



Endorsed

XBT Operational Best Practices for Quality Assurance

Version 1.0

Author(s): Justine Parks

Essential Ocean Variable(s): Sea Surface temperature; Subsurface temperature;
Sea Surface salinity; Subsurface salinity;

Network(s): Ship Observations Team (SOT) Ship of Opportunity Programme (SOOP)

Sensors: Expendable Bathythermograph (XBT)

Endorsed by (GOOS PANEL, eg OCG, BIOECO): OCG

Endorsement date: 15 February 2022

DOI Identifier: <http://dx.doi.org/10.25607/OBP-1720>

Brief description of community review process:

The community review included:

- All those listed as authors/editors (complete list at the end of this document);
- Distribution by the SOT Chair to the entire global SOT community for review;
- Distribution to the UNOLS research vessel technician's mailing list; and,
- Referenced in the SOT-11 meeting as an action item for adoption as a best practice on the SOOP website and for GOOS endorsement.

Links to previous versions or full manuals if this is a summary paper:

This manual has been endorsed by the GOOS Observation Coordination Group – Ship Observations Team panel of experts as a globally accepted best practice for the Ship of Opportunity Programme.

The GOOS best practice endorsement process has been developed by the GOOS and the Observation Coordination Group (OCG) in conjunction with the Ocean Best Practices System (OBPS).

The aim is for global networks (eg the International Argo programme through GOOS OCG) or groups of experts (eg. the GOOS Biogeochemical Panel) to endorse and share methods which have reproduced superior results for confidence in and uptake by the broader ocean community.

The endorsed methods can range from standard operating procedures to field manuals and have been adopted by community review as 'globally' accepted methods. Following best practices improves the reproducibility of science research, and interoperability across disciplines and datasets by standardizing methods and data collection. It allows for research to be more efficient, leads to quality datasets, and supports future proofing data.

Endorsed GOOS best practices have been through a strong identifying process. They have been adopted and used by established ocean observers and therefore represent a strong basis for the ocean science community. The document will be updated and re-endorsed as appropriate.

Full list of authors

Author: Justine Parks¹

Contributors: Francis Bringas²; Craig Hanstein³; Lisa Krummel⁴

Major Editors: Rebecca Cowley³; Janet Sprintall¹

Other Editors/reviewers: Lijing Cheng⁵; Mauro Cirano⁶; Samantha Cruz⁶; Marlos Goes²; Shoichi Kizu⁷; Franco Reseghetti⁸

¹Scripps Institution of Oceanography, Climate, Atmospheric Sciences, and Physical Oceanography, University of California, San Diego, CA, USA

²Atlantic Oceanographic and Meteorological Laboratory, Physical Oceanography Division, National Atmospheric and Oceanic Administration, Miami, FL, USA

³Commonwealth Scientific and Industrial Research Organisation, Oceans and Atmosphere, Hobart, Tasmania, Australia

⁴Bureau of Meteorology, Marine Observations Unit, Melbourne, Victoria, Australia

⁵Institute of Atmospheric Physics, Chinese Academy of Sciences, Beijing, China

⁶Center for Mathematical and Natural Sciences, Institute of Geosciences, Department of Meteorology, Universidade Federal de Rio do Janeiro, Brazil

⁷Graduate School of Science Geophysics, Tohoku University, Sendai, Japan

⁸Biodiversity and Ecosystem Services Laboratory, Italian National Agency for New Technologies, Energy and Sustainable Economic Development, San Terenzo, Italy