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(JCOMM)

SHIP OBSERVATIONS TEAM (SOT)

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GLOBAL OCEAN SURFACE UNDERWAY DATA PILOT PROJECT (GOSUD) REPORT

(Submitted by Fabienne Gaillard and Loic Petit de la Villeon (France), GOSUD Chair)

Summary and purpose of the document

This document provides information on the development and activities of the Global Ocean Surface Underway Data Pilot Project (GOSUD) since the last SOT meeting.

ACTION PROPOSED

The Team will review the information contained in this report, and comment and make decisions or recommendations as appropriate. See part A for the details of recommended actions.

Appendices: A. GOSUD Report to the SOT-8

- A - DRAFT TEXT FOR INCLUSION IN THE FINAL REPORT

10.1.5.1 Dr J.Trinanes (USA) reported on the development and activities of GOSUD on behalf of the GOSUD chair. The Team noted the following achievements of GOSUD:

- The GOSUD routine operations to collect, process, archive and distribute real-time surface temperature and salinity surface data have been continued;
- A study on data quality of real time transmitted data from several ships has been carried;
- Delayed mode Salinity datasets adjusted on water samples have been delivered for merchant ships and for French research ships. Those datasets have been included in the GOSUD database;
- The GOSUD NetCdf format V3 has been defined as the new GOSUD standard and the TSGQC software that enables to perform quality control and data adjustment has been updated; and
- A new GOSUD Steering group is being formed.

10.1.5.2. The Team recommended to transmit intake temperature and flow rate with salinity to help qualify the data.

10.1.5.3. The Team decided on the following action items:

- (i) To complete Steering Group formation (**action; GOSUD co-chairs; May 2015**);
- (ii) To produce a new project plan (**action; GOSUD co-chairs; Sept. 2015**);
- (iii) To hold GOSUD workshop (**action; GOSUD ; late 2015 or early 2016**);
- (iv) To coordinate with FerryBox projects (**action; GOSUD co-chairs; Mar. 2016**); and
- (v) To localize delayed mode datasets (**action; GOSUD FP for Australia; march 2016**).

10.1.5.4 The complete GOSUD report is provided in Appendix A.

Appendix: 1

APPENDIX A**REPORT OF THE GLOBAL OCEAN SURFACE UNDERWAY DATA (GOSUD) PROJECT**

(report submitted by the Chair of GOSUD, Mr Loic Petit de la Villeon, France)

This document provides information on the development and activities of the Global Ocean Surface Underway Data Pilot Project (GOSUD) since the last SOT meeting.

1 Introduction

The Global Ocean Surface Underway Data (GOSUD, <http://www.gosud.org/>) was initiated in 2001 following an initiative of the International Oceanographic Data and Information Exchange (IODE). It aims at assembling in-situ observations of the world ocean surface collected by a variety of ships and at distributing quality controlled datasets. At present time the variables considered by GOSUD are temperature and salinity.

Ocean surface is the location of strong exchanges with the atmosphere but also with ice and continents. Ship based underway measurements can make a significant contribution to the observation of this very active layer on condition that the datasets produced would be properly qualified and assembled.

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 dataflow.
- 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.

2 Activities implemented between April 2013 and March 2015***GOSUD real time dataset update:***

The GOSUD routine operations to collect, process, archive and distribute real-time surface temperature and salinity surface data have been continued. It appears from Figure 1 and Figure 2 that the GOSUD network has been enlarged to a wider panel of reporting vessels.

Evaluation of the quality of uncorrected data

In order to update their Atlantic salinity Climatology, Reverdin and Castenare performed a statistical analysis of non-corrected data from GOSUD-SOCAT-SAMOS and a few EU-research vessels. They applied 3 checks: 1) sufficient water flow on the conductivity cell, 2) aberrant variability, 3) bias identification. data. Overall they found that about 60% of data are correctable. They note that TSG from research vessels, or Vos followed regularly are of a better quality, but biases (0.03 to 1 PSS) are present in most of them. They stress the need for transmission of intake temperatures and flow rate to detect proper functioning of the conductivity cell and recommend to suspend real time transmission to GOSUD of data flagged as bad by the producer.

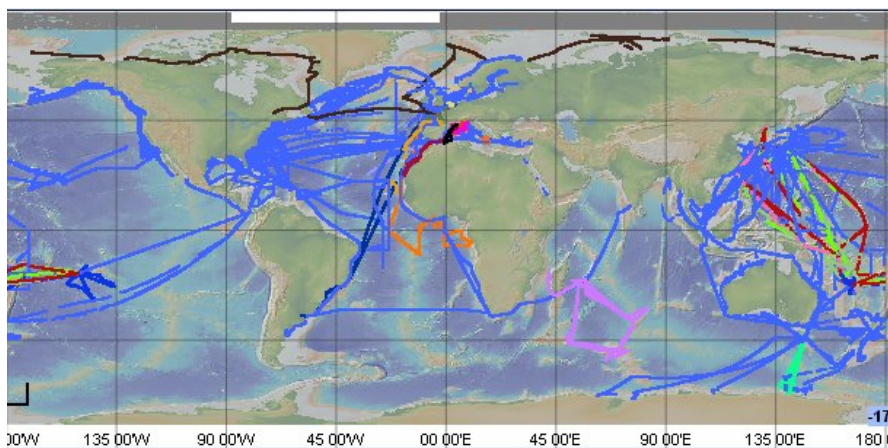


Figure 1: Content of GOSUD database for the Year 2013

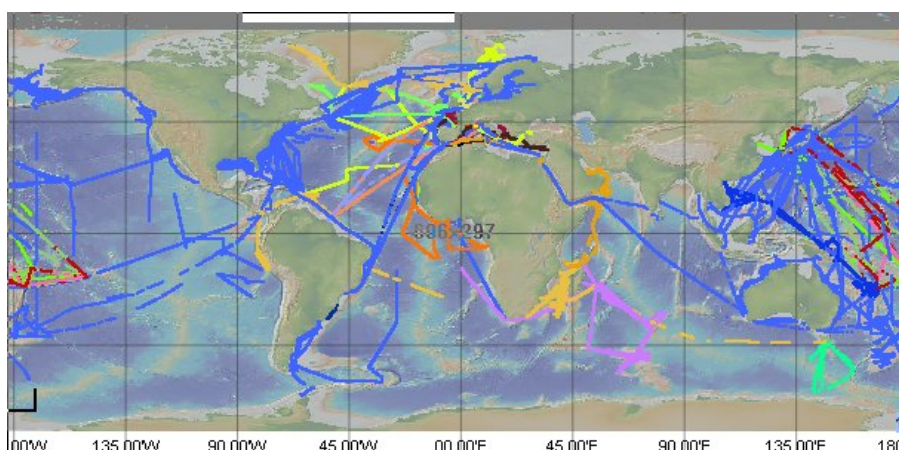


Figure 2: Content of GOSUD dataset for the year 2014

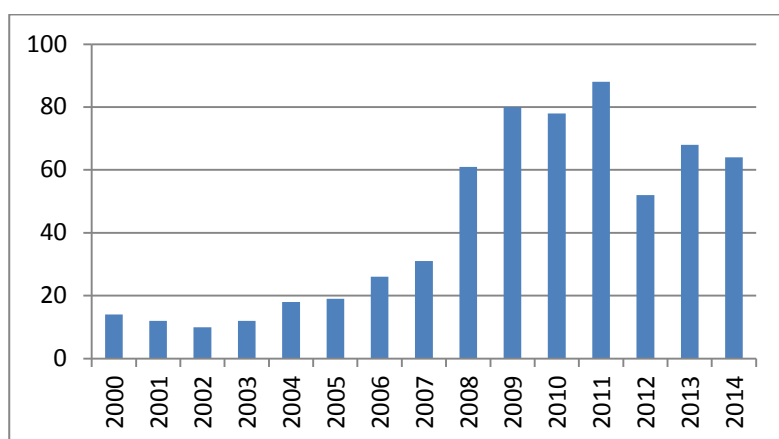


Figure 3: Number of vessels reporting data to GOSUD

Delayed mode datasets

Two updated delayed mode datasets have been delivered to GOSUD:

- Delayed mode data from merchant ships adjusted on water samples have been delivered by SNO-SSS for the period 2002-2014. <http://www.legos.obs-mip.fr/observations/sss/datadelivery/dmdata>
- Delayed mode data from French research ships (period 2001-2013) (Figure 3). Pôle Océan: <http://doi.org/z79>.

Those datasets have been included in the GOSUD database. They can be accessed using the selection tool, or by downloading the original NetCdf file. (See the GOSUD Web Site <http://www.gosud.org/>)

It was also mentioned at the last GOSUD meeting that delayed mode datasets exist for some Australian ships.

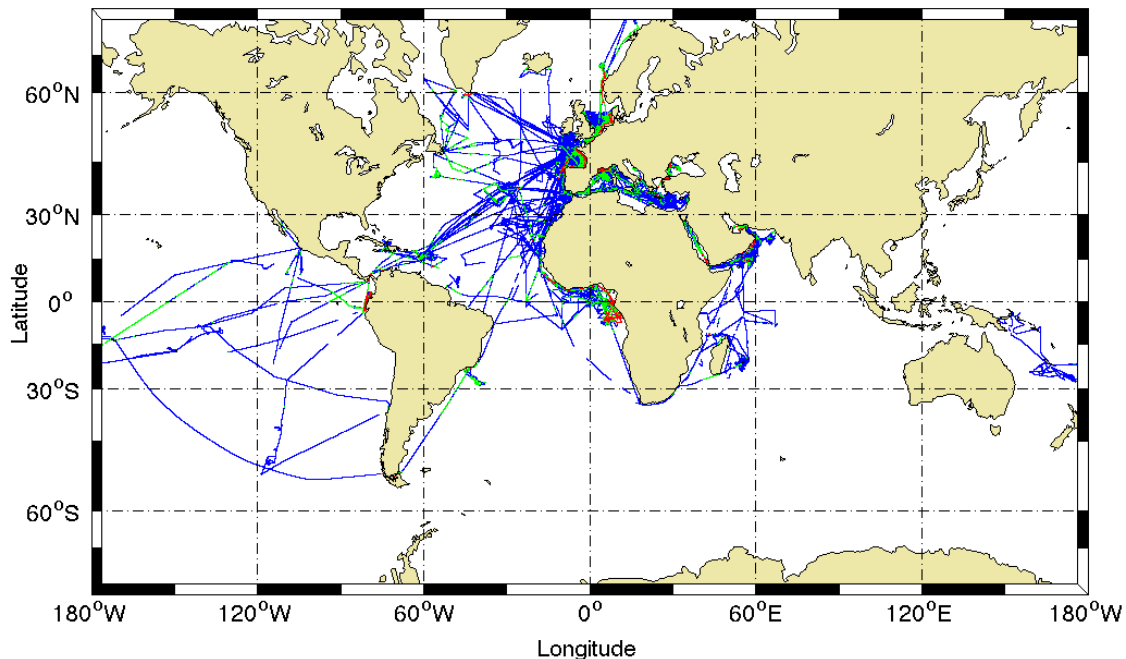


Figure 4: Differences between the delayed mode TSG salinity measurements and the salinity field as produced by the monthly analysis ISAS-13. Note that the period considered run from 2002-2012. In blue the difference ΔS is less than 0.5 PSS, in green $0.5 < \Delta S < 2$ PSS, in red $\Delta S > 2$ PSS.

Software and format:

The Gosud NetCdf format V3 has been defined as the new GOSUD standard. The TSGQC software that enables to perform quality control and data adjustment has been updated.

Events and communication

- The GOSUD project has been presented at the IMDIS conference, Lucca-Italy- 23-25 September 2013.
- Contact have been initiated with the FerryBox community (FerryBox meeting Tallin-Estonia- September 2015 and FerryBox Eurogoos task team Brussels –Belgium-December 2014)
- Held the 8th meeting of the Project, Oostende, Belgium. 18-19 June 2014. Report available on: http://www.gosud.org/content/download/24599/169190/file/GOSUD_2014-final_report.pdf
- Attend the meeting and report to the 23rd Session of the IOC Committee on International Oceanographic Data and Information Exchange (IODE-XXII), 17-20 March 2015, Bruges, Belgium.

3 New Steering group

At the late GOSUD meeting it was decided to renew the GOSUD steering Group. This new group is lead by two co-chairs: Fabienne Gaillard and Loic Petit de la Villéon, representing the data management and the scientific aspects of the project. Contacts are being taken to form the Steering Group.

4 **Recommendations**

- Transmitting intake temperature and flow rate with salinity help qualify the data
 - Link with Ferry box (same variable, same sensor) should be pursued
 - Delayed mode data adjusted on water samples exist for some Australia ships, they must be localized (Australian contact).
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