffic. Continued software upgrade of the Drone Formation Control System autopilot, control, navigation and guidance systems. Congressional funding was provided to initiate acquisition of telemetry, range timing, operations control, data display, communications and video relay equipment and instrumentation to provide a smooth transition of range control from the old Range Control Center to the new Cox Range Control Center. Upgraded a suite of optical tracking instrumentation with high-resolution video cameras. Upgraded the Command Destruct System for remote control capability IAW personnel downsizing and safety assurance initiatives. Procured two spare cables, a spare target trolley, and instrumentation to replace damaged equipment at the Aerial Cable Range. Upgraded core radar and telemetry instrumentation to improve missile tracking accuracy and reliability. Congressional funding was provided to continue development of an existing Small Business Innovative Research project which predicts missile debris dispersion and analyzes the impact to commercial aircraft traversing the range. YPG: Continued acquisition of mobile, portable, and base station trunked land radio units. Developed a scoring sensor suite for turreted gun systems on rotary wing aircraft (munitions from .50 caliber to 30mm). Completed development of a gun pointing vector instrumentation package. • 795 PROTOTYPE INSTRUMENTATION AND ADVANCED CONCEPTS. Provided quick reaction capability to respond to emergency requirements, provided support for technical committees forging future instrumentation technology developments, and maintained/improved existing capability by 		
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<p>replacement and limited upgrade of worn out, obsolete or unserviceable equipment/instrumentation at Army technical test ranges. Developed prototype instrumentation and performed advanced concept studies for development of new technologies. Continued to develop Test Operations</p> <p>FY 1999 Accomplishments: (continued)</p> <p>Procedures (TOPs) and International Test Operations Procedures (ITOPs) to ensure quality and consistency of test results throughout Army and for international cooperative applications.</p> <ul style="list-style-type: none"> • 4112 HQDTC: Provided management support for Virtual Proving Ground (VPG) across the command to ensure commonality, conduct strategic planning, and develop roadmaps. Provided command-level oversight and technical 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. Continued to 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 TERIB co-chair and the Army principal on the T&E Board of Operating Directors. Provided administrative support for the Local Area Network and TECNET, contracts, patents, symposia and conferences, exhibits and printing. Continued funding support to the Joint Program Office (JPO) for Test and Evaluation under the tri-service Executive Agent for Test and Evaluation. <p>Total 41726</p> <p>FY 2000 Planned Program:</p> <ul style="list-style-type: none"> • 11330 CONTINUE SUPPORT OF VIRTUAL PROVING GROUND (VPG): <ul style="list-style-type: none"> ATC: Continue development and integration of High Level Architecture-compliant models and simulations with ground truth data. Continue development of performance databases, direct fire control models to calculate gun-pointing error for the M1 series of tracked vehicles and system interfaces to support virtual testing of fire control and ground vehicle systems. Continue funding of the cooperative Technology Program Annexes (TPA) with the Army Research Lab to support development and integration of fire control and ground vehicle simulations. Continue development of an engineering model to support tri-service development and evaluation of common simulation systems. Complete development of a bridge-crossing simulator to perform bridge performance and endurance testing by simulating heavy vehicle crossings. ATTC: Continue development and integration of high-fidelity aviation models and simulations required to conduct virtual testing. Continue development of a physics-based helicopter simulation to conduct test and evaluation of the potential flight hazards associated with integration of new components into the aircraft. Initiate development of a database management system to store, access, aggregate, and manipulate aircraft performance data. DPG: Continue procurement of computer workstations and software to conduct virtual testing. Conduct integration of the 4D Weather System at ATC to perform micro/meso-scale weather analyses and forecasts which provide increased range efficiencies, enhanced range safety, and significantly upgraded project support, i.e., test windows (acceptable weather conditions) and reduced setup/teardown times for instrumentation. Initiate development of validated model to replicate a chemical/biological point detection system. 		
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<p>FY 2000 Planned Program: (continued)</p> <p>RTTC: Continue to acquire high resolution, three dimensional, validated terrain, target, cultural features, human and smoke/obscurant models in the visible, mid-wave infrared and long-wave infrared spectrums to develop a virtual component/subsystem test capability for small missile systems with open-loop and closed-loop non-destructive testing of imaging Infrared/Millimeter Wave (IR/MMW) Seekers and small missile systems. Continue acquisition of computer hardware and software to conduct virtual testing. Initiate development of a standardization process to integrate various software components (synthetic environments, databases, data repositories, models, and interfaces) to support virtual testing. Develop 2-D 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 IR Simulation Test Acceptance test facilities.</p> <p>WSMR: Continue acquisition of computer hardware and software required to conduct virtual large missile and C4I testing. Continue development of virtual reality mission planning for large missile systems. Develop a system to merge telemetry, optics, radar, Global Positioning Systems (GPS), and TSPI data to support mission analysis of large missile and air defense system test data. Initiate development of an architecture to rehost existing C4I legacy test tools to support Army testing and training requirements. Initiate development of a highly mobile, miniaturized, high speed/high capacity data communications network to support various tactical environments and different tactical vehicles without test personnel intervention.</p> <p>YPG: Continue acquisition of computer hardware and software to conduct virtual testing. Initiate development of a test control simulation tool which integrates actual field instrumentation data with existing simulations and models to conduct test range management, test setup, simulation model validation and test result validation.</p> <ul style="list-style-type: none"> • 13650 INITIATE/CONTINUE DEVELOPMENT, ACQUISITION AND SUSTAINMENT OF CRITICAL TEST INSTRUMENTATION AND EQUIPMENT. <p>ATC: Continue development of test site integration which consists of electronically linking test site instrumentation such as Weibel radars, ballistic test site terminals, digital flash x-ray cameras, Hadland high-speed photography cameras, and various types of environmental instrumentation to monitor toxic fumes and gases with an ATC test control facility to conduct test control, monitoring and real-time data analysis and review. Continue development of autonomous vehicle control and test range traffic monitoring systems. Continue acquisition of computer workstations to conduct data processing and analysis. Continue development of an enhanced DT/OT on-board vehicle instrumentation package. Continue development of vehicle endurance/performance test data analyzers. Initiate development of an acoustic soldier-system instrumentation suite to measure and record field test data. Initiate development of a laser target scoring system to measure supersonic/subsonic projectiles. Initiate development of a measurement system to measure shock levels generated by munitions on combat vehicles. Upgrade the real-time x-ray system to maximize detection of defects in materials, ammunition, and ammunition components.</p>		
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<p>ATTC: Complete acquisition of airborne recorder interface units to simultaneously record and reproduce multiple aircraft data channels. Initiate upgrade of the helicopter icing spray system by replacing the bleed air and water delivery systems to ensure that the spray level characteristics are identical to natural clouds. Initiate acquisition of pre-flight instrumentation checkout equipment.</p> <p>FY 2000 Planned Program: (continued)</p> <p>DPG: Initiate acquisition of aerodynamic particle sizers that are used to measure aerosol clouds that are produced during all field tests of biological agent detectors. Initiate acquisition of portable thermometers to conduct atmospheric boundary layer tests for dispersion field-testing. Acquire a test data storage array to support chemical, biological, smoke and obscurant testing.</p> <p>RTTC: Continued acquisition of power amplifiers that are required to generate Electromagnetic Radiation environments used in physical environments testing. Initiate procurement of automated matrix switching devices and programmable conditioning equipment to allow insertion of flight test data into hardware-in-the-loop and six degree-of-freedom simulators. Acquire signal conditioning units and transducers to upgrade data acquisition instrumentation. Initiate acquisition of digital data recorders and receivers to receive, record, and display missile flight performance data. Acquire inertia measurement system to measure missile system physical characteristics. Initiate development of a six degree of freedom motion simulator to perform non-destructive testing of small missiles. Continue acquisition of a high speed, high bandwidth fiber optic network to link the RTTC test ranges/facilities with the AMCOM RDEC.</p> <p>WSMR: Continue conversion of an optical tracker system to single station laser tracker. Continue development of an instrumentation platform to remotely collect, analyze, transmit and log C4I message traffic. Continue software upgrade of the Drone Formation Control System autopilot, control, navigation and guidance systems. Continue acquisition of telemetry, range timing, operations control, data display, and video relay equipment and instrumentation to provide a smooth transition of range control from the Range Control Center to the new Cox Range Control Center. Initiate development of a high speed/high capacity wireless data communication network to support data collection, analysis and reduction of C4I test data. Complete upgrade of a suite of optical tracking instrumentation with high-resolution video cameras. Continue development of an existing Small Business Innovative Research project which predicts missile debris dispersion and analyzes the impact to commercial aircraft traversing the range.</p> <p>YPG: Continue acquisition of mobile, portable, and base station trunked land radio units. Upgrade the MPS-36 radar to provide precision tracking data and to control other down range instrumentation (such as Kineto Tracking Mounts and other short-range radars) near the impact point for artillery and smart munitions testing. Initiate acquisition of data recorders, sensors and telemetry equipment to collect aerodynamic and flight dynamic data for airdrop systems. Acquire transmitters, antennas and repeaters to link remote test sites Cold Regions Test Center (CRTC). Initiate acquisition of data loggers, radios, modems and sensor test equipment at CRTC. Replace old, obsolete computer systems to support high data rate, real-time data collection.</p>		
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<ul style="list-style-type: none"> 700 PROTOTYPE INSTRUMENTATION AND ADVANCED CONCEPTS. Provide quick reaction capability to respond to emergency requirements, provide support for technical committees forging future instrumentation technology developments, and maintain/improve existing capability by replacement and limited upgrade of worn out, obsolete or unserviceable equipment/instrumentation at Army technical test ranges. Continue to develop Test Operations Procedures (TOPs) and International Test Operations Procedures (ITOPs) to ensure quality and consistency of test results throughout Army and for international cooperative applications. <p>FY 2000 Planned Program: (continued)</p> <ul style="list-style-type: none"> 4990 HQ DTC: Provide management support for VPG across the command to ensure commonality, conduct strategic planning, and develop roadmaps. 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 TERIB co-chair and the Army principal on the T&E Board of Operating Directors. Provide administrative support for Local Area Network and TECNET, contracts, patents, Symposia and Conferences, exhibits and printing. Continue funding support to the Joint Program Office (JPO) for Test and Evaluation under the tri-service Executive Agent for Test and Evaluation. 769 Small Business Innovative Research/Small Business Technology Transfer Program. <p>Total 31439</p> <p>FY 2001 Planned Program:</p> <ul style="list-style-type: none"> 11100 CONTINUE SUPPORT OF VIRTUAL PROVING GROUND (VPG): <ul style="list-style-type: none"> ATC: Continue development and integration of High Level Architecture-compliant models and simulations with ground truth data. Continue development of performance databases, direct fire control models to calculate gun pointing error for the M1 series of tracked vehicles and system interfaces to support virtual testing of fire control and ground vehicle systems. Continue funding of the cooperative Technology Program Annexes (TPA) with the Army Research Lab to support development and integration of fire control and ground vehicle simulations. Continue development of an engineering model to support tri-service development and evaluation of common simulation systems. ATTC: Continue development and integration of high-fidelity Aviation models and simulations required to conduct virtual testing. Continue development of a physics-based helicopter simulation to conduct test and evaluation of the potential flight hazards associated with integration of new components into the aircraft. Continue development of a database management system to store, access, aggregate, and manipulate aircraft performance data. DPG: Continue acquisition and integration of computer workstations and software to conduct virtual testing. Conduct integration of the 4D Weather System at RTTC to perform micro/meso-scale weather analyses and forecasts which provide increased range efficiencies, enhanced range safety, and significantly upgraded project support, i.e., test windows (acceptable weather conditions) and reduced setup/teardown times for instrumentation. Continue development of validated model to replicate a chemical/biological point detection system. RTTC: Continue to acquire high resolution, three dimensional, validated terrain, target, cultural features, human and smoke/obscurant models in 		
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<p>the visible, mid-wave infrared and long-wave infrared spectrums to develop a virtual component/subsystem test capability for small missile systems with open-loop and closed-loop non-destructive testing of imaging Infrared/Millimeter Wave (IR/MMW) Seekers and small missile systems. Continue acquisition of computer hardware and software to conduct virtual testing. Initiate development of a standardization process to integrate various software components (synthetic environments, databases, data repositories, models, and interfaces) to support virtual testing. Complete development</p> <p>FY 2001 Planned Program: (continued)</p> <p>of 2-D 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 IR Simulation Test Acceptance test facilities.</p> <p>WSMR: Continue acquisition of computer hardware and software required to conduct virtual large missile and C4I testing. Continued development of virtual reality mission planning for large missile systems. Develop a system to merge telemetry, optics, radar, GPS, and TSPI data to support mission analysis of large missile and air defense system test data. Initiate development of an architecture to rehost existing C4I legacy test tools to support Army testing and training requirements. Initiate development of a highly mobile, miniaturized, high speed/high capacity data communications network to support various tactical environments and different tactical vehicles without test personnel intervention.</p> <p>YPG: Continue acquisition of computer hardware and software to conduct virtual testing. Continue development of a test control simulation tool which integrates actual field instrumentation data with existing simulations and models to conduct test range management, test setup, simulation model validation and test result validation. Initiate development of a simulation model to accurately measure shock and vibration characteristics of ammunition stored on-board howitzers.</p> <ul style="list-style-type: none"> 15670 INITIATE/CONTINUE DEVELOPMENT, ACQUISITION AND SUSTAINMENT OF CRITICAL TEST INSTRUMENTATION AND EQUIPMENT. <p>ATC: Continued development of test site integration which electronically links test site instrumentation such as Weibel radars, ballistic test site terminals, digital flash x-rays cameras, Hadland high-speed photography cameras, and various types of environmental instrumentation to monitor toxic fumes and gases with an ATC test control facility to conduct test control, monitoring and real-time data analysis and review. Continue development of autonomous vehicle control and test range traffic monitoring systems. Continue acquisition of computer workstations to conduct data processing and analysis. Continue development of an enhanced DT/OT on-board vehicle instrumentation package. Continue development of vehicle endurance/performance test data analyzers. Continue development of an acoustic soldier-system instrumentation suite to measure and record field test data. Continue development of a laser target scoring system to measure supersonic/subsonic projectiles. Initiate acquisition of amplifiers and digitizers to upgrade the collection of ballistic range data. Initiate acquisition of a high-speed digital camera to reduce test costs associated with film processing/reproduction and to eliminate hazardous silver waste by-products generated during the film development process. Initiate development of a gun chamber pressure system. Continue development of a measurement system to measure shock levels generated by munitions on combat vehicles.</p> <p>ATTC: Continue upgrade of the helicopter icing spray system by replacing the hydraulic pump to ensure that the spray level characteristics are identical to natural clouds. Acquire airborne video recorders, video cameras and a telemetry link to simultaneously record and reproduce multiple aircraft data channels. Initiate acquisition of signal conditioning equipment to ensure safe monitoring of aircraft electrical signals and a high-speed data acquisition equipment to replace old, obsolete equipment. Initiate upgrade and integration of the icing instrumentation system from the U-21 aircraft to the C-12 aircraft.</p> 		
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<p>FY 2001 Planned Program: (continued):</p> <p>DPG: Continue acquisition of portable thermometers to conduct atmospheric boundary layer tests for dispersion field-testing. Acquire atmospheric dispersion thermometers and process logic controllers to collect field test data from mini-cams. Replace obsolete chemical equipment used to conduct safety air monitoring, hazardous waste characterization, and sample analysis. Replace an old, obsolete fermentor/containment chamber to ensure that highly pathogenic microorganisms are not released into the atmosphere.</p> <p>RTTC: Continued acquisition of power amplifiers that are required to generate Electromagnetic Radiation environments used in physical environments testing. Continue acquisition of automated matrix switching devices and programmable conditioning equipment to allow insertion of flight test data into hardware-in-the-loop and six degree-of-freedom simulators. Continue development of a six degree of freedom motion simulator to perform non-destructive missile testing. Continue acquisition of a high speed, high bandwidth fiber optic network to link the RTTC test ranges/facilities with the AMCOM RDEC. Initiate acquisition of a digital real-time imaging system, which consists of a test item handling system capable of handling ATACMS size motors, a digital real-time x-ray imaging and enhancement system capable of creating 3D computed tomographic images, and a programmable logic controller for automating the motion control of the test item, to inspect missile systems and components to detect defects or lose components.</p> <p>WSMR: Continue conversion of an optical tracker system to single station laser tracker. Continue development of instrumentation platform to remotely collect, analyze, transmit and log C4I message traffic. Continue software upgrade of the Drone Formation Control System autopilot, control, navigation and guidance systems. Continue acquisition of telemetry, range timing, operations control, data display, and video relay equipment and instrumentation to provide a smooth transition of range control from the Range Control Center to the new Cox Range Control Center. Continue development of the high speed/high capacity wireless data communication network to support data collection, analysis and reduction of C4I test data. Initiate acquisition of portable 406-420MHz radios to comply with the National Telecommunications and Information Administration directive to migrate to 12.5 kHz bandwidth radios. Initiate acquisition of test control and analysis workstations at Launch Complexes 32, 33, 38, and 50. Initiate acquisition of a film to videotape transfer system. Initiate development of an optical data measurement system to provide highly accurate post-test TSPI and miss distance data in support of air defense and large missile testing.</p> <p>YPG: Continue acquisition of mobile, portable, and base station trunked land radio units. Complete upgrade the MPS-36 to provide precision tracking data and to control other down range instrumentation (such as Kineto Tracking Mounts and other short-range radars) near the impact point for artillery and smart munitions testing. Continue acquisition of data recorders, sensors and telemetry equipment to collect aerodynamic and flight dynamic data for airdrop systems. Continue acquisition of data loggers, radios, modems and sensor test equipment at CRTC. Initiate upgrade of two portable Weibel tracking radars that will be used to control optical trackers and provide data for the mobile mission control center.</p> <ul style="list-style-type: none"> • 1430 PROTOTYPE INSTRUMENTATION AND ADVANCED CONCEPTS. Provide quick reaction capability to respond to emergency requirements, provide support for technical committees forging future instrumentation technology developments, and maintain/improve existing capability by replacement and limited upgrade of worn out, obsolete or unserviceable equipment/instrumentation at Army technical test ranges. Continue to develop Test Operations Procedures (TOPs) and International Test Operations Procedures (ITOPs) to ensure quality and consistency of test results throughout Army and for international cooperative applications. <p>FY 2001 Planned Program: (continued):</p>		
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- 4956 HQ DTC: Provide management support for VPG across the command to ensure commonality, conduct strategic planning, and develop roadmaps. 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 TERIB co-chair and the Army principal on the T&E Board of Operating Directors. Provide administrative support for the Local Area Network and TECNET, contracts, patents, symposia and conferences, exhibits and printing. Continue funding support to the Joint Program Office (JPO) for Test and Evaluation under the tri-service Executive Agent for Test and Evaluation.

Total 33156

B. Program Change Summary	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>
Previous President's Budget: <u>FY 2000/2001 PB</u>	43638	30470	33332
Appropriated Value	43939	31670	
Adjustments to Appropriated Value			
a. Congressional General Reductions	-301		
b. SBIR/STTR	-1091		
c. Omnibus or Other Above Threshold Reduction		-118	
d. Below Threshold Reprogramming	-647		
e. Rescissions	-174	-113	
Adjustments to Budget Years Since <u>FY 2000/2001 PB</u>			-176
Current Budget Submit (<u>FY 2001 PB</u>)	41726	31439	33156