OceanSITES Physical/Meteorological QC

Background

We agreed to work on a way to fill uniformly the QC flags by providing guidelines to Real Time operators… There should be an OceanSITES real-time QC manual that will be initiated from the Mersea document. The following working group was set up on this subject (***Action PMEL, MBARI , Coriolis, NOC, Jamstec***)

It was decided that first step for delayed mode QC was for each operator to document their procedure and make them available on OceanSITES WWW site (***Action all PIs)***

OceanSITES Physical/Meteorological QC

Codes

0 No QC was performed
1 Good data
2 Probably good data
3 Bad data that are potentially correctable
4 Bad data
5 Value changed
6 Not used
7 Not used
8 Interpolated value
9 Missing value

OceanSITES Physical/Meteorological QC

Overview

- The OceanSITES QC policy should be general in nature, leaving the choice of specific implementation strategies up to data providers based on their system configuration and available resources.
- Data providers should document their QC procedures on their public web site. OceanSITES web site should provide the documentation or a link to it.
- Data files should include OceanSITES QC codes. Documentation may include specific interpretation of codes.
- Automatic processing will provide efficiency, but some manual (human) checks are also required.

OceanSITES Physical/Meteorological QC

Measurements

- Wind speed and direction (or U/V)
- Air temperature
- Relative or specific humidity
- Precipitation
- Short wave radiation
- Long wave radiation
- Barometric pressure
- Water temperature
- Salinity
- Water velocity
- Pressure/depth
- …

OceanSITES Physical/Meteorological QC

Real Time (at acquisition) Procedures

- Telemetry confirmation (Mooring ID, Checksum…)
- Location confirmation (horizontal and vertical) and status (i.e., moored or drifting)
- Data value confirmed within accepted physical range
- Data varies as expected with time (not constant value)
- Sample time within accepted clock accuracy
- Data consistent with collocated or nearby measurements, or climatology
- Confirmation of system health and proper function (engineering metadata)
- Identification of data quality

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Vocabulary

"Real time" vs. "Delayed Mode"

Data Set Acquisition Method
- Telemetered (subset, average)
- Internally recorded (more complete)

Procedure Frequency
- At Acquisition
- Periodically or post-recovery

OceanSITES Physical/Meteorological QC

Delayed Mode (weekly/monthly/mooring recovery) Procedures

- Real time procedures where applicable (e.g., delay data come via different source, RAM vs. satellite, or different resolution, 10-min vs. daily)
- Clock drift
- Visual inspection for bias trends, spikes, noise, etc.
- Sensor calibration drift
- Instrumentation condition at recovery
- Comparison with information not available in real time (model reanalysis, satellite, CTD, XBT, ARGO, drifters, etc.)
- User feedback