This past spring, MDL's Decision Assistance Branch conducted five weeks of intensive field testing of the Autonowcaster at the Dallas-Fort Worth Weather Forecast office.

The Autonowcaster is a short-term convection forecast system, developed by the National Center for Atmospheric Research (NCAR). The Autonowcaster ingests data from multiple sources (e.g., satellites, WSR-88D radars, surface observations, numerical models), and uses fuzzy-logic techniques to generate 0-1 hour deterministic forecasts of thunderstorm initiation, growth, and decay. This information could prove to be invaluable to NWS WFO forecasters, the Center Weather Service Units (CWSU's) and the aviation community in general. MDL has worked with the Dallas-Fort Worth Weather Forecast Office (WFO-FWD) and NCAR since 2005 to demonstrate and test the ANC system. MDL developed an ANC interface within the Advanced Weather Interactive Processing system (AWIPS) to display ANC's forecast products.

Key to the success of the Autonowcaster system is the placement of surface boundaries. While there are automatic algorithms to detect surface boundaries, testing at WFO-FWD has focused on the potentially higher-quality "human in the loop" paradigm, with meteorologists identifying and outlining surface boundaries in the D-2D display. These boundaries are sent instantly to ANC via the Local Data Acquisition and Dissemination (LDAD) system and ingested by ANC algorithms running on MDL computers in Silver Spring, MD. The ANC forecast products are then delivered back to the WFO in real time via the Local Data Manager (LDM)

In April and early May, visiting meteorologists from MDL, the NWS Aviation Services Branch, and the Melbourne. FL Weather Forecast Office worked weekly shifts at WFO-FWD. The visiting meteorologists were dedicated to Autonowcaster tasks. These tasks included: 1) drawing boundaries and setting them in motion in the AWIPS Display-in Two Dimensions (D-2D) display, 2) "nudging" the final results in an appropriate direction, if the resultant convection fields were overestimating or underestimating convection, and 3) closely watching the 0-1 hour Autonowcaster initiation, growth, and decay forecasts within D-2D.

While all workstations at WFO-FWD can be used to generate boundaries or display Autonowcaster forecast fields, an additional AWIPS workstation was set up for the visiting meteorologists, and located next to the aviation workstation, to facilitate communication with FWD aviation meteorologists. Dallas-Fort Worth forecasters were consistently engaged and helpful, quality-controlling the boundaries and keeping the visitors informed of the developing forecast.

Results were transmitted to NOAA's Global Systems Division for evaluation. "With this experiment, we hope to determine whether forecaster-drawn surface boundaries improve the performance of the ANC algorithms," said MDL team lead Mamoudou Ba. "The visiting meteorologists also were instrumental in identifying and helping to fix bugs in the system."

MDL has also recently partnered with the Melbourne, Florida Weather Forecast Office to run the Autonowcaster at that WFO and has Autonowcaster algorithms running for the WFO-MLB area on MDL computers.

For more information on the Autonowcaster, please see, "The NCAR Auto-Nowcast System", C. Mueller, et .al., Weather and Forecasting , v. 18, pp 545-561, 2003. MDL's Autonowcaster project can be followed at http://www.weather.gov/mdl/autonowcaster/)