WFMI STATION EVENT REPORT
Remote Sensing/Fire Weather Support Group

Every Monday, Wednesday, and Friday a report of errors and other unseasonable events is emailed to the address listed in WFMI for each station. This report covers the last 7 days of data. Most stations have an error at least once during this time.

Although the Station Event can be complicated and confusing, the best way to ensure a quick and proper response to problems is to look at your data every day. Use the Station Event report to see what the errors are and learn the characteristics of your stations.

The data goes from the station to a satellite, then to NOAA (National Oceanic and Atmospheric Administration). At NOAA, it runs through the DADDS (DSC Advanced Data Distribution) system. DADDS checks the data for certain problems. DADDS errors get the highest priority because these types of errors often mean your station might be interfering with another stations data.

DADDS codes are assigned a letter system and attached to your station header data when NOAA passes the data to WFMI. WFMI flags these errors with "DADDS" at the beginning of the error code. When you receive a code that represents a DADDS error, please contact the RAWS Help Desk for assistance.

WFMI is programmed to watch for more types of errors and unusual events. When you receive a Station Event you should log into WFMI, select your station, and click the Station Events tab. A detailed report of the Station Event will be displayed.

Following is a list of errors commonly found in the station event report:

- **Transmission time was outside expected window/DADDS: Message received late/early**: This error flag triggers anytime a station is -1 or +5 seconds outside it's transmit time assignment set in WFMI (T=Message received late/early but partially in assigned window). If it drifts totally out of the assigned window other DADDS and WFMI errors are triggered: Unexpected Message, Station Offline, Station Transmissions Resumed, etc. NOTE: For stations with one minute windows, this is often not a real problem as long as the start and stop time are in the current window (usually 30sec after the transmit time assignment). For stations with one minute windows a change can be made in WFMI to the current seconds.
- ***WWV clocks only correct up to 3-4 seconds. GPSs only correct up to 29 seconds. The only time the GPS will correct more is when you recycle power on the DCP***
- **DADDS: Missing Message**: This error is triggered every time a station is expected to transmit and DADDS fails to receive one. If this is the first error listed in the report, your station is usually dead.
- **Station metadata has been updated**: This flag is triggered anytime someone edits the stations metadata in WFMI.
- **Critical change made to station metadata**: This event is triggered when a station is being included in the Critical Change Report. Changes to the following

fields trigger this event: Name, NESDIS ID, Transmit Time, Transmit Window Size, Channel, Baud Rate or Installed Date.

- **DCP message conversion error/Message received with errors**: Sometimes extra characters get into the data stream. This causes DADDS and WFMI to not be sure of the data. For instance, Wind Speed is transmitted in 3 characters. If it shows up with 4, an error is triggered. Possible causes include noisy transmitter, satellite trouble, someone was at the station and changed the program.
- **Physical maximum/minimum limit exceeded**: If you look at the Element List in WFMI you can see the max and min temps for summer and winter. Based on these, the rest of the year is assigned high/low values. The idea is for these limits to represent the typical year. It would be normal to get a Station Event error during unusually hot or cold weather. This can also indicate that a sensor or cable is bad. When you see this error look at the data and make sure it's correct. If you continue to receive this error, the seasonal range values can be edited by your Regional Coordinator.
- **Station maximum/minimum limit exceeded**: This error is similar to the seasonal limits but are the max/min values that sensors can reasonably measure.
- **Rain Gauge - Reading too high**: The max rain in the program is 99.99". If your station exceeds this you will get this error. H555 stations will keep measuring and transmitting the higher amount, but the data won't convert correctly.
- **WS - Reading too high**: This triggers when wind speed exceeds 100 mph. The most common actual cause of this error is a glitch we've seen in the H555 program that causes random bogus high winds in the gust channel. When the Ultrasonic WS/WD gets ice built up or other debris, the readings go high also.
- **WS, WD, AT, FT, RH, and FM – Maximum number of hours without a change exceeded**: All these sensors are set to trigger a Station Event error after so many hours in a row of the same reading. There isn't always a problem, but the data needs to be looked at so you can make sure. During the dry months FM gets errors for this often. During the winter the FM/FT sensor often gets covered in snow and will read consistently and give errors every week. Some stations have long periods of low wind which are not a problem. But maybe the WS is reading zero all the time (bad) or the FM is reading 0 or 1 % all the time (common problem with 439C). You must look at the data.
- **Rain Gauge, BP, AT, FT, FM, and RH – Maximum change per hour exceeded**: This is usually not a problem but the data for the event must be looked at. View the Station Event in WFMI and then select Observations. The Rain gauge triggers if it changes more than 2" in one hour. This happens often in Florida. This error shows up if you reset the rain because that change is almost always greater than 2". The RH triggers a change greater than 50%. Usually this error is due to a storm moving in quickly bringing the RH to 100%.
- **Metadata channel does not match message channel**: The channel in WFMI does not match the channel assignment in DADDS.

DADDS Error Codes

These codes are found in the header stream. The letter before the power reading should be a "G" for Good. If not, one of the error codes will be there. There's not much that can be done in the field when these errors are received. Contact the RAWS Help Desk for assistance. Not all of these codes are in WFMI but if you are using another program you may see them.

G - Good message. What everybody wants, no problem with your station.
M - Missing Message (Transmit)
U - Unexpected message
T - Message received late/early but still partially in assigned window
I - Invalid address, means one character is not in the hexadecimal system, usually DADDS problem.
A - There was one wrong character on the address but DADDS was able to figure out & replace.
D - Duplicate messages received on other channels. This is almost always a DADDS problem. It is possible for the transmitter to be in error, so check your data and especially take a look at the headers.
N - PDT (Platform Data Table) is incomplete: In exchange for permission to transmit at a certain time on a certain frequency, you agree to maintain some basic info in the DADDS system such as station name, latitude, longitude, elevation, and install date.
? - DCP Message with Parity Error
B - DCP message contained a bad (unknown) address
Q - DCP message had bad quality measurements
T - DCP message was received on wrong channel
W - DCP message was received on wrong channel
C - Excessive carrier before start of message
S - Low signal strength
F - Excessive frequency offset
X - Bad modulation index
V - Low battery voltage

If you need help interpreting your Station Event contact your Regional RAWS Coordinator or call the RSFWSU (RAWS depot) in Boise. We are glad to help!