



Manual for Real-Time Quality Control of Dissolved Oxygen

A Guide to Quality Control and Quality
Assurance for Dissolved Oxygen
Observations in Coastal Oceans

4. Roles and Responsibilities

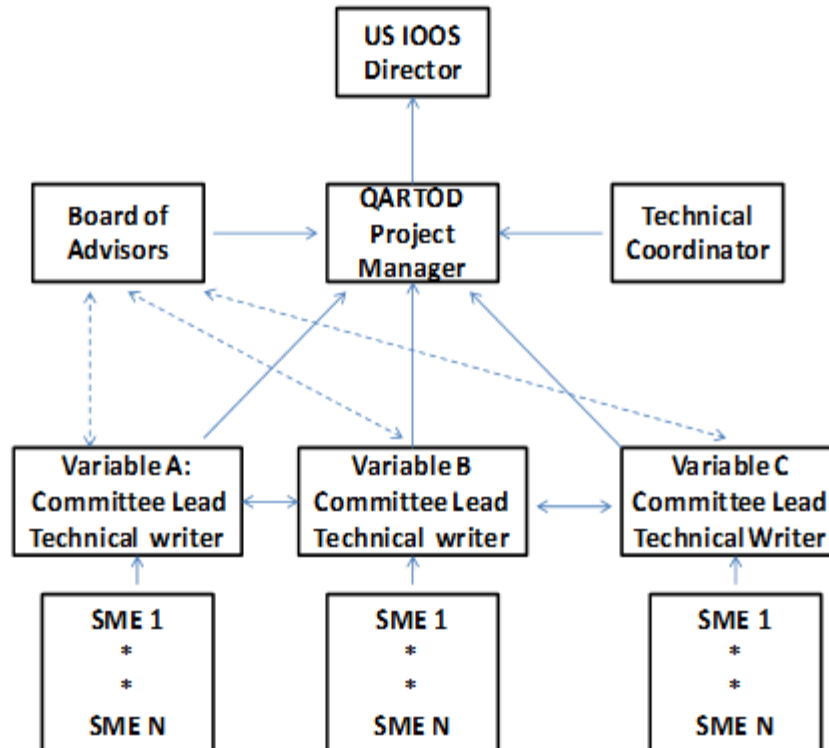


Figure 1: Structure of QARTOD.

Figure 1 illustrates the general construct and responsibilities of the QARTOD process, but not necessarily the functional process of meeting program goals and objectives. Functional responsibilities are described below.



QARTOD VI Participants that met at the National Data Buoy Center on 31 July-1 August 2012.

6.1

Stationary Sensor Tests.....

Test 1) Gap Check.....

Test 2) Syntax Check.....

Test 3) Flat Line Check.....

Test 4) Attenuated Signal Check.....

Test 5) Gross Range Check.....

Test 6) Spike Check.....

Test 7) Rate of Change Check.....

Test 8) Climatology Check.....

Test 9) Multi-Variant Check.....

Test 10) Neighbor Check.....

6.2

Mobile Sensor Tests.....

Fixed Vertical Profiles.....

Mobile Surface Vessels.....

3D Vessels.....

Indicator	Flag	Description
Red	Fail	Data are considered to have failed real-time QC checks. If they are disseminated at all it should be readily apparent that they are not of acceptable quality.
Yellow	Suspect	Data are considered to be either suspect or of high interest to data providers and users. They are flagged yellow to draw further attention to them by operators.
Green	Pass	Data have passed the real-time quality control tests and are deemed adequate for use as preliminary data.

6.1 Stationary Sensor Tests

Test 1) Gap Check

Check for arrival of data

Test determines that the most recent data point has been received within the expected time window (TIM_INC) and has the correct time stamp (TIM_STMP).

Note: For those systems that don't update at regular intervals, a maximum time increment check can be performed.

Flags	Condition	Codeable Instructions
Red	Data have not arrived as expected	$NOW - TIM_STMP > TIM_INC$
Yellow	N/A	
Green	Applies for test pass condition	

Test Exception: None

Test specifications to be established locally by operator

Example: TIM_INC= 1 hour

Fixed Vertical Profiles

Fixed vertical DO profiles can be obtained from a variety of systems, including rigid-mounted profiling systems, buoy/mooring climbers, surface or bottom tethered systems, or even routine repeated manual station occupations. In such cases, the ten tests previously described for a fixed sensor either remain unchanged or are conducted along the vertical z axis rather than along a time series of observations.

Table 6-1. Tests for fixed vertical profiles

Test	Condition	Codeable Instructions
1) Gap Check	Check for arrival of data	No change
2) Syntax Check	Expected data sentence received, absence of parity errors	No change
3) Flat Line Check	Invariant DO value	Test is conducted along z axis
4) Attenuated Signal Check	Inadequate variation test	Test is conducted along z axis
5) Gross Range Check	Data point exceeds sensor or operator selected min/max	No change
6) Spike Check	n_2 test	Test is conducted along z axis
7) Rate of Change Check	Excessive rise/fall test	Test is conducted along z axis
8) Climatology Check	Test that data point falls within seasonal expectations	Test is conducted along z axis
9) Multi-Variant Check	Comparison to other variables	Test is conducted along z axis
10) Neighbor Check	Comparison to nearby DO sensors	Test is conducted along z axis

Next Steps:

By end of September

- 2nd draft of DO Procedures manual
- Table of existing procedures vs IOOS core variables
- 1st draft of final Currents Procedures manual
- 1st draft of final Waves Procedures manual

FY2013

- Finalize DO, Currents, Waves
- Select next core variable, SME workshop, draft and finalize next procedures manual