

FAA William J. Hughes Technical Center

Aviation Weather Development Facility (AWDF)

The Aviation Weather Development Facility (AWDF) was established at the Federal Aviation Administration (FAA) William J. Hughes Technical Center (WJHTC), Atlantic City International Airport, NJ in 1995. Its mission is to provide an integrated central facility for the development and evaluation of future aviation weather systems and products.

This facility provides a means for users to independently evaluate systems and products in an environment that is devoid of distractions and free from any influence and bias. The facility supports the AUA-400 Weather and Flight Service Systems (FSS) Integrated Product Team (IPT) programs, which include the following: Integrated Terminal Weather System (ITWS), Aviation Weather Research (AWR), Weather and Radar Processor (WARP), AWOS Data Acquisition System (ADAS), and Weather Message Switching Center Replacement (WMSCR). The facility also supports the AND-420 Windshear and Radar Product Team (PT) programs including Weather System Processor (WSP) and Low Level Windshear Alert System (LLWAS), and the AND-740 navigation and Landing Team Runway Visual Range (RVR) program.



The AWDF includes production WARP and WSP systems to support these programs. This laboratory is responsible for the testing requirements and technical support of the program's existing and future interfaces. Capabilities of the lab include direct interfaces from WARP to WSR-88D, Coded Time Source (CTS), and WMSCR and ADAS via the Technical Center's NAS Data Interchange Network (NADIN). This configuration allows the Technical Center's WARP system to communicate with all of its NAS interfaces and to disseminate and display WSR-88D product to the Display System Replacement (DSR). Test and interface certification tools will also be developed in the laboratory. Future interfaces include the Weather Information Network Service (WINS), User Request Evaluation Tools (URAT), NAS Infrastructure Management System (NIMS), and the Integration and Interoperability Facility.



The AWDF currently supports the ITWS program with an ITWS prototype and will include a production system. The ITWS prototype is currently supported via networked workstations and display systems fed from the MIT/LL facility in Massachusetts. These displays incorporate live data from numerous sensors to integrate microburst, windshear, and other



weather related phenomena for use by air traffic controllers. The workstations depict the weather environment at the Air Traffic Control Towers (ATCT) at Memphis, TN; Orlando, FL; Dallas/Fort Worth, TX; and the New York Metroplex. A production ITWS will be installed for Operation Test and Evaluation (OT&E) in late 2000. Weather systems including LLWAS, ADAS, NADIN, Terminal Doppler Weather Radar (TDWR), Airport Surveillance Radar Model #9 (ASR-9), and WSR-88D inputs will be available to the ITWS during its OT&E period. Future interface capabilities with other NAS systems are expected as Preplanned Product Improvements (P3I).

The Technical Center RVR has implemented a radio link for research and development of a national standard using this method. RVR also has an interface to the Enhanced Traffic Management System (ETMS) for testing.

Other current and planned systems, test tools, and simulators will provide the lab with the multiple weather sources available at FAA and commercial aviation facilities. These will be used for research, development, data analysis, data archiving, and testing. A Principle Users Processor simulator has been developed to bring WSR-88D data the ITWS and other systems in the AWDF. Future systems include AWIPS and NOAA port.



For additional information regarding the Aviation Weather Development Facility, please contact:

Communication/Navigation/Surveillance Engineering and Test Division - Weather Branch

Federal Aviation Administration
William J. Hughes Technical Center
Atlantic City International Airport, NJ 08405

Phone: (609) 485-5308

Fax: (609) 485-4035

<http://www.tc.faa.gov>

