ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

May 2009

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

	COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate
128	Meteorological Support to RDT&E Activities	8153	8262	8391

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), New Mexico; Electronic Proving Ground (EPG), Fort Huachuca, Arzonia; Dugway Proving Ground (DPG), Utah; Aberdeen Test Center (ATC), Aberdeen Proving Ground, Maryland; Redstone Technical Test Center (RTTC), Redstone Arsenal, Alabama; Yuma Proving Ground (YPG), Arizona (including the Cold Regions Test Center (CRTC), Fort Greely, AK); Fort Belvoir, Virgina; and Fort A.P. Hill, Virgina. This PE develops methodologies and acquires instrumentation and systems that allow meteorological teams to support current and future Army/DoD RDT&E requirements. It 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 measurements directly influence test item performance and quantify test item weather dependencies and vulnerabilities.

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May 2009

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

B. Program Change Summary	FY 2008	FY 2009	FY 2010
Previous President's Budget (FY 2009)	8294	8289	8378
Current BES/President's Budget (FY 2010)	8153	8262	8391
Total Adjustments	-141	-27	13
Congressional Program Reductions		-27	
Congressional Rescissions			
Congressional Increases			
Reprogrammings			
SBIR/STTR Transfer	-141		
Adjustments to Budget Years			13

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

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

COST (In Thousands)		FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate
128	Meteorological Support to RDT&E Activities	8153	8262	8391

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), New Mexico; Electronic Proving Ground (EPG), Fort Huachuca, Arzonia; Dugway Proving Ground (DPG), Utah; Aberdeen Test Center (ATC), Aberdeen Proving Ground, Maryland; Redstone Technical Test Center (RTTC), Redstone Arsenal, Alabama; Yuma Proving Ground (YPG), Arizona (including the Cold Regions Test Center (CRTC), Fort Greely, AK); Fort Belvoir, Virgina; and Fort A.P. Hill, Virgina. This PE develops methodologies and acquires instrumentation and systems that allow meteorological teams to support current and future Army/DoD RDT&E requirements. It 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 measurements directly influence test item performance and quantify test item weather dependencies and vulnerabilities.

Accomplishments/Planned Program:	FY 2008	FY 2009	FY 2010
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. 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.	3188	2670	3276
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. The Global Meteorology on Demand (GMOD) capability allows set-up and launch of 4DWX modeling capabilities anywhere in the world. FY08 accomplishments include initial use of the DPG high performance computer (HPC) to generate ensemble weather, providing probabilistic forecasts by incorporating 30 separate model executions; initial use of the HPC computer to generate 20-year climatologics	4965	5450	5115

for seven ranges; upgraded graphical user interface for GMOD; improved land-surface and boundary layer parameterizations; new data acquisition systems; and the replacement of Linux clusters. 4DWX system enhancements planned in FY09-FY10 include continued development of ensemble modeling, improved lightning warning capability; improved parameterizations of wind flow over mountains and other complex terrain features to improve forecast accuracy; and development of new 4DWX-based techniques to generate weather data in vertical profiles, to reduce the need for some weather balloon launches. FY08 instrumentation funding was used to continue a multiyear effort to replace/upgrade obsolete instrumentation, including upper-air sounding systems, upgrades to weather stations, renovation of radar wind profilers, replacement of Doppler acoustic sounders (wind profile measurements), and relocation of sodar systems (equipment to measure vertical weather profiles) between ranges to maximize use of equipment. This instrumentation modernization will continue in FY09-FY10.			
Small Business Innovative Research/Small Business Technology Transfer Programs		142	
Total	8153	8262	8391