



U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric
Administration
NATIONAL WEATHER SERVICE
1325 East-West Highway
Silver Spring, Maryland 20910-3283

MEMORANDUM FOR: Distribution

FROM: W/OPS2 – John Van Kuren (signed January 3, 2008)

SUBJECT: Initiation of the Operational Test and Evaluation (OT&E) for
Automated Surface Observing System (ASOS) Software
Version (V) 2.79E

The ASOS V2.79E Acquisition Control Unit (ACU) software has been designed to mitigate some of the problems noted at sites with the Vaisala Ice-Free Wind (IFW) sensor and earlier ACU software versions. V2.79E implements fixes designed to reduce the number of unreasonable wind speed occurrences (by eliminating a visibility sensor checksum error which may cause overwriting of IFW data in the ACU memory), performs 5-second/3-second wind speed quality control, and reduces the number of “Serial Input/Output Transmission Error” messages in the SYSLOG. With these exceptions, V2.79E is identical to V2.79D.

A V2.79E System Test (ST) has been successfully completed using test ASOS systems at the Sterling Research and Development Center, Sterling, VA. During the ST, V2.79E regression testing confirmed ASOS functionality and proper interfacing with both National Weather Service and Federal Aviation Administration communications/display systems.

The V2.79E OT&E plan is posted at:

http://www.nws.noaa.gov/ops2/ops24/documents/asos_V2-79E.htm

V2.79E software will be distributed to the OT&E Site Focal Points during the first week of January 2008 and the Maintenance Branch will provide installation instructions. Installation at the following sites should begin during the week of January 7, 2008:

Eastern Region

KBDL Windsor Locks, CT
KBOS Boston, MA
KFVE Frenchville, ME
KGSP Greer, SC
KRIC Richmond, VA

Southern Region

KGDP Guadalupe Pass, TX
KGUY Guymon, OK
KMEM Memphis, TN



Central Region

KANJ Sault Ste. Marie, MI
KGRB Green Bay, WI
KGRR Grand Rapids, MI
KTOP Topeka, KS

Western Region

KGEG Spokane, WA
KSFO San Francisco, CA
KSLC Salt Lake City, UT

Alaska Region

PANC Anchorage, AK

Pacific Region

PHTO Hilo, HI

V2.79E is also being provided for installation at an additional seven sites during the OT&E to allow collection of 5-second wind data for the development of datasets for future software testing (Installation at these sites is not required for completion of the OT&E):

AOH Lima, OH
LXV Leadville, CO
PIR Pierre, SD
AAF Apalachicola, FL
HOT Hot Springs, AR
MTH Marathon, FL
DRA Mercury, NV

Evaluation of ASOS performance at the OT&E sites by NWS Headquarters, on-site, or nearby staff will continue for approximately six weeks.

During the OAT, a Test Review Group, made up of representatives from Observing Services Division (OS7), Hydrologic Services Division Support Branch (OS32), Maintenance Branch (OPS12), Observing Systems Branch (OPS22), Telecommunication Gateway Operations Branch (CIO12), NWS ASOS Regional Focal Points, and FAA representatives will evaluate any reported problems as well as overall performance.

At the completion of the OT&E, the Test Director will provide test results and an implementation recommendation to the ASOS Configuration Control Board Chair.

If you have any questions or comments, please contact the Test Director:

Jerald Dinges
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OPERATIONAL TEST AND EVALUATION PLAN

For
*Automated Surface Observing System
(ASOS)*

Software Version 2.79E

December 2007

**U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Weather Service
Office of Operational Systems
Field Systems Operations Center
Test and Evaluation Branch**

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Attachment 1	V2.79E OT&E Sites
Attachment 2	WSH, Field, and TRG Contacts
Attachment 3	ASOS Test Trouble Report (TTR) Form

Acronyms

ACCB	ASOS Configuration Control Board
ACE-IDS	ASOS Controller Equipment – Information Display System
ACU	Acquisition Control Unit
ADAS	AWOS/ASOS Data Acquisition System
ALDARS	Automated Lightning Detection and Reporting System
AOMC	ASOS Operations and Monitoring Center
ASOS	Automated Surface Observing System
ATIS	Automatic Terminal Information System
AWIPS	Advanced Weather Interactive Processing System
AWPAG	All-Weather Precipitation Accumulation Gauge
DCM	Direct Command Mode
ET	electronics technician
FAA	Federal Aviation Administration
GTA	Ground-to-Air
HTB	Heated Tipping Bucket Rain Gauge
IFW	Ice-Free Wind
METAR	Aviation Routine Weather Report
Mod Note	NWS Engineering Modification Note
NWS	National Weather Service
OT&E	Operational Acceptance Test
OID	Operator Interface Device
PAMS	Product Availability Monitoring System
PT	Part Time
RVR	Runway Visual Range
SCA	Single Cabinet ASOS
SHEF	Standard Hydrologic Exchange Format
SIO	Serial Input/Output
SPECI	Aviation Selected Special Weather Report
ST	System Test
TRG	Test Review Group
TTR	Test Trouble Report
V	Version
WSH	NWS Headquarters
WSP	Weather Systems Processor

Part I: Overview

1. Introduction

A variety of problems have been noted at Automated Surface Observing System (ASOS) sites with the Vaisala Ice-Free Wind (IFW) sensor and Acquisition Control Unit (ACU) software Version (V) 2.79D (01/11/07). As part of the effort to resolve the problems, V2.79W (10/29/07) diagnostic software, which mitigates some of the problems and collects diagnostic data, is installed at a small number of selected sites. Since the collection of diagnostic data, analysis, and development of software fixes is expected to require some months, however, V2.79E (11/26/07) has been developed as an interim solution for some of the known problems.

Based on V2.79D, the V2.79E software implements fixes designed to:

Reduce the number of unreasonable wind speed occurrences by eliminating a visibility sensor checksum error which may cause overwriting of IFW data in the ACU memory.

Perform 5-second/3-second wind speed quality control (presence of wind data, range check, corrupted values) – rejecting the entire suite of 5/3-second wind data if it is suspect.

Reduce the number of “Serial Input/Output (SIO) Transmission Error” messages in the SYSLOG. Although the SIO errors do not impact observations, the SYSLOG messages are a nuisance.

V2.79E also includes some of the diagnostic capabilities of the V2.79W wind diagnostic software:

Archiving of the 5-second wind data, “WT” commands, and wind speed quality control data. Fourteen hours of data, not viewable on the Operator Interface Device (OID) but available via Direct Command Mode (DCM), is archived for analysis.

With these exceptions, V2.79E is identical to V2.79D.

2. Operational Test and Evaluation (OT&E) Purpose

ASOS observations and products must support both National Weather Service (NWS) forecast/warning operations and Federal Aviation Administration (FAA) aviation operations effectively. The OT&E is designed to confirm satisfactory ASOS performance at representative field sites with the V2.79E software installed. Before the operational deployment of the V2.79E software can be recommended, the OT&E must provide final confirmation of the acceptability and/or performance of the following:

- o Installation procedures
- o Interfaces with both NWS and non-NWS systems
- o Operational stability and availability
- o Operator interfaces
- o Production, transmission, and archiving of observations/products

3. Background

3.1 System Description

Using data from an array of sensors, information from interfaces with other NWS or FAA systems, and observer input, ASOS formulates and transmits Aviation Routine Weather Reports (METAR) and Aviation Selected Special Weather Reports (SPECI); Standard Hydrologic Exchange Format (SHEF) reports; and other products. With the V2.79E software installed, ASOS will support the DTS1 dewpoint sensor, the Vaisala 425 IFW sensor, and the All-Weather Precipitation Accumulation Gauge (AWPAG), as well as the FAA's Weather Systems Processor (WSP), and ASOS Controller Equipment – Information Display System (ACE-IDS) interfaces.

3.2 Test History

The V2.79E System Test (ST) began on November 30, 2007, using test ASOS systems at the NWS Sterling Research and Development Center in Sterling, Virginia, and was completed successfully on December 21, 2007. The ST confirmed system stability, general ASOS functionality (operator interfaces, generation/transmission of observations, interfacing with NWS and non-NWS systems, etc.), and the suitability of V2.79E for installation at OT&E sites.

4. OT&E Objectives

The OT&E must confirm the following at field sites:

Stable ASOS operation - The availability of ASOS observations/products and the frequency of warmstarts must be consistent with or improved over performance with previous software versions.

Operator interfaces - ASOS must respond properly to operator commands.

Production, transmission, and archiving of observations/products - Observations must be representative of conditions (within the limitations of the ASOS sensors), correctly formatted, archived properly by ASOS, and transmitted successfully on NWS and FAA communications systems.

Interfacing with both NWS and non-NWS systems - ASOS must correctly transmit information for display on the FAA ACE-IDS. ASOS must correctly incorporate FAA Runway Visual Range (RVR) information and thunderstorm information from the FAA Automated Lightning Detection and Reporting System (ALDARS) system into the ASOS METAR/SPECI reports.

More detailed evaluation criteria are provided in Part II, Section 4.1.

At the completion of the evaluation, the Test Director will provide results and a Test Review Group (TRG) implementation recommendation to the ASOS Configuration Control Board (ACCB) Chair (See Section 6, OT&E Management).

5. OT&E Policies

The ASOSs at the OT&E sites are operational and provide products (METARs, SPECIs, SHEF reports, etc.) which are critical to both NWS forecast/warning operations and FAA aviation operations. At any time during the OT&E, if the Site Focal Point judges ASOS performance to be unacceptable, he/she is authorized to have the electronics technician (ET) re-install the previous software version to ensure satisfactory support of NWS and FAA operations.

5.1 Assumptions and Limitations

Sites with a wide variety of system configurations and operational scenarios were selected for participation in the OT&E. There may, however, be some unusual configurations and/or scenarios which are not represented.

The OT&E is designed to confirm the overall performance of ASOS with V2.79E software installed. It is not intended as a definitive evaluation of ASOS sensor performance. Although the OT&E sites are distributed throughout the United States and are expected to experience a wide variety of weather conditions during the evaluation period, some phenomena may not occur at any of the sites. Sensor performance was confirmed during qualification and environmental testing.

Since the ASOSs participating in the OT&E are operational, observers are not being asked to perform any actions (augmentation, edit, etc.) other than those required by their routine operations. As a result, some observer actions may not be exercised during the OT&E. To the extent possible, however, all observer actions were exercised during the ST.

5.2 Software Installation

The NWS ET who normally maintains the ASOS will install V2.79E software using instructions provided by the Maintenance Branch (OPS12). Installation is not to occur at an FAA-staffed or FAA contract-staffed ASOS without agreement by the local FAA management to have the observers provide manual backup for METARs/SPECIs during the period when ASOS cannot generate and disseminate products. Since all of the OT&E sites have V2.79B, V2.79C, V2.79D, or V2.83 installed and there are no changes to operational functionality, OID displays, or observer procedures with V2.79E, no FAA training of observers is required before installation of the software.

5.3 Prerequisites and OT&E Commencement

Satisfactory completion of the ST is a prerequisite for the OT&E and the OT&E will commence with the first installation of V2.79E at a field site.

5.4 System Operation

All test site ASOSs are commissioned and will continue to provide official observations/products throughout the evaluation period. No changes in station operations are required. The only added workload is the documentation and reporting of any problems encountered.

5.5 System Support

The normal maintenance policy will apply at the OT&E sites with one exception. If the Site Focal Point judges ASOS performance to be unacceptable and believes V2.79E may be the cause, he/she is authorized to have the ET re-install the previous software version to ensure continued support of NWS and FAA operations.

6. OT&E Management

The field/operational aspects of the OT&E will be managed by the Office of Operational Systems, Field Systems Operations Center, Test and Evaluation Branch (OPS24). The Test Director is:

Jerald Dinges
Chief, Test and Evaluation Branch (OPS24)
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e-mail: Jerald.Dinges@noaa.gov
Fax: 301-713-0912

An OT&E TRG, made up of representatives from:

OS7	Observing Services Division
OS32	Hydrologic Services Division Support Branch
OPS12	Maintenance Branch
OPS22	Observing Systems Branch
CIO12	Telecommunication Gateway Operations Branch
ERH	Eastern Region Headquarters
CRH	Central Region Headquarters
SRH	Southern Region Headquarters
WRH	Western Region Headquarters
ARH	Alaska Region Headquarters
PRH	Pacific Region Headquarters
FAAHQ	FAA Terminal Services

will review and adjudicate any problems reported during the OT&E in accordance with NWS Instruction 30-302, Operational Test and Evaluation Process (July 30, 2007) at: <http://www.weather.gov/directives/>. Adjudication of problems will be coordinated through the use of e-mail by the Test Director.

6.1 National Weather Service Headquarters (WSH) Roles and Responsibilities

OPS24 is responsible for preparation and distribution of the OT&E plan; advance and day-to-day coordination of test activities; and preparation of a report which documents results and presents recommendations.

OPS24 is responsible for providing software on compact disc (CD) to the Site Focal Point responsible for each test site.

OPS12 is responsible for providing installation and Engineering Maintenance Reporting System instructions to the ETs.

OPS22 is responsible for establishing pass/fail criteria for IFW-related problems.

The ASOS Operations and Monitoring Center (AOMC) is responsible for providing ASOS performance data reports as required.

WSH personnel are responsible for participating in TRG evaluation of any performance problems encountered during the OT&E.

6.2 Regional Headquarters Roles and Responsibilities

Regional Headquarters ASOS Focal Points are responsible for ensuring test site staff are prepared to conduct the OT&E, for resolving day-to-day operational problems related to the OT&E, and for participating in the TRG activities.

6.3 Test Site Focal Point Roles and Responsibilities

Test site Focal Points are responsible for coordinating site performance monitoring, for documenting problems on Test Trouble Report (TTR) forms (Attachment 3), and for reporting problems/results to the Test Director. For sites with FAA or contract staff, the responsibility for evaluation may be assigned to the on-site staff (at the discretion of the NWS Region and with the agreement of the FAA) but the NWS site Focal Point remains responsible for reporting problems to the Test Director.

7. OT&E Review Process

Any software-related problems will be reported (by phone or email) to the Test Director upon occurrence and documented on TTR forms (Attachment 3). Fax or email is to be used to submit TTR forms to the Test Director. Each TTR will be forwarded to the TRG members for review and comment.

At the conclusion of the evaluation period, the Test Director will review the performance of V2.79E with the TRG in order to formulate an implementation recommendation. The Test Director will provide test results and an implementation recommendation to the ACCB Chair at the completion of the OT&E.

Part II: Methodology

1. Introduction and Approach

During the OT&E, V2.79E software will be installed at 17 commissioned field sites and ASOS performance will be evaluated by on-site or nearby field staff. The results of the evaluation will form the basis for an implementation decision by NWS management. V2.79E may also be installed at an additional seven sites during the OT&E to allow collection of 5-second wind data for use in dataset development for future software testing (installation at these sites is not required for completion of the OT&E).

2. Critical Operational Issues for Evaluation

To determine the suitability of V2.79E for operational use at commissioned sites, the following must be evaluated:

- o Installation procedures and documentation
- o Interfacing with both NWS and non-NWS systems
- o Software stability
- o Operator interfaces
- o Production and transmission of satisfactory observations and products
- o New capabilities and fixes

3. OT&E Sites

The V2.79E OT&E sites have been selected to include the following ASOS operational scenarios:

- Full-time staffed operations
- Part-time staffed operations
- Unstaffed operations

and system configurations which include various combinations of the following:

- Single Data Collection Platform (DCP) configuration
- Multiple DCP configuration

- Single Cabinet ASOS (SCA) system configuration
- Backup sensors (visibility and/or sky)
- Meteorological discontinuity sensors (visibility and/or sky)
- Backup AND meteorological discontinuity sensors
- Single site thunderstorm sensors
- Advanced Weather Interactive Processing System (AWIPS) communications
- AWOS/ASOS Data Acquisition System (ADAS) communications
- Automated Lightning Detection and Reporting System (ALDARS) thunderstorm capability
- Freezing rain sensors
- DTS1 dewpoint sensors
- IFW sensors
- Belfort wind sensors
- AWPAG precipitation sensors
- Heated Tipping Bucket (HTB) precipitation gauge
- FAA Ground-to-Air (GTA) radio
- Automatic Terminal Information System (ATIS)
- ACE-IDS interface
- WSP interface

The OT&E sites and their characteristics are listed in Attachment 1.

4. OT&E Methodology

Since all field ASOSs are operational, testing will be limited to performance monitoring during normal operations. No on-site test activities other than the routine monitoring of observations/products and reporting/documenting of any ASOS problems are required.

- o The NWS ASOS ET responsible for maintenance of the site will install the V2.79E software using procedures provided by OPS12.
- o The Site Focal Point (identified in Attachment 2) will monitor ASOS performance, review observations as required, confirm (with the FAA) correct WSP, ACE-IDS, and RVR performance, report any problems to the Test Director, and document the problems on TTR forms (Attachment 3) for submission to the Test Director.
- o The AOMC will report any cases when test site ASOS observations/products do not arrive at the NWS Telecommunication Gateway as expected, and provide IFW-related Trouble Tickets (weekly) to the Test Director.
- o Monthly summary data for one calendar month of operation will be evaluated for several sites.
- o OPS24 will coordinate the TRG evaluation of any reported problems.

4.1 Evaluation Criteria

Specific criteria for the operational suitability of the V2.79E software are:

- o Installation procedures and documentation - Documentation (installation instructions) must be clearly written, complete, and easy to follow (subjective evaluation by ETs and test site staff).
- o Interfacing with both NWS and non-NWS systems must be correct (including but not limited to):
 - Incorporation of FAA Runway Visual Range (RVR) information into the ASOS METAR/SPECI reports
 - Incorporation of thunderstorm information from the FAA's ALDARS system into the ASOS METAR and SPECI reports
 - Correct information on the FAA WSP displays
 - Correct information on the displays interfaced to the FAA ACE-IDS
 - Correct transmission of information on the GTA radio
 - Correct dissemination of information on the ATIS
- o Stable ASOS operation - The spontaneous system restart (i.e., warmstart) frequency must be consistent with or improved over the site's past history.
- o Operator interfaces – ASOS must respond properly to operator commands.
- o Production, transmission, and archiving of observations/products – Observations must be representative of conditions (within the limitations of the ASOS sensors), correctly formatted, transmitted successfully, and archived in the ASOS data base (evaluation by on-site and/or nearby NWS staff).
- o New Capabilities and Fixes – The archived 5-second wind data, “WT” commands, and wind speed quality control data must be available through the DCM. Priority 1 and Priority 3 IFW-related Trouble Tickets will be tabulated weekly. The IFW Trouble Ticket pass/fail criteria established by OPS22 will be used.

4.1.1 Tracking Problems and Deficiencies

The test site Focal Points will report any software-related ASOS problems to the Test Director, documenting the problems on TTR forms (provided as Attachment 3). The Test Director will review the weekly missing observation/product reports provided by the AOMC.

4.1.2 Evaluation of Test Results

Each problem reported by site Focal Points will be evaluated by the TRG (consultation with test site Focal Points will take place if necessary) to determine criticality and a suitable course of action.

4.2 Installation

The ASOS ETs will install the software at their earliest convenience after receiving authorization from the Test Director, using CDs provided by OPS24 and instructions provided by OPS12 . Any installation problems with the system, installation instructions, software, procedures, etc. are to be reported **immediately** to the regional ASOS Focal Point and the Test Director.

4.3 Test Conduct

All of the test ASOSs are commissioned and provide the official observations/products for the site. Routine ASOS problems should be reported according to established procedures. If the problem is judged to be software-related, however, it is to be reported immediately to the Test Director and documented as described in Section 4.3.1. At any time during the OT&E, if the test site Focal Point judges ASOS performance to be unacceptable, he/she is authorized to have the ET re-install the previous software to ensure continued support of NWS and FAA operations.

4.3.1 Test Site Actions

During routine operations, ASOS observations will be monitored/reviewed by the test site Focal Point. For any occasions when the ASOS does not operate as expected, the problems should be reported to the Test Director:

Jerald Dinges
Test and Evaluation Branch (OPS24)
301-713-0386 x160
Jerald.Dinges@noaa.gov
Fax: 301-713-0912

Problems should be thoroughly documented on TTR forms (provided as Attachment 3) and faxed or mailed to the Test Director. Copies of screens and data printouts (ASOS and/or AWIPS, as appropriate) should be included to provide clarification whenever possible.

4.3.1.1 Procedure: Real-time Monitoring of Observations

Monitor observations/products as they are generated by ASOS, paying particular attention to any observations containing remarks or additive data (e.g., precipitation amounts, maximum/minimum temperatures, and three-hour pressure changes) and observations generated during periods when failed sensors are being backed up (either by the observer or the backup sensors). For observations containing remarks or additive data, review the 5-minute observations and the 1-minute data to verify their appropriateness and accuracy of the remarks. Periodically call the FAA voice phone and verify the observations (including the required remarks) are being voiced properly.

4.3.1.2 Procedure: Review of Observations

Periodically review the observations in the same manner in which an observer would check the observations taken during the previous shift. For example, check temperature, dewpoint, wind shifts, pressure remarks, variable ceilings, and visibilities. Determine whether specials were taken properly. Evaluate the consistency of precipitation and temperature data from hourly data through 3-hour, 6-hour, daily, and monthly data. Specifically:

- o Hourly/Special Observations -- During each shift, review the ASOS METARs and SPECIs from the previous shift.
- o Daily Summaries -- Once per day, review the daily summary page to verify consistency with the additive data appearing in the hourly observations. Note: if the daily summary has been manually edited, agreement cannot be expected.
- o Monthly Summaries -- Periodically review the monthly (to date) page to verify consistency with the daily pages.

4.3.1.3 Procedure: Evaluation of FAA Interfaces

At staffed sites with RVR, periodically confirm proper incorporation of RVR in the ASOS METARs and SPECIs. At sites with ADAS/ALDARS, periodically verify proper incorporation of ALDARS thunderstorm information into the ASOS METAR and SPECI reports. Coordinate with local FAA representatives to verify correct performance of RVR, ACE-IDS, WSP, ATIS, and GTA radio interfaces.

4.3.2 Regional ASOS Focal Point Actions

The regional ASOS Focal Points are responsible for the resolution of day-to-day operational problems and for participation in the TRG.

4.3.3 WSH Actions

The Test Director will provide/coordinate technical assistance to the regional and site Focal Points as required, coordinate the final TRG performance review, provide test results to the ACCB Chair, and prepare a final report. During the evaluation period, OPS24 will use the Product Availability Monitoring System (PAMS) to archive OT&E site data for analysis. OPS24 will also use National Climatic Data Center , Asheville, NC, archive data as required for data analysis during the OT&E.

4.3.4 AOMC Actions

During the evaluation period, the AOMC will confirm the ability to support the test sites. Results of the AOMC evaluation will be provided to the Test Director by the end of the evaluation period.

5. OT&E Schedule

The OT&E will begin immediately after the conclusion of a successful ST. Installation of V2.79E at OT&E sites is expected to begin during the week of January 7, 2008, and evaluation will continue until mid-February 2008. However, an minimum of two weeks monitoring after V2.79E installation is required for each site.

6. Test Materials

The V2.79E software will be provided (by OPS24) to the Site Focal Points on CD. Installation instructions will be provided (by OPS12) to the ETs. The V2.79E TTR forms are provided as an attachment to this plan.

7. Post-Test Activities

Unless a decision to the contrary is made by the TRG, V2.79E will remain installed at the test sites at the conclusion of the evaluation period.

Part III: Test Reports

The Test Director will provide progress reports to all participants during the evaluation period and provide the ACCB Chair with a summary of results and an implementation recommendation at the end of the OT&E. In addition, the Test Director will prepare a final OT&E report which fully documents evaluation results.

V2.79E OT&E Sites

Site

Relevant Site Characteristics

NWS Eastern Region

BDL Windsor Locks, CT	2 DCPs, met discontinuity and backup sensors, RVR, WSP interface, FT staff
BOS Boston, MA	3 DCPs, met discontinuity and backup sensors, RVR, ACE-IDS interface, FT staff
FVE Frenchville, ME	1 DCP, GTA radio, unstaffed
GSP Greer, SC	2 DCPs with remote wind, PT staff
RIC Richmond, VA	1 DCP, RVR, ACE-IDS interface, FT staff

NWS Central Region

ANJ Sault Ste. Marie, MI	SCA with nine local sensors, thunderstorm sensor, unstaffed
GRB Green Bay, WI	1 DCP, backup sensor, PT staff
GRR Grand Rapids, MI	2 DCPs, met discontinuity, WSP interface
TOP Topeka, KS	1 DCP, GTA radio, PT staff

NWS Southern Region

GDP Guadalupe Pass, TX	SCA w/DCP & OID, unstaffed
GUY Guymon, OK	SCA, GTA radio, unstaffed
MEM Memphis, TN	3 DCPs, met discontinuity, RVR, FT staff

NWS Western Region

GEG Spokane, WA	1 DCP, RVR, WSP interface, FT staff
SFO San Francisco, CA	3 DCPs, met discontinuity and backup sensors, RVR, ACE-IDS interface, FT staff
SLC Salt Lake City, UT	2 DCPs, backup sensor, RVR, FT staff

NWS Alaska Region

PANC Anchorage, AK

2 DCPs, met discontinuity sensor, RVR, FT staff

NWS Pacific Region

PHTO Hilo, HI

1 DCP, ACE-IDS interface, FT staff

ASOS V2.79E OT&E Site Characteristics and Interfaces

SID	Name	Staffing	DCPs	Multiple Sensors	ZR	Wind	Precip	Comms	TSTM/ ALDARS	GTA/ ATIS	ACE	RVR	WSP	S/W Version
BDL	Windsor Locks, CT	FT	2 DCP	M/B	ZR	IFW	AWPAG	ADAS	ALDARS	ATIS	---	RVR	WSP	2.79D
BOS	Boston, MA	FT	3 DCP	M/B	ZR	IFW	AWPAG	ADAS	ALDARS	ATIS	ACE	RVR	---	2.79D
FVE	Frenchville, ME	---	1DCP	---	ZR	IFW	HTB	ADAS	ALDARS	GTA	---	---	---	2.79D
GSP	Greer, SC	PT	2 DCP	remote wind	ZR	Belfort	AWPAG	ADAS	ALDARS	ATIS	---	---	---	2.79D
RIC	Richmond, VA	FT	1 DCP	---	ZR	IFW	AWPAG	ADAS	ALDARS	ATIS	ACE	RVR	---	2.79D
ANJ	Sault Ste. Marie, MI	---	SCA	---	ZR	IFW	AWPAG	DIAL	TSTM	---	---	---	---	2.83
GRB	Green Bay, WI	PT	1 DCP	B	ZR	IFW	AWPAG	ADAS	ALDARS	ATIS	---	---	---	2.79D
GRR	Grand Rapids, MI	FT	2 DCP	M	ZR	IFW	AWPAG	ADAS	ALDARS	ATIS	---	---	WSP	2.79D
TOP	Topeka, KS	PT	1 DCP	---	ZR	IFW	AWPAG	ADAS	ALDARS	GTA	---	---	---	2.79D
GDP	Guadalupe Pass, TX	---	SCA w/DCP& OID	---	ZR	IFW	AWPAG	AWIPS DIAL	---	---	---	---	---	2.83
GUY	Guymon, OK	---	SCA	---	---	IFW	AWPAG	ADAS	ALDARS	GTA	---	---	---	2.79D
MEM	Memphis, TN	FT	3 DCP	M	---	Belfort	AWPAG	ADAS	ALDARS	ATIS	---	RVR	---	2.79D

SID	Name	Staffing	DCPs	Multiple Sensors	ZR	Wind	Precip	Comms	TSTM/ ALDARS	GTA/ ATIS	ACE	RVR	WSP	S/W Version
GEG	Spokane, WA	FT	1 DCP	---	ZR	IFW	AWPAG	ADAS	ALDARS	ATIS	---	RVR	WSP	2.79D
SFO	San Francisco, CA	FT	3 DCP	M/B	---	IFW	AWPAG	ADAS	ALDARS	ATIS	ACE	RVR	---	2.79D
SLC	Salt Lake City, UT	FT	2 DCP	B	ZR	IFW	AWPAG	ADAS	ALDARS	ATIS	---	RVR	---	2.79D
PANC	Anchorage, AK	FT	2 DCP	M	ZR	IFW	AWPAG	ADAS	ALDARS	ATIS	---	RVR	---	2.79D
PHTO	Hilo, HI	FT	1 DCP	---	---	IFW	AWPAG	ADAS	ALDARS	ATIS	ACE	---	---	2.79B

V2.79E may also be installed at an additional seven sites during the OT&E to allow collection of 5-second wind data for use in dataset development for future software testing:

AOH Lima, OH
LXV Leadville, CO
PIR Pierre, SD
AAF Apalachicola, FL
HOT Hot Springs, AR
MTH Marathon, FL
DRA Mercury, NV

Installation at these sites is not required for completion of the OT&E.

WSH, Field, and TRG Contacts

WSH Contacts

Jerry Dinges	Test and Evaluation Branch	301-713-0326 x160
Bryan Moore	Test and Evaluation Branch	301-713-0326 x176
Greg Dalyai	Maintenance Branch	301-713-1833 x147
Tony Leonardo	Maintenance Branch	301-713-1833 x120

FAA Contacts

Bing Huang	Terminal Services	202-385-8579
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Regional ASOS Focal Points

Eastern Region	Tim Rutkowski	216-265-2383
Central Region	Bob Brashears	816-268-3161
Southern Region	Joe Villescaz	817-978-7777 x127
Western Region	Rex Bernhart	801-524-5120 x244
Alaska Region	Jim Hunter	907-271-5124
Pacific Region	John Bush	808-532-6435

OT&E Site Focal Points

KAOH	Lima, OH	Curtis Brooks (at ILN)	937-383-0228
KBDL	Winsor Locks, CT	Michael Esip (at TAN)	508-823-2444 x228
KBOS	Boston, MA	Michael Esip (at TAN)	508-823-2444 x228
KFVE	Frenchville, ME	Thomas Raineri (at CAR)	207-492-0172
KGSP	Greer, SC	Frank Neiger	864-968-9695 x228
KRIC	Richmond, VA	Doug Jones (at AKQ)	757-899-4200
KANJ	Sault Ste. Marie, MI	Robert Weaver (at APX)	989-731-1194 x372
KGRB	Green Bay, WI	Rob Hoag	920-494-5845 x381
KGRR	Grand Rapids, MI	Eric Damron	616-949-0643 x 372
KLXV	Leadville, CO	Christopher Price (at PUB)	719-948-9429
KTOP	Topeka, KS	Michael Teer	785-232-1493 x 372
KPIR	Pierre, SD	Robert Baye (at UNR)	605-341-9271 x 382
KAAP	Apalachicola, FL	Don Parkerson (at TLH)	850-942-8835
KGDP	Guadalupe Pass, TX	Wayne Patterson (at MAF)	432-563-6217
KGUY	Guymon, OK	Ken Hunter (at AMA)	806-335-1835 x260
KHOT	Hot Springs, AR	Paul Siebenmorgen (at LIT)	501-834-9102
KMTH	Marathon, FL	Paul Schaafsma (at KKEY)	305-295-1316
KMEM	Memphis, TN	Dean Klimt	901-544-0413

KDRA	Mercury, NV	John Grznar (at VEF)	702-263-9746 x260
KGEG	Spokane, WA	Dwight Williams	509-244-0110 x260
KSFO	San Francisco, CA	Wayne Bailey (at MTR)	831-656-1715 x260
KSLC	Salt Lake City, UT	Greg Wallace	801-524-5710 x260
PANC	Anchorage, AK	Jim Hunter	907-271-5124
PHTO	Hilo, HI	Stephen Butler	808-987-6553

TRG Membership

OS7	Observing Services Division	James Heil
OS32	Hydrologic Services Division Support Branch	John Bradley
OPS12	Maintenance Branch	Tony Leonardo
OPS22	Observing Systems Branch	Rich Parry
CIO12	Telecommunication Gateway Operations Branch	Kevin Conaty
ERH	Eastern Region Headquarters	Tim Rutkowski
CRH	Central Region Headquarters	Bob Brashears
SRH	Southern Region Headquarters	Joe Villescuz
WRH	Western Region Headquarters	Rex Bernhart
ARH	Alaska Region Headquarters	Jim Hunter
PRH	Pacific Region Headquarters	John Bush
FAAHQ	FAA Terminal Services	Bing Huang

Test Trouble Report (TTR) Form

ASOS TROUBLE REPORT

TYPE/NO _____ LOCATION (SID)

TROUBLE REPORT TITLE

DATE/TIME DISCOVERED _____ ORIGINATOR

AFFECTED SUBSYSTEM _____ S/W VER V2.79E (11/26/07)

A. DESCRIPTION AND CAUSE OF PROBLEM:

B. MAINTENANCE CONSULTED?

___ YES ___ NO (WHY?)

C. PROBLEM NOTED ELSEWHERE?

___ YES (WHERE?) ___ NO

D. TECHNICAL DATA ATTACHED?

___ YES ___ PAGES

___ NO

APPROVED _____

DATE

