EU glider - meeting minutes

Drafted : 02/06/2020

Expected Outcome of the meeting:

- Clarifying the European and international situation around glider data management.
- Identify priorities for the glider DM and amongst projects and stakeholders.
- Discuss Sensor ML for Gliders and identify opportunities and timeline.
- White Paper on EU glider data management?

Chair of the meeting: Victor Turpin

1. Review the outcomes of 2018 Genova meeting on gliders data management – (Victor Turpin).

Report is accessible on EGO and OceanGliders website in their data management section.
See : https://www.ego-network.org/dokuwiki/lib/exe/fetch.php?media=public:egodmmeeting:minutes_gliderdatamanagment_20180921_final.pdf

The work plan covers 3 mains objectives:

- International Cooperation (Unique Format, Regular meeting on DM, Monitoring through JCOMMOPS).
- Centralize and updated documentation on data.
- Improvement of community tools for data management (real time, recovery and delayed mode).

Progresses have been made in the 3 topics. But no improvement so far in the delayed mode question. This item should be identified as a priority in that perspective.

2. Overview of the EU project and expected outcome and timeline for data management

- GROOM II – A revised road map for data management
- EuroSEA – Fuel for glider coordination in Europe
- JERICO 3 – Supporting gliders data flow
- SeaDataCloud -
- EuroGOOS Glider TT – Integration framework for glider data management

GROOM II – A revised road map for data management

Bullet points from Laurent Mortier

GROOM II follows GROOM after 5 years (GROOM II 1st in reserve list at the previous 2017 call but not funded at the end). The 1st GROOM did a detail scientific and technical design.

Provisional web site : http://www.groom-h2020.eu/ (with partners list)

Main objective: **Full design of an European RI for marine drones for observation (GERI but not only gliders !)**, including alignment with national RI policies.

- Update of technicalities: data management, IT tools
- The MRI landscape problem: how to provide a world class marine drones service in Europe in the framework of existing ESFRI (EuroArgo, EMSO and also EMBRC), I3 projects (EuroFleet, EUMR, JERICO) and JERICO DS.
- Technology roadmap of the GERI:
    - Revised data management roadmap for European gliders to cope with the emerging science questions, evolving global data management landscape, and trends that emerged from OceanObs'19.
    - A series of ontologies and machine-to-machine interfaces to facilitate a quick integration of software planning tools, AI systems and new vehicle technologies within the GERI core systems.
    - A compilation of best practices in the form of standard operating procedures on how to maintain, deploy and recover the gliders and other long range autonomous vehicles.

Details about Data management (copy from the proposal)

- Produce: The technology roadmap for the GERI, including a revised data roadmap for European gliders to cope with the emerging science questions, evolving global data management landscape, and trends that emerged from OceanObs'19.
    - 6.2: In collaboration with OceanGliders/EGO and other MRIs (EuroArgo, EMSO, EUMR, etc.) with the goals of
        - enabling international harmonisation and brokering of ocean glider data including the link to CMEMS, ii)
        - moving ocean glider data toward achieving the FAIR guiding principles, iii) working within the Ocean Best Practices network to share and disseminate glider best practices
        - enabling interoperability with other GOOS networks,
        - maximising the potential future reuse of ocean glider data beyond its original purpose,
        - identifying Key Performance Indicators (KPI) for glider data flow to monitor and optimise data infrastructure.
    - 6.5: produce a comprehensive set of Standard Operating Procedures (SOPs) that will be part of the technical framework of the GERI.
        - build on the best practices recommended by GROOM-FP7, OceanGliders and JERICO projects series to propose harmonization of

standard operating procedures in the areas of glider preparation, sensor calibration, vehicle deployment and recovery.
        - operating procedures related to fault reporting and sharing will be designed.

EuroSEA – Fuel for glider coordination in Europe

Bullet points from Pierre Testor

- H2020 EuroSEA (https://www.eurosea.eu/) aims to improve ocean observing and forecasting systems in Europe towards a user-focused, interdisciplinary, and responsive European ocean observing and forecasting system.
- EuroSEA WP3 will oversee key aspects of integration of European observing technology for its optimal use in EOOS and global initiatives (e.g. GOOS) and, in parallel, addressing national interests. WP3.2 "gliders" is meant to coordinate efforts of the European glider community.
- WP3.2 will support coordination activities in relation with the EuroGOOS GTT and OceanGliders. Support for typically 2 meetings (~20 people each) is available during the project (2020-2022). The first was planned on best practices in September in Paris but is postponed in 2021, preferably before the next and 9th international EGO workshop that could be organized in Gran Canaria late 2021.

JERICO S3 - Support gliders data flow

Bullet points from Peter Thijsse

- Jerico, coastal monitoring RI
- Peter coordinates the JS3 - DM work package 6
- Fairly little budget unfortunately but aimed to support the dataflow from the coastal platforms
- 3 main aims relevant for Gilder community (aim is the same for other mature platforms like ferry-boxes, fixed stations):
    - Compile overview of data management standards and best practices for platform types
    - Improve the availability of coastal data in the aggregators (CMEMS instac, EMODNet physics, SDN – delayed mode)
    - Improve the FAIRness of the data, and then mainly the I and R => provenance of data/metadata
        - Processing info
        - Software used, versions etc.
        - SensorML description important for sensor information, calibration etc.
        - The info is now often missing
- During the project demonstrate the value of the approach and the improvements on several selected platforms
    - This means work on the basis, as well as it may include work in aggregators to be able to handle/store this additional info and not lose it
- We could work in this Glider WG together on:

- SensorML descriptions
- Compilation of data management standards and best practices (overlap in action with EuroSEA)

SeaDataCloud –

Bullet points from Mark Hebden

EuroGOOS Glider TT – Integration framework for glider data management

Bullet points from Carlos Barrera

3. The international initiative on a unique glider format

OG1.0 is a unique format for gliders data management that should be ready by the end of 2020 for a 2-year implementation period.
Coriolis will continue its effort on integrating the new requirements from OG data management team to maintain its services for EU gliders data management.

4. Focus on Sensor ML for gliders

SensorML is a promising technology, in the perspective of delayed mode QC of the gliders data. It strongly supports the Reusable and Interoperable side of the FAIRness principles of gliders data. There is some work done already and the technology could be tested through JERICO S3 or GROOM II.
Sensor Information could be stored in SensorML files located under a URL. Gliders data files are also identified under a doi. The two could point one to the other to complete the metadata information on sensor and deployments.

Action: Antonio Novellino, Dan Hayes, Peter Thijsse. Can we imagine some king of “testing/use case” through GROOM II and JERICO S3?

5. Priorities for the next 2/3 years for Data Management

- Priorities for real time data flow:
    - Clarifying the management of the data and metadata at the mission level.

Action: Need to discuss this directly with Coriolis, ETT, JCOMMOPS – short term – Seems to be some misunderstanding here.

    - Implementation of OG1.0
    - Facilitating the recruitment of new glider teams.

- Delayed mode data flow
    - Helping the PIs toward glider DM.
    - Community approach? Regional focus, EOVs focus, Guidance for EuroGOOS GTT.
        - First step: Which methodology for glider DM?

        - Second step: How to implement the methodologies (DM-Operator)?
        - Third step: How to fund this activity?
    - Data flow and sensor ML to cope with DM issues
    - Tools should be based on OG1.0 format.
    - Summary of the situation (see Ferry boxes documentation).

EuroGOOS GTT should play a central to promote and coordinate effort within the different projects toward those objectives.

6. White paper

White paper on data management and data flow has been suggested.

Any good will to start this?