

WIGOS Data Quality Monitoring System (WDQMS)

Frequent issues arising in WDQMS Quality Monitoring and their Potential Source



WMO OMM

World Meteorological Organization

Organisation météorologique mondiale

WDQMS quality monitoring main category

- **Data Availability** is calculated from number of reports received compared to number of reports expected, according to the required number of bulletins that are listed in OSCAR
- **Timeliness** is time delay between observation time and reception time in users database.
- **Uncertainty**, observation against First Guess Background of NWP comparison results

Frequent issues related to Data Availability

- Stations do not provide any data to GTS although they are listed as being operational and affiliated to GOS in OSCAR/Surface, called **“silent stations”**.
- Temporary lack of messages
- Lack of observations of particular parameters

Frequent issues related to Data Availability (cont.)

- Actions to be taken related to Data Availability issue:
 - **OSCAR**, less frequent reporting from station which is not intended to report to GTS
 - Check GOS affiliation or reporting schedule in OSCAR
 - **GTS**, Station should report to GTS but no data on GTS (TAC or BUFR)
 - Check GTS dissemination, data transfer site – GTS knot
 - **Site**, No data received at GTS knot from station
 - Check data transfer from site, technical/sensor issues?
 - **BUFR**, Lack of BUFR data on GTS
 - Check BUFR encoding at site/headquarters/GTS knot

Frequent issues related to Timeliness

- Data available in user database with significant delay
- Actions to be taken related to Timeliness issues:
 - **GTS**, Data arrives in time from station at GTS knot
 - Check data ingestion onto GTS
 - **Site**, Data doesn't arrive in time from station at GTS knot
 - Check data transmission from site to GTS knot

Frequent issues related to Uncertainty

- Observation minus background (O-B) results show large errors of a particular parameter
- Actions to be taken related to Uncertainty issues:
 - **OSCAR**, Large pressure O-B results: station/barometer height incorrect
 - Check station meta data information in OSCAR
 - **Site**, Faulty sensor; incorrect barometer/thermometer reading
 - Check sensor and/or observing practices thoroughly-
 - **BUFR**, Incorrect encoding of BUFR data
 - Check BUFR encoding (e.g. correct conversion TAC to BUFR)

WDQMS Quality Monitoring Main Category

DATA AVAILABILITY

No. of reports received compared to no. of reports expected

TIMELINESS

Time delay between observation time and reception time in users database

UNCERTAINTY

Observations against First Guess Background of NWP comparison results

Frequent issues

Silent station?
Temporary lack of messages?

Lack of observations of particular parameters?

Data available in users database with significant delay

O-B results show large errors of a particular parameter

OSCAR

Station not intended to report to GTS; less frequent reporting
→ Check GOS affiliation or reporting schedule in OSCAR

GTS

Station should report to GTS but no data on GTS (TAC or BUFR)
→ Check GTS dissemination, data transfer site - GTS knot

Site

No data received at GTS knot from station
→ Check data transfer from site; technical/sensor issues?

BUFR

Lack of BUFR data on GTS
→ Check BUFR encoding at site / headquarters /GTS knot

GTS

Data arrives in time from station at GTS knot
→ Check data ingestion onto GTS

Site

Data doesn't arrive in time from station at GTS knot
→ Check data transmission from site to GTS knot

OSCAR

Large pressure O-B results: station/barometer height incorrect
→ Check station meta data information in OSCAR

Site

Faulty sensor; incorrect barometer/thermometer reading
→ Check sensor and/or observing practices thoroughly

BUFR

Incorrect encoding of BUFR data
→ check BUFR encoding (e.g. correct conversion TAC to BUFR)

Thank you

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