

An all-in-one web tool to apply CTD quality control, format data, and generate metadata under SeaDataNet criteria

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The software parses a set of cnv files and homogenise variables (names, column order, precision, etc.). Different quality test are applied based on recomendations from GTSP and SeaDataNet manuals. Depending on the success during the test, a flag is assigned to each individual record and also an overall flag to each parameter and to the entire profile. Processed records are formatted to the SeaDataNet MEDATLAS auto-descriptive ASCII format. Finally, Common Data Index (CDI) metadata are generated, one per vertical profile by filling up a preexisting template.

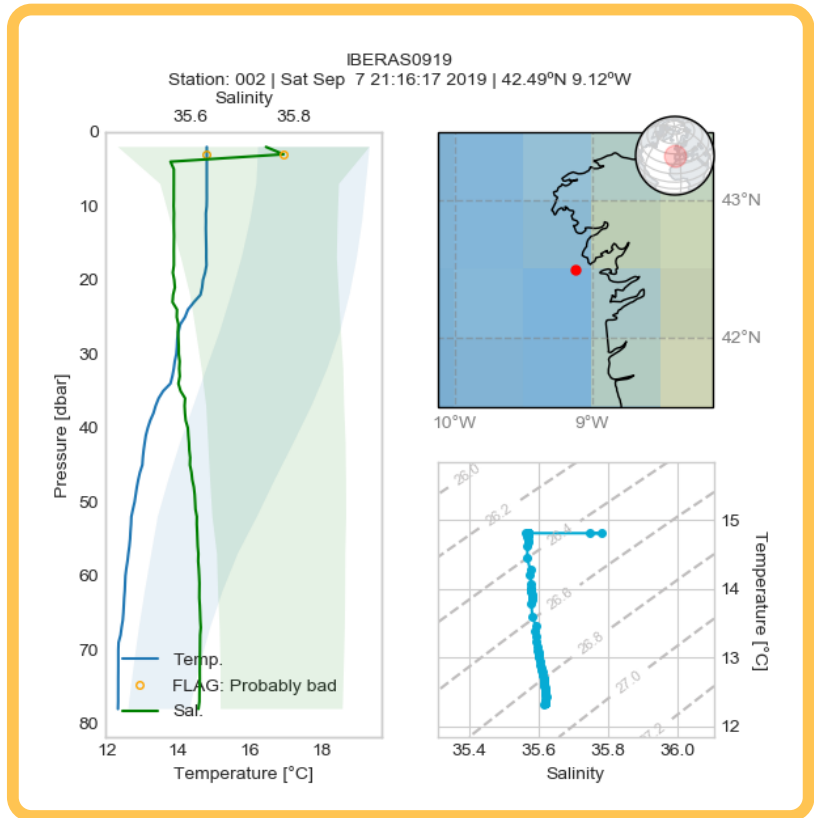


INTRODUCTION

Sharing marine data through SeaDataNet is an optimal way of ensuring FAIR principles: Findable, Accessible, Interoperable and Reusable. However, submission of data to this infrastructure demands a set of technical tasks that cover quality control processing, adoption of common vocabularies, implement file format standards and preparation of associated metadata. These tasks are complex and time-consuming. Taking into account that data from CTD (Conductivity, Temperature and Depth) vertical profiles usually follows the same format and involves similar processing, a web application has been developed to perform all these tasks straightforward.



The Instituto Español de Oceanografía (IEO) acts as National Oceanographic Data Center (NODC) and submits diverse datasets collected by the Spanish oceanographic fleet to SeaDataNet infrastructure. Until the present, more than 45,000 CTD vertical profiles have been submitted.



Example of plot to help users in the last step (final supervision). Temperature and salinity is plotted and compared to climatologic values (shaded areas). Records with 'bad' and 'probably bad' flags are highlighted.

LIST OF TESTS

Date and time
Location at sea
Vessel speed
Global range
Regional range
Climatologic range
Gradient depth conditional
Spike depth conditional
Profile envelop
Digit roll over
Stuck value
Density inversion test

ctdcheck.ieo.es

Load the CSR file (optional)

A Cruise Summary Report (CSR) metadata file associated to the dataset. In this way, software extracts main info from the cruise (e.g., ID, principal investigator, vessel, dates, location, project...) and ensures consistency.

Backend processing

- 1) Files are parsed and main info is extracted
- 2) Different tests are done on data (see test section)
- 3) Quality control flags are applied on each individual record and on the profile
- 4) A MedAtlas file is generated containing all CTD stations
- 5) One metadata file is generated for each vertical profile following SeaDataNet criteria

Happy? Get your results

A zip file containing data (MedAtlas), metadata (CDIs) and some plots is ready to download

Share

Now, you are ready to submit your standardized data and metadata files to SeaDataNet or share with your colleagues.

Load CNV files

One file per cast but all uploaded all the same time. By the moment, only SeaBird compatible but the code could be easily modified.

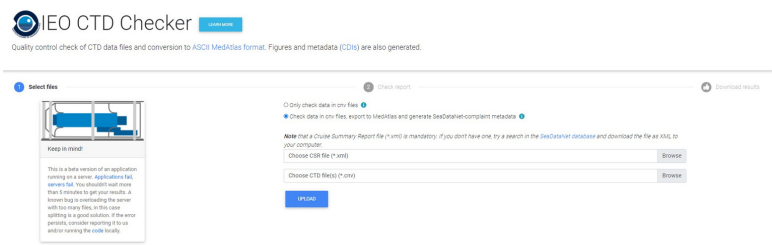
Check logs and map

The screen will show you a map with some information and also warnings following the colors of a traffic light. If a problem is detected, it will try to suggest what you should modify.

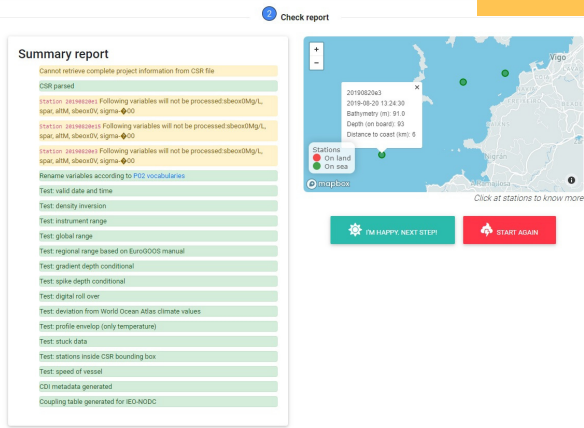
Supervised control

A final control is always necessary. To help you, some plots are included.

STEP 1



STEP 2



STEP 3

CONCLUSIONS

A web tool has been created to speed up the FAIR process in CTD data under the SeaDataNet criteria. The tool is easy to use and performs tasks in minutes that could take hours by an experienced technician. While a web application avoids installation and update processes and is cross-platform, we have learned from this experience that it nevertheless requires high maintenance and is limited by server conditions.