

Field Demonstration Plan for AWPAG LogoSense Firmware V3.61 and Orifice Heater Controller V2.1 EPROM Upgrades

I. Introduction/Background

The National Weather Headquarters (WSH) Office of Operational Systems (OOS), Field Systems Operations Center (FSOC), Test and Evaluation Branch (W/OPS24) will conduct a two week "Field Demonstration" (Field Demo) for the AWPAG LogoSense Firmware V3.61 and the Orifice Heater Controller V2.1 EPROM upgrades.

LogoSense V3.61 was developed to:

- Change the "hard-coded value" inside the current version of the LogoSense ring heater controller's heater low temperature cut-off (18°F) to be programmable to any desired temperatures below 30°F.
- Eliminate false tips due to very long constant ambient temperature gradient algorithm problems.
- Enhance accuracy of reported value during extremely light precipitation events spanning more than 24 hours.

Orifice Heater Controller V2.1 was developed to:

- Allow programmable orifice heater low temperature cut-off value to be used to control the orifice heater.

These changes were approved for operational testing (System Test and Field Demo) on November 14, 2008, by the ASOS Test Review Board (ATRB) after presentation of the development test results by the ASOS Project Improvement project manager (W/OST31). The Project was put "on hold" pending an action given to the Observing Branch (W/OPS22) to coordinate a policy decision on what temperature should be allowed for the new programmable low temperature cut-off threshold for the orifice heater. The group finally agreed upon low temperature threshold value will be 9 deg F. All Field Demo sites will set the low temperature cut off to 9 °F.

A Request for Change (RC) (ASOS RC 11928) for this Field Demo was submitted by OST11 and approved for the Field Demo to begin.

A System Test was successfully conducted at the Sterling Facility Support Center (SFSC), Sterling, VA, and NWS Training Center, Kansas City, MO, in early September and the results were presented to the ATRB on September 29, 2009. The Field Demo plan was also presented to and approved by the ATRB on the same day. The Field Demo will take place at a total of ten ASOS sites representing all six NWS regions.

II. Test Objectives

The test objectives of this Field Demo will be to:

- a) Verify the draft ASOS Modification Note 94 (Installing Instruction for LogoSense controller firmware V3.61 and Orifice Heater Controller V2.1 EPROM)

CRITERIA: The draft ASOS Modification Note 94 (Installing Instruction for LogoSense controller firmware V3.61 and Orifice Heater Controller V2.1 EPROM) is complete and accurate.

- b) Verify AWPAG operation is not negatively affected.

CRITERIA: The AWPAG passes all diagnostic tests at the sensor, and diagnostics tests at the OID sensor maintenance page.

- c) Verify the ASOS operation is not negatively affected.

CRITERIA: The interfaces between AWPAG/ASOS are working properly. AWPAG data are correctly reported in the Operator Interface Device (OID) one-minute observation, 5-minute page, 12-hour archive page, METAR/SPECIS, and AWPAG SYSLOG messages are generated correctly.

III. Test Sites, Site Focal Points, and Regional Focal Points

The list of Field Demo sites and the NWS sites focal points follows:

Site	NWS Region	NWS site Focal Point
Buffalo, NY (BUF)	Eastern	Katherine Andolina
Caribou, ME (CAR)	Eastern	J.L. Winger, Bill Desjardins
Jackson, MS (JAN)	Southern	Michael Ryan
Jacksonville, FL (JAX)	Southern	Shane Still
Grand Forks, NE (GFK)	Central	Michael Lukasz
Cheyenne, WY (CYS)	Central	Mike Gillen
Tucson, AZ (TUS)	Western	Dennis Baron
Fairbanks, AK (FAI)	Alaska	Randy Davis
Juneau, AK (JNU)	Alaska	Kim Custer, John Lindsay
Hilo, HI (ITO)	Pacific	Steve Butler

The NWS Regional Focal Points are:

Eastern Region: Tim Rutkowski
 Southern Region: Lew Harrington
 Central Region: Duane Wilkinson
 Western Region: Son Nguyen
 Alaska Region: Don Bolton
 Pacific Region: John Bush

IV. Field Demo Kit

John Monte (OST 37) will be sending out the following information needed for the Field Demo via FedEx to each of the ten sites participating in the Field Demo:

- 1) Mod Note 94
- 2) A CD containing AWPAG LogoSense Firmware V3.61
- 3) AWPAG Ring Heater Orifice Controller Firmware V2.1 (EPROM)

V. Test Conduct

Since the limited changes affect only AWPAG, and the Office of Science and Technology (OS&T) successfully completed development tests for the fixes listed in the introduction during the winter of 2007-2008, the Field Demo will have limited scope. OPS24 will dial into the ten Field Demo sites to obtain the SYSLOGS, METAR/SPECI's, 5 minute observations, and 12 hour archive from each site, and review the SYSLOGS for any large increase in AWPAG messages in the SYSLOGS during the two week Field Demo. OPS24 will pay particular attention to sites with precipitation during the two week demo.

During the two week Field Demo, the Electronic Technician (ET) in conjunction with the NWS site focal points will provide comments on Mod Note 94 to OPS24. OPS24 will pass any comments received from the Field Demo sites to the Maintenance Branch (OPS12). In addition, the NWS site focal points will report any problems with AWPAG or ASOS operation to the Field Demo Test Director (Khien Nguyen of OPS24) and Joe Fiore of OPS24. If there are any major issues found during the Field Demo, if needed, a tele-conference meeting between NWS HQ, the NWS site focal points, and the NWS regional focal points will be held prior to the end of the two week Field Demo. If there are problems noted in the SYSLOG or noted by the NWS site focal points, they will be analyzed by OPS24, with help from OPS22 and OST 31 when needed.

V. Test "Wrap Up"

At the conclusion of the two week Field Demo, a "wrap up" meeting will be held by OPS24. At the "wrap up" meeting for the Field Demo, the group will make a recommendation to the ASOS Test Review Board (ATRB) on whether to proceed to national deployment (stocking the AWPAG firmware at NLSC for use at any operational site, especially those sites with instances of AWPAG issues addressed in the firmware upgrades) of these AWPAG firmware upgrades.

If the two week Field Demo is successful, the new AWPAG firmware will remain in place at the ten Field Demo Sites. If you have any questions you can contact the Field Demo test director: Khien Nguyen, W/OPS24 at 301-713-0326 x 177, (khien.nguyen@noaa.gov) or Joe Fiore, W/OPS24 at 301-713-0326 x 119, (joseph.fiore@noaa.gov).