

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

**February 2008**

<b>BUDGET ACTIVITY</b> <b>6 - Management support</b>	<b>PE NUMBER AND TITLE</b> <b>0605702A - Meteorological Support to RDT&amp;E Activities</b>					<b>PROJECT</b> <b>128</b>	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate
128 Meteorological Support to RDT&E Activities	8302	8294	8289	8378	7212	7369	7531

**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. 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.

<b>Accomplishments/Planned Program:</b>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
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.	2341	2339	2670
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. FY07 accomplishments include initial transition of the range 4DWX systems to the Weather Research and Forecast (WRF) model (a nationally recognized next-generation weather prediction system designed for operational forecasting and atmospheric research); further upgrades in GMOD graphical user	5961	5812	5619

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interface; improved land-surface and boundary layer parameterizations to improved forecast accuracy; new data acquisition systems; and the replacement of Linux clusters. 4DWX system enhancements planned in FY08-FY09 include WRF VV&A, use of the new DPG high performance computer (HPC) to generate 20-year 3-D climatologies for seven ranges; implementation of a prototype probabilistic forecasting capability for high profile tests; and additional links between 4DWX and range application models. FY07 instrumentation funding was used to continue a multiyear effort to replace or upgrade obsolete instrumentation, including replacing obsolete upper-air sounding systems, upgrades to the Surface Atmospheric Measurement System weather stations, renovation of the radar wind profilers, and replacement of Doppler acoustic sounders for near real-time boundary layer wind profile measurements. This instrumentation modernization will continue in FY08-FY09.			
Small Business Innovative Research/Small Business Technology Transfer Programs		143	
<b>Total</b>	<b>8302</b>	<b>8294</b>	<b>8289</b>

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<b><u>B. Program Change Summary</u></b>	FY 2007	FY 2008	FY 2009	
Previous President's Budget (FY 2008/2009)	8477	8346	8313	
Current BES/President's Budget (FY 2009)	8302	8294	8289	
Total Adjustments	-175	-52	-24	
Congressional Program Reductions		-52		
Congressional Rescissions				
Congressional Increases				
Reprogrammings	-24			
SBIR/STTR Transfer	-151			
Adjustments to Budget Years			-24	