

ASOS CL31 Replacement Ceilometer System Test (ST)

MINUTES: CL31 ST “Kick-Off”/ Test Readiness Review Meeting - Test Review Group (TRG)

DATE: October 2, 2008

ATTENDEES:

TRG MEMBERS:

Jerald Dinges (W/OPS24 – Chair/Moderator)
Khien Nguyen (W/OPS24 - ST Director),
Joseph Fiore (W/OPS24 - Secretariat),
Greg Sikora, Joe Devost (W/OPS12)
Rick Parry, Chet Schmitt (W/OPS22)
John Monte (W/OST11) Project Manager
“ABSENT” (W/OS7)
Jerry Kranz (FAA Contractor)
Gerald “Wayne” Knight, Ron Heatherdale, Richard Swindler, et al. (U.S. Navy, SPAWARSYSCEN, Charleston, SC)
Dan Lester (NWS Central Region Headquarters)
Bob Born (USAF)
“ABSENT” [W/OICO12 - ASOS Operations Monitoring Center (AOMC)]

TEST SUPPORT PERSONNEL:

Hak Kim (NWS/OPS23)
Bob Retzlaff [NWS Training Center NWS Training Center (NWSTC), Kansas City, MO]
Jennifer Dover [OPS22 @ Sterling Field Support Center (SFSC), Sterling, VA]
Brian Rice (SAIC) – (SFSC)
Beth McNulty (W/OS23) - NWS Office of Climate, Water, and Weather
“ABSENT” (FAA Technical Center, Atlantic City, NJ)
“ABSENT” (FAA AOS Engineering Logistics Support Center, Oklahoma City, OK)

GUESTS:

Kevin Murray (NWS Eastern Region Headquarters – W/ER42)
Lewis Harrington (NWS Southern Region Headquarters – W/SR42)
Rex Bernhart (NWS Western Region Headquarters – W/WR42)

SUMMARY and ACTION ITEMS:

The CL31 Replacement Ceilometer ST Test Readiness Review (TTR) “kick off” meeting was held by teleconference at National Weather Service Headquarters (WSH), Silver Spring, MD on October 2, 2008. All but two TRG representatives were present at the meeting (i.e. NWS OCWWS and AOMC). The Office of Operational Systems (OOS), Field Systems Support Center (FSOC), Test and Evaluation Branch (NWS/OPS24) convened and moderated the meeting. The TRG reviewed the prerequisites for starting the CL31 Ceilometer Replacement ST to ensure they

are all completed before giving its approval to the start of ST. **At the conclusion of the meeting, the TRG consensus was to proceed with the ST.** Another main focus of the meeting was to ensure all required test materials and documentation required for each test site will be shipped no later than next week. Jerry Dinges asked each organization who will ship the test materials to include an itemized list of the contents. Each test site will use these inventory lists to verify the content of the received materials and equipment. No installations will begin until they have notified the ST Director they have received all expected materials.

The main functions of the TRG during the ST are: 1) Oversight of the ST with special focus on review and adjudication of problems {Test Trouble Reports (TTRs)] documented during the ST. These problems will be prioritized for fixing based upon their affect on ASOS as well as DOC/DOT/DoD service operations. The priority scheme is documented in the ST plan. Weekly TRG meetings are schedule for the duration of the ST. Khien Nguyen, ST Director, will oversee the coordination of the daily test activities; ensure TTRs are properly documented and entered in the TestTrack Pro data base; and present the TTRs to the TRG their action.

The next TRG meeting is scheduled for Thursday, October 9 at 2 pm EDT,

The highlights of the meeting include:

1. Jerry Dinges presented an overview of the actions leading up to the ST TRR meeting. The ASOS Test Review Board (ATRB) reviewed and approved the following test results presented by John Monte, CL31 Project Manager: 1) CL31 Specification Compliance Report; and, 2) the CL31 System Integration Test with ASOS Acquisition Control Unit (ACU) test firmware Version (V) 2.79S and Data Collection Platform (DCP) V2.0 EPROMs. The ATRB also approved commencement of the operational test phase for System Test upon completion of their review of the ST plan (review also included the NWS Regional ASOS focal points). The ST plan was officially distributed to the TRG just prior to the TRG meeting. Also presented to the ATRB was the concept of a meteorological comparison evaluation between the CT12K and CL31 ceilometers that will be conducted in parallel to the ST and Operational Test & Evaluation (OT&E). This was document in a draft plan and presented for ATRB review at the same time as the ST plan. The ATRB, and NWS regional ASOS focal points unanimously approved the concept of the evaluation. However, Jerry reported the “CT12K and CL31 Ceilometer Meteorological Comparison Evaluation Plan” is still a “DRAFT” until OPS24 incorporates comments received from the NWS project office (W/OST11) on Thursday, October 2 into the plan. Jerry explained the concept of the evaluation is not a test to determine which sensor is better but a means to document differences reported by the two sensors when interfaced to ASOS and reporting noteworthy differences to the NWS users through a general Technical Implementation Notice and Weather Forecast Office-issued Public Notification Statements prior to switching CL31 sensor as the operational ceilometer for ASOS. Noteworthy differences are those that might negatively the generation of Terminal Aviation Forecasts (TAF) or aviation services.

Jerry Dinges noted if any significant differences are documented between the CT12K and CL31 ceilometers during the meteorological comparison evaluation, the analyst team will try to explain those differences. However, if they cannot be explained and are deemed as adversely affecting the generation of TAFs or other aviation services, the team will submit these cases to the TRG as TTRs for adjudication and assignment of an IMPACT/PRIORITY scheme documented in the ST plan. Depending on the assigned IMPACT/PRIORITY ranking, the problem could suspend the OT&E until a fix is found. If the TRG cannot agree, the TRG may forward the problem to the ATRB for resolution.

The ST plan is available on the OPS24 website. The final "CT12K and CL31 Ceilometer Meteorological Comparison Evaluation Plan" will be available on the OPS24 website once it is completed.

2. The second item on the agenda was to review the prerequisites for the CL31 Replacement Ceilometer ST. All prerequisites in the ST plan were discussed, and some of the highlights include: Completion by OPS12 of the Final Draft NWS Engineering Modification Notes (Mod Notes) #80 and #92 for ST. OST12 is almost finished with the Mod Notes, however Hak Kim, W/OPS23, recommended a section be included in Mod Note #80 about pulling the jumper (and waiting 30 seconds to reinstall the jumper) on the memory card(s) in the ASOS Data Collection Platform (DCP) to assure all memory from the card is erased before installing the new V2.0 EPROMS. John Monte, W/OST11, agreed to help OST12 with this change to Mod Note #80. Hak also asked that Mod Note #80 state that V1.9 EPROMs be retained at the site in the event of a problem requiring V1.9 EPROMs be reinstalled. Another recommendation Hak stated was to replace the V2.0 EPROMs at SFSC with new ones. These EPROMS have been inserted and removed frequently for various tests previously conducted there and are probably wearing. There are 3 DCPs associated with the ASOS test system, ST0. Therefore, OPS12 should ship 6 V2.0 EPROMs to SFSC along with a 'chip puller.' OPS12 will send the draft Mod Notes #80 and #92 in hard copy form and on a Compact Disc (CD), along with ASOS firmware version V2.79S and ST test procedures to all ST sites. The V2.0 EPROMS will be shipped to the ST sites out of stock at NLSC. OPS12 will prepare Federal Express (Fed Ex) packages containing the Mod Notes both in hardcopy and on CDs, and the ASOS ACU V2.79S on CD. OPS24 will finish updating the ST regression tests, put them on CD and ship them to the ST sites separately. These packages would be shipped out Friday, Oct. 3 for receipt by the ST sites on Monday, Oct. 6.

Jerald Dinges next centered the discussion on field site (NWSTC, U.S. Navy SPAWARSYSCEN, FAA AOS Second-level Engineering Support Facility, and SFSC) delivery of the limited production of the CL31s for ST. John noted the CL31 ceilometers have been shipped by OST11 or SFSC to all ST sites. John clarified the CL31 sensors at NLSC are to be used for OT&E. Vaisala wants to change the clamps on the sensors they already shipped to NLSC with clamps made of better material. The clamps at NLSC will be replaced before OT&E starts, or we will proceed with the existing clamps and make

the change over for the production baseline. **UPDATE:** John reported on Monday, October 6, all test sites confirmed receiving the CL31 units.

Jerry Dinges requested OPS12 and OST11 include an itemized list of all hardware and firmware and parts with the shipments. The sites will use this list to confirm they have received all items. The sites will also contact Khien Nguyen, ST Director, to verify they have received all items before commencing their installation. OPS12 intended to ship by Fed Ex on Friday, October, 3. **UPDATE:** After discussions with Jerry Dinges on Friday, it was agreed to postpone the Fed Ex package shipments until Wednesday, October 8 to ensure the updates agreed upon at the meeting were properly addressed. In particular, they are including new procedures for performing the DCP downloads from the AOMC. They want to make sure the AOMC reviews this section in the Mod Note first.

Bob Retzlaff confirmed for Jerry Dinges he installed the LEDWI (Present Weather Sensor) shipped from SFSC on his ASOS Single-Cabinet Assembly (SCA). He will install the CL31 unit on one of the spare pedestals. He will not need a temporary mount. Khien Nguyen requested a picture of the ASOS system and a brief description of the configuration. Khien will update the ST plan for the NWSTC ASOS configuration to reflect use of the SCA.

Wayne Knight requested the tracking number of the Fed Ex packages the NWS ships to them.

3. John Monte discussed how the temporary mounts for the CL31 ceilometer needed to be built to mount the CL31 at some ST sites. John assured each site, that they would receive all the required hardware and cabling needed to make the temporary mount in a few days. John Monte will also provide each field site with installation instructions and a parts list for the temporary mounts. OST11, OPS22, and OPS24 will use the installation instructions and parts list for the temporary mount to validate the installation process and build the temporary mount at SFSC on the ST0 ASOS NLT Wednesday, October 8. **UPDATE:** The team agreed after the meeting to go to SFSC on Tuesday, Oct. 7 and perform the installation checkout of the draft instructions. They will also use Mode Note #80 to install V.20 EPROMS, V2.79S ASOS firmware, and Mode Note #92 to install the CL31 ceilometer on the temporary mount for ST. The CL31 ceilometer will remain on the temporary mount on ST0 throughout ST, and then removed for use at an OT&E site after completion of ST. After ST is completed, the CL31 ceilometer on ST0 will go back on the spare mount on the ASOS rail. ???????
4. John Monte asked the FAA representative at the meeting, Jerry Kranz, if the FAA AOS Second Level Engineering Support facility in Oklahoma City, OK has the ASOS knowledge and training to follow Mode Note #80 and Mode Note 92 to install the CL31 on their ASOS. Jerry Kranz responded that he believed they either knew how to perform the required installation or could learn the process quickly. Bob Retzlaff, NWSTC, told

Jerry that if the technicians there had problems they could call the NWSTC for technical support if needed. Bob noted they had provided support to them in the past.

5. OPS24 addressed the readiness status of SFSC to support testing during ST between the ST0 ASOS test system at SFSC and the FAA Tech Center (FAATC) in Atlantic City, NJ. Jerry stated Harris Corp. sent an e-mail stating the completion of the Service Acceptance for the new dedicated FTI communication line between the two test facilities this week. The last step is to connect the ASOS ST0 ACU to the FTI telco line on the wall near ASOS ST0 at SFSC. Also the FAATC still must confirm they have connected the FTI line to their ADAS/ALDARS test bed. An additional connection is required to their WSP test bed. The ACE/IDS will not be tested with FAATC, since the NWS has an FAA-provided ACE/IDS simulator to use during the ST. Once the FTI line connections are verified to the SFSC and FAATC, OPS24 will coordinate with the FAATC to complete the FAA system interface tests using ASOS ST0. OPS24 will contact Jim Brand and Anna Merkel, FAATC, to coordinate the schedule for ST tests related to the ADAS/ALDARS and the WSP, respectively
6. OPS24 and OST 11 then discussed the timing for moving the ST0 remote DCP's as part of the SFSC and Sterling WFO on-going move due to the Metropolitan Washington Aripport Authority expansion of Dulles International Airport. Jennifer Dover (OPS22) stated the ASOS DCP #2 (the remote DCP near Thunder Road) is scheduled to be moved across Thunder Road and south of its current location sometime next week (Oct 6-9). John Monte expressed concern about how this move will effect radio communications between the DCP and ACU. Radio communications will have to be evaluated after the DCP #2 is moved. DCP #3 (near the west gate at SFSC) is scheduled to be moved inside the gate at sometime in the near future. Some part of ST might be affected by the move of DCP2. **UPDATE:** Jennifer stated in an e-mail on Monday, Oct. 6, the test beds at SFSC will be moved in the next two days. The DCP #2 will be inoperative the next three days and will be physically relocated after the test beds moves are completed..
7. Each ST test site then provided their final comments on the readiness of their site for ST.
8. Jerry Dinges canvassed the TRG whether anyone opposed with the commencement of the ST. No one expressed a dissenting opinion. Therefore, the motion to commence the ST was unanimous.

The following Action Items were assigned at the meeting:

Action Item 1: (OPEN) - OPS12 (Joe Devost), with support from OPS11 (John Monte), will modify draft Mod Note #80 to include instructions and pictures on how to pull the "jumper" on the memory card at the DCP's to assure that all memory from the previous EPROMS is erased. In addition, Mod Note #80 will include a note to retain on-site the previous version of the ASOS ACU firmware and DCP EPROM that were removed as a backup.

Action Item 2: (OPEN) - OST12 (Joe Devost) will ship to the ST sites one package by Fed Ex that will include the draft Mod Notes #80 and #92 in hard copy format and on CD and the V2.79S firmware on CD to each ST site. OPS12 will provide an Excel spreadsheet containing an inventory list of the materials they will provide to each site (See Attachment A – Items in Black shipped 10/3 and Items in red will be shipped 10/6-10/8)

Action Item 3: (OPEN) – NLSC will burn the required ASOS DCP V2.0 EPROMS and OPS12 (Greg Sikora) will “initial issue the V2.0 EPROMS out of stock at NLSC to the ST sites. Greg confirmed these were Fed Ex to the sites on Friday, Oct. 3.

Action Item 4: (OPEN) - OST11 (John Monte) will ensure all needed hardware including cabling is shipped to the ST sites that will require the temporary mount. John Monte will provide a parts list to the test sites for the hardware he will ship. (See Attachment B) John Monte confirmed on Monday, October 7, he received Fed Ex notification the NWSTC, the U.S. Navy SPAWARSYSCEN, and the FAA AOS Second Level Engineering Support Facility received their Limit Production CL31 units.

Action Item 5: (OPEN) - OST11 (John Monte) will provide each ST site with installation instructions and a parts list for the temporary mounts after these instructions are validated at SFSC on ST0 next week.

Action Item 6: (OPEN) – OPS24 (Khien Nguyen) will update ST regression test procedures and send them on a CD to the ST sites.

Action Item 7: (OPEN) - OPS24 (Khien Nguyen, Jerry Dinges) will contact James Brand at the FAATC to discuss readiness of the FTI line to other connections to FAATC’s testbeds for ST.

Action Item 8: (OPEN) - NWSTC (Bob Retzlaff), U.S. Navy SPAWARSYSCEN (Wayne Knight), and FAA AOS Second Level Engineering Support Facility (Ron Brahavar) will contact OPS24 (Khien Nguyen) ST Director to confirm they received all Fed Ex packages and inventoried their content before installing the CL31 unit.

Action Item 9: (CLOSED) – NWSTC (Bob Retzlaff) will provided OPS24 (Khien Nguyen) with a picture of the ASOS SCA system and brief description of its configuration

Action Item 10: (OPEN) – OPS24 (Khien Nguyen) will update the ST plan to include the picture of the NWSTC SCA system and describe its configuration to accurately reflect which system will be used to install the limited production CL31. Khien will also update the ST plan to note the ST sites should not discard V1.9 EPROMs during the ST in case they need to be re-installed.

Action Item 11: (OPEN) - OPS12 (Joe Devost) and OST11 (John Monte) will provide the Fed Ex Tracking number for any packages sent to the ST test sites.

Please direct all questions/concerns to Khien Nguyen (Phone (301)-713-0326 x 177, email khien.nguyen@noaa.gov).