ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2006

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
6 - Management support	**0605702A - Meteorological Support to RDT&E Activities**	**128**

COST (In Thousands)	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate
128 Meteorological Support to RDT&E Activities	9440	8703	8571	8483	8478	8554	7384

A. Mission Description and Budget Item Justification: All functions and resources in this Program Element (PE) are managed by the U.S. Army Developmental Test Command, a subordinate command of the U.S. Army Test and Evaluation Command (ATEC). Meteorological support to research, development, test, and evaluation (RDT&E) activities provides standard and specialized weather forecasts and data for test reports to satisfy Army/Department of Defense RDT&E test requirements for modern weaponry, e.g., (1) unique atmospheric analysis and sampling to include atmospheric transmittance, extinction, optical scintillation, infrared temperature, aerosol/smoke cloud dispersion characteristics, ballistic meteorological measurements, snow characterization and crystal structure; (2) test event forecasting to include prediction of sound propagation for ballistic firing tests, specialized prediction of light levels and target to background measurements, and predictions for electro-optical testing and ballistic artillery/mortar firing; and (3) advisory and warning products such as go/no-go test recommendations for ballistic and atmospheric probe missiles, smoke/obscurant tests, hazard predictions for chemical agent munitions disposal, monitoring dispersion of simulant clouds for chemical/biological detector tests, simulated nuclear blasts, and weather warnings for test range safety. Provides technical support to Army Program Executive Officers (PEOs), Project Managers (PMs), and the Army test ranges and sites at: White Sands Missile Range (WSMR), NM; Electronic Proving Ground (EPG), Fort Huachuca, AZ; Dugway Proving Ground (DPG), UT; Aberdeen Test Center (ATC), Aberdeen Proving Ground, MD; Redstone Technical Test Center (RTTC), Redstone Arsenal, AL; Yuma Proving Ground (YPG), AZ (including the Cold Regions Test Center (CRTC), Fort Greely, AK); Fort Belvoir, VA; and Fort A.P. Hill, VA. Develops methodologies and acquires instrumentation and systems that allow meteorological teams to support current and future Army/DoD RDT&E requirements. This PE finances indirect meteorological support operating costs not billable to customers and replacement/upgrade of meteorological instrumentation and support systems. Direct costs for meteorological support services are not funded by this PE, but are borne by the customer (i.e., materiel/weapons developers and project/product managers) in accordance with DoD Directive 7000.14R, October 1999. This program is essential to the accomplishment of the Army's developmental test mission in that precise weather modeling and measurement directly influence test item performance.

Accomplishments/Planned Program	FY 2005	FY 2006	FY 2007
Provides indirect costs (personnel salaries) for generating weather forecasts, severe weather warnings and advisories; staff meteorological services; and atmospheric measurements in support of Army/DoD tests and projects at nine Army sites/test ranges, and alternate test sites as required. In FY05 and FY06 provided full salaries for interns at each site. These new hires are essential to support increasing demands for detailed weather knowledge required to test modern weapon systems, and to ensure continuity of specialized meteorological support as the aging workforce begins to retire. Provides program management for meteorological support to the Army research, development, test and evaluation community and technical review/assistance to ranges and meteorological support teams. Includes Verification, Validation and Accreditation (VV&A) for the Four-Dimensional Weather (4DWX) System.	3359	2994	2766
Provides funding for meteorological instrumentation and technology to support RDT&E activities at Army test ranges. Includes funding for development, fielding, and enhancement of the 4DWX system, an advanced meteorological support system that provides high-resolution weather forecasts and analyses to support developmental and operational field tests. The 4DWX analyses and forecasts of the 3-dimensional structure of the atmosphere over time (4th dimension) are used in test planning, conduct, and forensic analyses and also provide realistic atmospheric conditions for modeling and simulation. The Global Meteorology on Demand (GMOD) capability allows range meteorologists to set-up and launch 4DWX modeling capabilities anywhere in the world. FY05 accomplishments included addition of the 4DWX real-time four dimensional data assimilation capability to the next-generation mesoscale model, the Weather Research and Forecast (WRF) model; upgrading the Linux PC clusters; and increasing the GMOD computer resources to allow concurrent use at	6081	5709	5805

multiple locations. System enhancements planned in FY06/FY07 include transition of the range 4DWX system to the WRF model; further upgrades in GMOD computer; and improved land-surface and boundary layer parameterizations to improve forecast accuracy near the surface. FY05 funding was used to continue a multiyear effort to replace or upgrade obsolete instrumentation, including replacing obsolete upper-air sounding systems, upgrading the sensors on the Surface Atmospheric Measurement System fixed and mobile remote automated weather stations, renovation of the radar wind profilers used to provide near real-time wind and temperature profiles to support test activities such as Chemical/Biological simulant release and missile launches, and replacement of Doppler acoustic sounders for near real-time boundary layer wind profile measurements. This instrumentation modernization will continue in FY06/FY07.			
Total	9440	8703	8571

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2006

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
6 - Management support	**0605702A - Meteorological Support to RDT&E Activities**	**128**

B. Program Change Summary	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY 2006)	8415	8829	9205
Current BES/President's Budget (FY 2007)	9440	8703	8571
Total Adjustments	1025	-126	-634
Congressional Program Reductions			
Congressional Rescissions		-88	
Congressional Increases		-38	
Reprogrammings	1025		
SBIR/STTR Transfer			
Adjustments to Budget Years			-634

In FY05 Funds provided to replace or upgrade backlog of obsolete meteorological instrumentation including: upper-air sounding systems; sensors on the Surface Atmospheric Measurement System (SAMS) fixed and mobile remote automated weather stations; and Doppler acoustic sounders (sodars) for near-real-time boundary layer wind profile measurements. This instrumentation is critical to the continued operations of the meteorological teams.