

## **AWOS Data Acquisition System (ADAS)/ Automated Lightning Detection and Reporting System (ALDARS)**

**PURPOSE:** *The Automated Weather Observing Systems (AWOS) Data Acquisition System (ADAS) was developed to collect, process, and archive weather data and then disseminate this information to various National Airspace System (NAS) subsystems.*

The weather data is collected from AWOSs, which includes ASOS and AOS types of weather observing systems, and the National Lightning Detection Network (NLDN) system. The ADAS is vital in processing the NLDN data and disseminating this processed data to the AWOSs for inclusion in the Aviation Routine Weather Reports (METAR) and AWOS format weather reports. The ADAS also is necessary to disseminate the METARs and AWOS format weather reports to the Weather Message Switching Center Replacement (WMSCR), Weather and Radar Processor (WARP), and the Integrated Terminal Weather System (ITWS) via the National Airspace Data Interchange Network (NADIN) II.

### **BACKGROUND**

The ADAS was originally developed without the capability to process the NLDN data. The original ADAS was developed, tested, and deployed to 22 Air Route Traffic Control Centers (ARTCC) in 1994. Following the initial deployment of ADAS, the FAA initiated the Automated Lightning Detection and Reporting System (ALDARS) project.

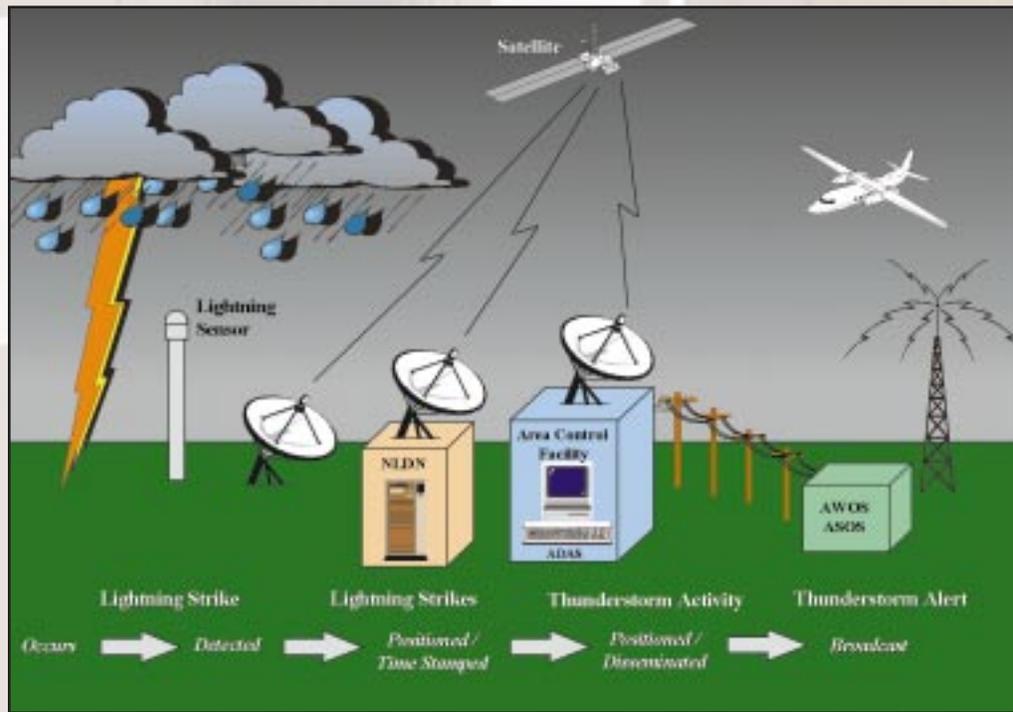
The purpose of the ALDARS project was to eliminate manual observation of lighting at



airports by having the ADAS collect, process, and disseminate the NLDN data to the airport's AWOSs and other NAS subsystems. During the ALDARS project, the ADAS was also modified to generate METAR format weather messages and to add the ITWS interface capability. The modifications necessary for the ALDARS project were incorporated into the original ADAS; and the Development, Test, and Evaluation (DT&E) and the Operational Test and Evaluation (OT&E) were completed. The ALDARS capable ADAS was delivered to the first key site in July 1998 and to the remaining ARTCCs in September 1998.

### **ACCOMPLISHMENTS**

Testing of the original ADAS was completed in April 1994. ACT-320 supervised the DT&E effort and performed OT&E on this system and was responsible for finding and aiding in the resolution of numerous critical problems with the ADAS. Once verification was made that these problems were resolved and all requirements had been properly implemented, the ADAS was deployed at all 22 ARTCCs. Subsequently, all of those ADASs have been commissioned. Development of the ALDARS-capable ADAS was completed in the first quarter of 1997. Under ACT-320 supervision, the following have been completed:



- DT&E 1 (April 1997)
- DT&E 2 (December 1997)
- OT&E 1 (October 1997)
- OT&E 2 (February 1998)
- OT&E Final Test Report (May 1998)

Since ADAS/ALDARS contains date dependency calculations, it was necessary to upgrade the UNIX Operating System (OS) platform and the ADAS/ALDARS software to be Year 2000 (Y2K) compliant. Hence, the OS and ADAS/ALDARS upgrades were made and DT&E was performed in August 1998. Subsequently, ACT-320 has performed or completed:

- Y2K OT&E (August-September 1998)
- Y2K OT&E Test Report (September 1998)

#### FUTURE WORK

- The ADAS/ALDARS contractor will generate a final software build and DT&E will be completed on this build in November 1998.
- ACT-320 will complete the OT&E on the final build by the end of December 1998. This build is necessary to incorporate software modifications for all remaining open Program Trouble Reports (PTRs) that were generated during previously conducted OT&E.

- The final software build will be released to all 22 ARTCCs no later than March 1999.
- ACT-320 will continue to provide technical and test support to AOS-540 as they maintain and modify the ADAS/ALDARS software.
- ACT-320 will continue to support the WARP and ITWS programs, and will develop test plans and procedures for testing the ADAS / WARP and ADAS / ITWS interfaces. Once these systems are developed, assistance will be provided for the OT&E testing of these interfaces.

For additional information regarding the AWOS Data Acquisition System/Automated Lightning Detection and Reporting System programs, contact:

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