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

DATE: June 2001

BUDGET ACTIVITY: 06 - Management and Support

PE NUMBER AND TITLE: 0604759F Major T&E Investment

PROJECT: 4597

COST ($ in Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4597	Air Force Test Investments	54,072	67,631	49,857	50,230	60,792	70,673	72,137	75,335	Continuing	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

FY03-07 budget numbers do not reflect the DoD strategic review results

(U) A. Mission Description

This program element provides planning, improvements, and modernization for test capabilities at four Air Force test organizations: 46 Test Wing of the Air Armament Center (AAC), Arnold Engineering Development Center (AEDC), and Air Force Flight Test Center (AFFTC). The purpose is to help test organizations keep pace with emerging weapon system technologies. For example, advances in missile seeker technology and capabilities drive the requirement for improvement in missile seeker test capabilities such as the Guided Weapon Evaluation Facility (GWEF), Seeker T&E, and Scene Characterization and Reconstruction for Advanced Munitions (SCRAM) projects; advances in the Global Positioning System (GPS), providing greater time-space-position accuracy, will be integrated into the ranges at Eglin and Edwards Air Force Bases; and advances in computer capabilities, which will enhance efficiencies in data collection, analysis, and distribution, will be exploited in the Data Acquisition and Processing System (DAPS) and Computer Aided Modernization Project (CMP) projects. Test investment activities are also funded at the Joint Program Office (JPO) for Test and Evaluation (T&E) and for the Technology Insertion & Risk Reduction (TIRR), formerly the Test Technology Development (TTD), Program. The TIRR program will provide funds to intitiate studies of new technologies and test methodologies to determine their feasibility for future T&E investment. The intent is to reduce the cost and risk associated with new technologies and methodologies using short term (1-3 years) limited funding studies prior to investing in larger projects.

The fluctuations in the funding at these locations are due to changing priorities in the improvement and modernization requirements as defined through the AF Test Investment Planning & Programming Process. Also, all projects have been reviewed through the tri-Service Reliance effort (to communicate AF efforts to the other Services and avoid unwarranted duplication of effort) and are documented in the Test Capability Master Plans. Further, each project has its own planning, development, equipment acquisition/facility construction, equipment installation, and checkout phases which often requires significant differences in funding from one year to the next. As such, the changes in funding from year to year do not necessarily indicate program growth but rather a planned phasing of improvement and modernization efforts. The test capabilities at these locations enable testing through all phases of weapon system acquisition from system concept exploration through component and full scale integrated weapon system testing to operational testing. These test organizations have over $10 billion worth of unique test facilities/capabilities. They are a national asset operated and maintained by the Air Force for DoD test and evaluation missions, but they are available to others having a requirement for their unique capabilities.

46 TW, located at Eglin AFB, FL, conducts and supports developmental test and evaluation and operational test and evaluation of non-nuclear air armaments,

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(U) A. Mission Description Continued

Command, Control, Communications, Computers and Intelligence (C4I) systems, and target acquisition and weapon delivery systems; navigation systems; provides a climatic simulation capability; and determines target/test item spectral signatures. The Guided Weapon Evaluation Facility (GWEF) provides a full spectrum, multifunctional seeker/sensor laboratory test capability for all guided weapons. Common Airborne Instrumentation System (CAIS) Integration and Advanced Airborne Instrumentaion Integration (AAII) provide standardized airborne test instrumentation to enhance interoperability and commonality. Global Positioning System (GPS) Range Systems will provide a major improvement for Time-Space-Position-Information (TSPI) at all Major Range and Test Facility Bases (MRTFB) and specifically at the Eglin Ranges for munitions testing. C4I Test Capabilities Upgrade and C4I Advanced Simulation and Test Environment (CASTE) will provide connectivity to existing capabilities and add needed networks and hardware to develop a C4I test bed. Link-16 support will provide a host platform simulator for C4I testing. The Preflight Integration of Munitions and Electronic Systems (PRIMES) facility conducts preflight test and evaluation of total integrated weapon systems in a secure anechoic chamber. The Armament Systems Test Environment (ASTE) Range Systems effort upgrades instrumentation of the major data collection systems supporting open air testing. Mission Control/Data Analysis and Test Control and Visualization projects provide for real-time central mission control and analysis. Multispectral Missile Engagement Hardware-in-the-Loop (HITL) Test project provides a capability to support multiple and wide field-of-view missile engagements incorporating multispectral stimulators. The Santa Rosa Island Reconstitution effort will provide hardware-in-the-loop equipment for three focus sites to support armament/munitions and C4I testing. Seeker T&E will upgrade unique Electro-Optical/Infrared/Millimeter Wave (EO/IR/MMW) field measurement capabilities to support tri-Service smart weapons development. Scene Characterization and Reconstruction for Advanced Munitions (SCRAM) will measure, characterize, and reconstruct high fidelity multispectral target scenes that will be integrated into the GWEF. Weapon Integration/Compatibility Support (WICS) will provide upgrades to support post EMD F-22 weapons integration and certification. Climatic Lab Upgrades will provide upgrades to instrumentation and climatic simulation equipment. Advanced GPS/Hybrid Simulation (AGHS) capability will support laboratory testing with the new GPS signal structure and provide digital modeling of modernized GPS equipment. These projects ensure test center technology is compatible with weapon systems to be tested such as AMRAAM, JDAM, ASRAAM, AGM-130, JTIDS, JSTARS, Combat Talon, etc.

AEDC, located at Arnold AFB, TN, provides ground environmental test support for DoD aeronautical, missile, and space programs. The center has 53 test facilities providing: aerodynamic testing of scale model aircraft, missile, and space systems; testing of large and full-scale satellites, sensors, and space vehicles in a simulated space environment; altitude environmental testing for aircraft, missile, and spacecraft propulsion systems; and testing of large-scale models such as space boosters together with their propulsion systems. The Computer Aided Modernization Project (CMP) will provide increased capability for data processing and storage and provide wider availability of workstations. The Propulsion Wind Tunnel (PWT) Upgrades project sustains long-term operation of tunnels 16T and 16S to meet transonic/supersonic test needs. The Improve Turbine Engine Structural Integrity project will provide new state-of-the-art structural test monitoring and data analysis systems to support turbine engine structural tests to detect and analyze high cycle fatigue. The Hypersonic Capability Development project provides for the studies and analysis of the hypersonic wind tunnel requirements definition and program planning. Real-Time Display and Analysis System will provide upgraded displays and analysis systems to several key test facilities to help achieve a portion of AEDC's vision of integrating test/plant/utilities operations. JSF STOVL Engine Test Cells

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(U) A. Mission Description Continued

Upgrade will modernize the sea level test cells 2 and 3 (SL2/3) transferred from Trenton NAS under BRAC and installed at AEDC. These cells will be utilized for environmental and structural endurance testing of the Joint Strike Fighter, JSF, engines, F119/F120 derivatives. The cells will be upgraded for the size of the JSF engines and for the testing of the STOVL features of the engines.

AFFTC, located at Edwards AFB, CA conducts and supports developmental test and evaluation and operational test and evaluation of aircraft and aircraft systems, aerospace research vehicles, uninhabited aerial vehicles, cruise missiles, parachutes delivery/recovery systems, and cargo handling systems. The AF Common Airborne Instrumentation System (CAIS) Integration & Support (I&S) supports DoD objectives for interoperability/commonality. The goal of CAIS I&S is to integrate CAIS equipment, develop and integrate supporting instrumentation equipment and systems to provide a full airborne instrumentation operational capability. The Advanced Data Acquisition and Processing Systems (ADAPS) project provides an integrated capability to satisfy real-time, first generation, post-test data processing, archival, and display requirements. The developmental approach is directed towards providing a high degree of interoperability between systems and components with adherence to Air Force and DoD guidelines. The technologies being developed under ADAPS have the potential to satisfy data processing and display needs at various multi-Service test ranges. The Flight Simulation Modernization (FSM) project will upgrade the Test and Evaluation Modeling and Simulation (TEMS) facility to meet future man-in-the loop simulator requirements. The Modeling and Simulation T&E Resources (MASTER) program is a joint development effort between the AFFTC and AEDC. The goal is for the two Centers to integrate modeling and simulation (M&S) more closely to ground and open-air range flight test to reduce the cost and time of developmental testing. MASTER has been divided into five separate development efforts to meet this goal: the Consolidated Model and Data Repository; the development of a Configuration Management, scheduling and asset tracking system; the Propulsion Data Validation and Analysis System; the Store Separation Simulation Capability and the Fluid Structural Interaction Capability project will provide the TEMS facility with subsystem models to build future simulations and the tools to validate real-time modeling with ground tests and open-air range flight test. The Linked Interactive T&E Networking (LITENING) project will provide the network infrastructure to support inter-range simulations and support the efficient transmission of flight test data to various facilities at Edwards for processing and analysis. The Advanced Range Telemetry (ARTM) Integration project will procure and integrate improved range telemetry systems to provide greater efficiencies in telemetry frequency utilization.

SMC/TE located at Kirtland AFB, NM is responsible for test planning and implementation for all space and ballistic missile systems. On-orbit testing is conducted at the RDT&E Support Center (RSC) at Kirtland AFB NM and ground control systems are tested by the Center for Research Support (CERES) at Schriever AFB CO using test and check out satellites. The Combined Space Test Task Force project will provide the capability to develop and test new satellites and ground control systems. As of FY02, SMC/TE will be moved to AFSPC under the Space Commission recommendations and no longer function as part of the DT&E infrastructure.

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(U) A. Mission Description Continued

(U) FY 2000 ($ in Thousands)

(U)	$0	46 Test Wing, Air Armament Center
(U)	$2,755	CAIS Integration. Continued integration, procured mini-CAIS hardware, and continued procurement of support equipment for CAD/CAM and preflight quick-look capability.
(U)	$1,430	C4I Test Capabilities Upgrade. Continued acquisition of workstations, network connections, and processing hardware/software. Began upgrades to the JTIDS OPFAC.
(U)	$3,525	GWEF. Continued acquisition of the multispectral man-in-the-loop. Began acquistion of an Imaging IR Simualtion & Projection capability. Continued development of aircraft/munitions modeling and simulation.
(U)	$1,635	GPS Range Integration. Continued acquisition of Advanced Range Data System (ARDS) pods, S/W improvements, and ground vehicle instrumentation.
(U)	$1,798	PRIMES. Began development of aircraft/munitions interface simulations for UCAVs. Continued advanced simualtor/stimulator upgrades to include off-board sensor simulator.
(U)	$2,515	ASTE Range Systems. Continued upgrades to telemetry, TSPI systems, communications and arenas. Began upgrades to gun ranges, microwave, fuze test, range instrumentation systems and the Kinetic Energy Munition Test Facility. Acquired a Forward Looking Infrared (FLIR) system, and video phototheodolites.
(U)	$1,178	Mission Control/Data Analysis. Continued procurement of data acquisition equipment and 3-D terrain generation/visualization capability. Began acquisition of H/W and S/W for 'near' real-time data processing.
(U)	$1,535	Multispectral Missile Warning System Test Capability. Completed the high off boresight angle flight motion simulator (FMS) and countermeasures simulation.
(U)	$1,304	Seeker T&E. Began upgrades to the MMW measurement systems. Acquired a midwave focal plane array (FPA) imaging radiometer. Upgraded the Seeker Test Van and the Airborne Seeker Evaluation Test System (ASETS) instrumentation.
(U)	$4,375	Eglin Range Upgrades. Supported three on-going projects: 1. Santa Rosa Island Reconstitution: continued development of three focus sites to provide open air Hardware-in-the-Loop (HITL) capability. 2. Armament Systems Test Environment: improved several subsystems by integrating the latest technology to support the T&E of modern weapon systems. 3. C4I Upgrades: improved multifunctional reconfigurable C4I Test and Evaluation infrastructure.
(U)	$0	Arnold Engineering Development Center
(U)	$1,127	CMP. Added increment five worksystems. Initiated the Aircraft Systems Test Operations Pilot effort. Integrated the Product Data Manager application software packages. Initiated the migration of real-property drawings and designs to a raster format.
(U)	$6,761	PWT Upgrades. Completed installation of data acquisition and processing system in the 16T wind tunnel. Designed the 16S wind tunnel data

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(U) A. Mission Description Continued

(U) FY 2000 ($ in Thousands) Continued

acquisition and processing system. Began installation of 16S wind tunnel data acquisition and processing system. Began installation of 16T/16S wind tunnel plant control systems. Began planning/design for electric motor repower upgrades. Began planning for flow quality improvements.

(U) $531 Improve Turbine Engine Structural Integrity. Continued development of Non-Intrusive Stress Monitoring System (NSMS) software and hardware to identify turbine engine rotor blade characterisitics. Continued upgrades of the dynamic data acquisition and processing system.

(U) $1,000 Laser Induced Surface Induction (LISI). Began the development and test of the University of Tennessee Space Institute LISI project.

(U) $3,812 Hypersonic Capability Development. Continued study contracts for requirements definition and program planning. Conducted experiments to prove concept for wind tunnel.

(U) $0 Air Force Flight Test Center

(U) $3,600 CAIS I&S. Continued development and implementation/delivery of an internet-based instrumentation management information system. Procured additional airborne Solid State Recorder. Procured bandwidth efficient telemetry transmitters and demodulators. IOC of Instrumentation Loading Integration Analysis and Decommutation (ILIAD) established. Began integration of commercial tools for instrumentation support into ILIAD. Tested prototype and procured a production Solid State Recorder. Complete rehost of Test Instrumentation Management Systems (TIMS) to ILIAD. Began development of CAIS Bus to Next Generation (NextGen) Bus (Fibre Channel) bridge. Provided the capability to support new airborne instrumentation capabilities including: on-board processing innovations, on-board smart sensors, and high data rate decommutation and recording.

(U) $2,705 ADAPS. Continued to integrate real-time systems across the flight test center to replace older systems. Continued development of full capability for near real-time and post test analysis system.

(U) $3,130 Flight Simulation Modernization. Began upgrade to the TEMS facility with the first of two aircraft specific configuration cockpits to be integrated with the generic high-fidelity reconfigurable cockpit. Upgraded the interfaces between the TEMS simulations to allow multi-system simulation testing.

(U) $2,205 LITENING. Established core network. Connected the Avionics Test & Integration Complex (ATIC), Ridley Mission Control Center and the backbone ring together. Began development on the Air Traffic Management Network Operations Center.

(U) $1,055 MASTER. Began initial planning to develop the repository for models and data using established procedures to validate them with data collected during ground and flight test. The models and data will be used to support man-in-the-loop simulator testing and training, which will support configurable simulations for the Flight Simulation Modernization and the Air Warfare Mission Simulator (AWMS) cockpits.

(U) $4,975 Cooperative Launch Platform (Formerly Heavylift Launch Platform). Upgrade a B-52H aircraft to perform medium-lift launch platform duties for Re-usable Aerospace Vehicles (RAV) testing and operation. The upgrade will provide the capacity to carry research vehicles in the 25,000-pound range. Upgrade also includes installation of instrumentation needed for monitoring key test parameters of the launch platform and

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(U) A. Mission Description Continued

(U) FY 2000 ($ in Thousands) Continued

test vehicle for safety and technical GO/NO-GO decisions.

(U) $886 Combined Space Test Task Force. Began development and acquisition of expert systems to support operations and testing of future technology for R&D satellites. Evaluated effectiveness of these systems and their value to support warfighter needs.

(U) $235 Joint Project Office for T&E support.

(U) $54,072 Total

(U) FY 2001 ($ in Thousands)

(U) $0 46 Test Wing, Air Armament Center

(U) $2,894 CAIS Integration. Complete integration and required support equipment acquisition.

(U) $1,750 C4I Upgrade. Complete the acquisition of workstations, connectivity, HW/SW upgrades, and JTIDS OPFAC upgrades. Acquire test analysis equipment and M&S tools.

(U) $2,527 GWEF. Complete the multispectral man-in-the-loop and imaging IR developments. Continue aircraft/munition M&S efforts.

(U) $1,699 GPS Range Integration. Complete acquisition of ARDS pods, S/W improvements, and ground vehicle instrumentation.

(U) $1,680 PRIMES. Complete the aircraft/munitions interface simulations and the off-board sensor simulator. Acquire a synthetic aperture radar target simulator.

(U) $1,843 ASTE Range Systems. Complete acquisition of instrumentation/equipment for infrastructure upgrades in such areas as TSPI, microwave, TM, fiber optics/communications, arena test, gun ranges, high speed video, and fuze test.

(U) $1,392 Mission Control/Data Analysis. Complete procurement of data acquisition equipment, near real-time data processing equipment, and a 3-D terrain generation/visualization capability.

(U) $856 Seeker T&E. Complete upgrades to the MMW measurement system and acquire a high speed digital data recorder and a long wavelength FPA imaging radiometers.

(U) $6,486 Eglin Range Upgrades. Support Armament Systems Test Environment (ASTE) Infrastructure Upgrades: improve several subsystems by integrating latest technology to support the T&E of modern weapon systems. Begin integration of the 3-DATA system.

(U) $0 Arnold Engineering Development Center

(U) $3,393 CMP. Procure/Install increment six worksystems. Complete Product Data Manager integration with application software packages. Upgrade older worksystems to the state-of-the-art PC hardware configuration. FOC of CMP systems.

(U) $20,133 PWT Upgrades. Complete installation of 16S wind tunnel data acquisition and processing system. Complete installation of plant control systems in 16T/16S wind tunnels. Initiate procurements for electric motor upgrades. Begin design of flow quality improvements.

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(U) A. Mission Description Continued

(U) FY 2001 ($ in Thousands) Continued

(U)	$880	Improve Turbine Engine Structural Integrity. Complete installation of the dynamic data acquisition and processing system and the NSMS. Begin planning/design of the Structural Dynamic Response Analysis Capability.
(U)	$3,492	Hypersonic Capability Development. Continue study contracts for requirements definition and program planning. Continue experiments to prove concept for wind tunnel.
(U)	$1,098	Laser Induced Surface Induction (LISI). Continue development and test of the University of Tennessee Space Institute LISI project.
(U)	$0	Air Force Flight Test Center
(U)	$2,445	CAIS I&S. Complete the development and integration of an internet-based instrumentation management system. Continue development of CAIS Bus to NextGen Bus (Fibre Channel) Bridge. Continue to provide the capability to support new airborne instrumentation capabilities including: on-board processing innovations, on-board smart sensors, and high data rate decommutation and recording.
(U)	$2,488	ADAPS. Complete development of near real-time and post test analysis capabilities to include the Combined Test Force level. Complete the installation of common data systems throughout the Flight Test Center. Upgrade and install control room workstations.
(U)	$3,860	Flight Simulation Modernization. Complete upgrade to the TEMS Facility with the first of two aircraft specific configuration cockpits to be integrated with the generic reconfigurable cockpit.
(U)	$2,102	LITENING. Extend the ATM backbone network to critical Range Support buildings and CTFs. Develop the Network Operations Center to monitor and manage network traffic loads. Expand secure network links to allow classified test data to be transferred between integrated secret, compartmentalized facilities.
(U)	$1,489	MASTER. Develop and establish propulsion, weapons, and airframe interaction models. Begin design and development of the model/data repository.
(U)	$763	Advanced Range Telemetry (ARTM) Integration. Begin integration of RCC FQPSK modulation/demodulation technology into telemetry transmitters/receivers. Begin integration of PCM data compression and forward error correction technology into the range infrastructure (includes airborne and ground segments). Begin improvement and modernization of telemetry ground stations. Begin to migrate telemetry users, who are presently in S-Band, to L-Band.
(U)	$499	X-15 Rocket Test Stand. Begin design, restoration and modification of the existing X-15 rocket engine test stand and control bunker. Study the relocation of the AFFTC LOX facility away from the test stand, located at Edwards AFB, CA.
(U)	$2,594	Multi-Axis Thrust Stand. Begin redesign, retrofit and relocation the existing Overhead Support System (OSS) from NASA Ames Research Center to the existing outdoor engine test cell facility at Edwards AFB, CA. Initiate modification of existing control rooms, support systems, and data acquisition.
(U)	$935	Combined Space Test Task Force. Continue development and evaluation of expert systems to support operations and testing of future technology

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(U) A. Mission Description Continued

(U) FY 2001 ($ in Thousands) Continued

R&D satellites. Implement lessons learned and transition technical advancements to operational users.

(U) $333 Joint Project Office for T&E support.

(U) $67,631 Total

The following net transactions are not reflected in the FY01 program total: BTR=-526K, SBIR=-2470K, CGR RESC=-148K. These transactions are not reflected in other sections of the R-docs where an FY01 total is shown.

(U) FY 2002 ($ in Thousands)

(U) $0 46 Test Wing Air Armament Center

(U) $938 Advanced GPS Hybrid Simulation (AGHS). Begin procurement of hardware and software required to simulate the new GPS signal structure.

(U) $2,157 Weapon Systems Integration Test Capability (WICS). Begin F-22 flutter, loads, stability and control M&S. Begin Eglin-Edwards high-speed data link for near real-time data analysis.

(U) $1,173 Advanced Airborn Instrumentation Integration (AAII). Begin acquisition and integration of state-of-the-art airborne instrumentation such as Advanced CAIS and CTEIP developed ARTM. Acquire ground support equipment to support pre/post flight operations

(U) $4,221 SCRAM. Begin acquisition of instrumentation to support scene characterization and reconstruction for T&E of EO/IR, RF/MMW, and GPS seeker/sensors.

(U) $888 Test Control & Visualization. Begin upgrades to TM systems and network infrastructure to handle higher data rates. Acquire real time computing servers, data recorders, and video displays.

(U) $1,485 C4I Advanced Simulation and Test Environment (CASTE). Acquisition of equipment, instrumentation, hardware, software, and connectivity.

(U) $2,175 Link-16 Support. Begin acquisition of platform simulators and related datalink equipment.

(U) $791 Climatic Lab Upgrade. Begin upgrades to instrumentation systems, climatic simulation equipment and facility equipment.

(U) $0 Air Force Flight Test Center

(U) $2,111 Flight Simulation Modernization. Begin fabrication of second aircraft configuration cockpits to be integrated with the generic high fidelity reconfigurable cockpit and associated visual system and support equipment.

(U) $2,587 LITENING. Complete expansion of ATM Network to range support buildings and new CTF facilities. Expand Multi-media capabilities for flight testing and modeling and simulation. monitor and manage network traffic loads. Expand secure network links to allow classified test data to be transferred between integrated secret, compartmentalized facilities.

(U) $2,305 MASTER. Incorporate engine propulsion rule-based techniques, engine manufacturer techniques, statistical logic, trending algorithms, and sensor characterization to detect operational non-conformance events and an information archival system to archive test information for ground

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(U) A. Mission Description Continued

(U) FY 2002 ($ in Thousands) Continued

and flight test systems . Develop Initial Operating Capability of the automated tracking and scheduling system for ATIC assets. Provide the Avionics Test & Integration Complex (ATIC) with automated services to support additional ground testing at the ATIC. Provide for the storage and version control of tools obtained from such sources.

(U) $2,616 Advanced Range Telemetry (ARTM) Integration. Continue to integrate Tier I modulation (FQPSK) developed by ARTM into telemetry infrastructure. Continue the migration of telemetry users from S-band to L-band. Begin upgrading telemetry support infrastructure (includes airborne and ground segments) to fully utilize real-time data compression, error correction, standardized solid-state data recorders, and frequency and bandwidth reuse, deconfliction, and reallocation.

(U) $495 Advanced GPS Range Sensors (AGRS). Begin to plan GPS range equipment upgrade to reflect enhanced capabilities made to GPS constellations. Integrate newly develop GPS instrumentation equipment into range sensors.

(U) $1,103 Data Processing Multi-Stage Improvement Program (DPMISP). Begin upgrade of first generation telemetry data processing capability. Initiate hardware analysis and prototype of next generation telemetry processor.

(U) $1,172 Next Generation Test Instrumentation. Integrate ARTM developed systems into multiple aircraft. Provide enhancements and improvements to the Internet based Instrumentation Management Information Systems. Expand the capabilities of ILIAD to program and preflight test vehicles. Develop airborne instrumentation components to address new sensor interfaces. Continue to purchase instrumentation components to upgrade obsolete and unreliable instrumentation components. Continue the migration of telemetry users into higher efficiency modulation techniques and L-band. Integrate on-board data processing devices into data acquisition systems. Conduct test of NexGenBus devices.

(U) $0 Arnold Engineering Development Center

(U) $16,262 PWT Upgrades. Continue procurement of and begin installation and checkout of electric motor upgrades. Continue installation of plant control systems in 16T/16S wind tunnels. Begin acquisition planning of flow quality improvements.

(U) $1,862 Improve Turbine Engine Structural Integrity. Begin installation of Dynamic Data Recording Systems. Begin fabrication and installation of Non-Instrusive Stress Measurement System (NSMS) Systems. Continue to upgrade Dynamic Data processing system.

(U) $2,518 Real-Time Display and Analysis System. Begin the planning and design phases for the upgrading of the turbine test unit supervisory system and the turbine/wind tunnel test operations centers and initiate the procurement for the long lead time equipment.

(U) $1,619 JSF STOVL Engine Test Cells Upgrade. Begin design and fabrication of hardware for sea level (SL3) test cell upgrades for JSF testing.

(U) $0 Space & Missile Systems Center T&E Directorate

(U) $479 Combined Space Test Task Force. Complete CTF tasks including final installation, test, and activation.

(U) $0 Other Projects

(U) $300 Joint Project Office for T&E support.

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(U) A. Mission Description Continued

(U) FY 2002 ($ in Thousands) Continued

(U) $600 Technology Insertion & Risk Reduction Program. Initiate TIRR project with the funding of first sub-project.

(U) $49,857 Total

(U) B. Budget Activity Justification

This Program Element is in Budget Activity 6, Management and Support, because it is a Research and Development (R&D) effort for Improvement and Modernization of T&E capabilities at Air Force Test Centers.

(U) C. Program Change Summary ($ in Thousands)

		FY 2000	FY 2001	FY 2002	Total Cost
(U)	Previous President's Budget (FY 2001 PBR)	56,659	54,057	51,136	
(U)	Appropriated Value	57,934	68,257		
(U)	Adjustments to Appropriated Value				
	a. Congressional/General Reductions	-405	-148		
	b. Small Business Innovative Research	-1,337	0		
	c. Omnibus or Other Above Threshold Reprogram	-1,600			
	d. Below Threshold Reprogram	-293	0		
	e. Rescissions	-227	-478		
(U)	Adjustments to Budget Years Since FY 2001 PBR			-1,279	
(U)	Current Budget Submit/FY 2002 PBR	54,072	67,631	49,857	TBD

(U) Significant Program Changes:

Congressional action, FY00 plus up of 13,600: Eglin Range Upgrade (4,500), Hypersonic Capability Development (4,000), Heavy Launch Platform (5,100).
Congressional Action, FY01 plus up of 14,200: Eglin Range (6,500), Hypersonic Capability Development(3,500), Multi-Axis Thrust Stand (2,600), X-15 Rocket Test Stand (500), Laser Induced Surface Improvement (1,100).

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(U) D. Other Program Funding Summary ($ in Thousands)

	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
(U) AF RDT&E										
(U) Other APPN										

Related RDT&E: PE 0604256F, Threat Simulator Development and PE 0604940D, Central Test and Evaluation Investment Program

(U) E. Acquisition Strategy

This program element uses several different contracting strategies to provide the most cost effective T&E investment solutions. The main acquisition strategy is to use full and open competition wherever possible to improve and modernize existing test capabilities.

(U) F. Schedule Profile

	FY 2000				FY 2001				FY 2002			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Air Force Test Investments												

This PE contains multiple schedule profiles which are available upon request.