The Global Ocean Surface Underway Data (GOSUD) project
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Vision and mission:
GOSUD aims at assembling in-situ observations of the world upper ocean collected by a variety of ships and at distributing quality controlled datasets. At present time the variables considered by GOSUD are temperature and salinity. To reach this objective, GOSUD strategy is to work on the following aspects:
- Establish direct contact with the data collectors in order to facilitate all stages of the process from data acquisition to data transmission and feed back on the data quality.
- Encourage standard procedures for instrument settings and maintenance, water samples analysis, real time quality control and delayed mode processing and provide the corresponding documentations.
- Ensure real time transmission and apply automatic quality controls on the real time data flow.
- Fully document the delayed mode datasets through meta data and links to publications.
- Facilitate the data access by a large community of users by offering fully documented datasets and products.
- Highlight the synthetic products based on the GOSUD datasets developed by scientific organisations.

What is GOSUD:
Origin:
GOSUD is an initiative of the International Oceanographic Data and Information Exchange (IODE) of the Intergovernmental Oceanographic Commission (IOC) programme. It was established in 2001, following recommendation IODE-AW.10 (Lisbon November 2000) “…to acquire, quality control, store in standard format, and disseminate the collected underway sea surface salinity data.

Organisation:
Project chair: Fabienne Gaillard (Ifremer)
Data management co-chair: Loïc Petit de la Villebon (Ifremer)
Project steering group: Gustavo Goni (NOAA, ACML/NOAA, Wilhelm Petersen (CHR/NSG), Mathieu Ouellet (POD), Benjamin Pfeil (OCOP/SOCAT), Gilles Reverdin (OCEDAN), Suzuki Toru (MR/JHA), Tim Boyer (US-NOAA) as of October 2015.

Data Flow:
GOSUD collects two levels of data: real time and delayed mode data.
- Real time data are QC-controlled before inclusion in the data base.
- RT and NRT files in NetCdf format are created for FTP distribution.
- When DM data are delivered, they overwrite the RT data in the GOSUD database.
- Extraction using the selection tools gives you the last update of the database.
- The DM NetCdf files are made available by FTP.
- FTP RT and NRT NetCdf files remain unchanged.

Data Access:
Web access
The web access allows to select and extract data from the GOSUD database. The data collected by GOSUD in real time and near real time are included in the database as soon as they become available. When a new delayed mode dataset is made available by a PI, the DM-data from the corresponding ships within the period processed replaces all data previously in the database. The data extracted from the web interface thus include the last update of the database with delayed mode data, complemented by real time data.

Gosud FTP Access
Two types of TSG data files in GOSUD-NetCdf format can be downloaded from FTP directories:
- Real time and Near real time data files: those files are created from the database as soon as they can be produced and are not updated. Delayed mode data files. The last version submitted by the PI is proposed.
- DM-Network access
Some networks produce delayed mode datasets that are made available as GOSUD NetCdf files with full metadata, adjusted variables and an estimate of the data uncertainty. Those datasets are later integrated in the GOSUD database.

The future of GOSUD:
New ocean variables are now collected underway from research vessels and ships of opportunity. Although data processing will remain specific to each variable, the data management and archiving of datasets that share the same “space and time sampling” and often contribute to similar scientific programs has to be coordinated. It is the case for bio-geochemistry variables, in particular from Ferbybox systems, or currents (VM-ADCP).
GOSUD is renewing its steering group and will redefine its objective for the next decade. The period is then particularly appropriate to join the group or make suggestions and recommendations.

Do not hesitate to contact GOSUD at http://www.gosud.org/

Project Status:

Content of database:

At present time more than 50 vessels report their data to GOSUD.

2012

2013

2014


0 50 100

Delayed mode processing:
To ensure a data quality in accordance with current research standards, in addition to the proper installation, calibration and cleaning of the instrument, a delayed mode processing has to be applied to the dataset. It relies on:
- the careful screening of the data to remove measurements performed in bad conditions (insufficient flow, air bubbles)
- the adjustment on external reference data from water samples or CTDs
- The “SO-SSS” has developed a software (TSG-Q6) and uses it to process the TSG data from merchant ships (see below)

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