



OceanGliders Steering Team Meeting Minutes – Draft version

Teleconference – Thursday 10th of December, 15h30 UTC – 17hUTC

Attendees: Grace Saba, Pierre Testor, Brad De Young, Emma Heslop, Craig Lee, Dan Hayes, Dan Rudnick, Simon Ruiz, Charitha Pattiaratchi, Scott Glenn, Johannes Karstensen, Victor Turpin, Ilker Fer, Karen Heywood.

Website Review

Update of the OceanGliders website

Updating the website is necessary. The maintenance of the news and bibliography sections needs a clearer procedure to make sure this section is up to date.

✓ Actions:

Set a team to work on the website update: **Victor will ask member to join the team - mid Feb**

Collect the information from the steering team and feed the website on a quarterly basis: **The website team - Q1 2021**

Explore the google scholar and Zotero solution to better manage the publications and report to the steering team: **set a team - Q1 2021**

Graduate students may be interested in contributing to OceanGliders information flows. We will request names from the steering team to play that role. **(who?)**

Add hurricane glider references from US community web page to OceanGliders reference website and [doi:10.1029/2020JC016505](https://doi.org/10.1029/2020JC016505) : **Victor, Scott and Chari - Q1 2021**

Status and Tools at OceanOPS to monitor the OceanGliders program

Report on the progress made at OceanOPS to monitor OceanGliders

The progress made by OceanGliders in terms of monitoring of its global activity has been presented (see presentation [here](#)). A lot remains to be done to improve the real time monitoring of the program and the priorities are listed here:

- Complete registration of IOOS glider mission
- Complete registration of EGO historical glider missions
- Correct errors in the OceanOPS data base on data link on IOOS and IMOS glider mission
- Validate the “Observing Program” description.
- Promote RT data flow across the community and improve monitoring.

✓ Comments:

Divide the number of glider days at sea by the number of days in a month. This will show the number of gliders at sea on average during the month.

Scott Glenn will identify some historical glider missions not available at the IOOS DAC that could be ingested in the OceanOPS database.

The steering team agrees on the need to advertise this result to a wider community by picking out interesting numbers to direct people to have a look at this new capability. It may trigger new glider teams to join the OceanGliders effort. Other channels should be considered (such as?).

✓ Action:

A1: Set up a call with Dan Rudnick on indicator to measure OceanGliders activity : Victor and Dan R. - Q2 2021

A2: Initiate the registration of historical US glider missions : Victor and Scott - Q2 2021

A3: In January, draft a first proposal to communicate and get back to Emma, Pierre, and Brad to review and define the communication channels. Victor, to be reviewed by Emma, Pierre and Brad. - January

A4: Promote and clarify GTS upload procedure for gliders. Announce BUFR template when it is approved in mid-January: Victor with the support of the dedicated data management working group - January

Financial support to OceanOPS

Status of financial support to OceanOPS.

Presentation is available [here](#).

In 2019 and 2020 OceanGliders coordination activity was adequately funded but was strongly dependent on EU projects and one contribution from EMODNET.

Expectations for 2021 also lead to a positive balance supported by US and UE project contributions.

The main challenges:

- Lack of cash flow due to irregularity of some national contribution
 - Contributions from EU projects will decrease in 2022.
 - The international diversity of funding source is not achieved from OceanGliders
- ✓ Comments:

National contributions are weak and uncertain; actions should be taken to broaden, diversify and stabilize nation funds in favour of OceanGliders coordination activities.

What makes the case to countries is to demonstrate these activities: get the data to the place where we can track and monitor, best practices, data availability, tasks team contributions to the understanding and forecasting of crucial scientific questions is vital for the networks.

Many countries already support coordination activity for other OCG networks (ARGO, Go-Ship, DBCP). Adding OceanGliders support along ARGO support in the same pot of money, and deciding how it should be distributed is an option to simplify the procedure.

Funding flow has been simplified. Emanuela Russiano from OceanOPS can support on funding flow.

✓ Action:

A5: Creating an update on where OceanOPS activities stand, progress made, the status and value of what we have been able to achieve and bring that to institutions to suggest contributions. **Victor, this action is related to the A4**

A6: Along with a communication package on progresses made by OceanGliders thanks to OceanOPS support, seek National contribution from IMOS, DFO, UiB **(Charitha Pattiaratchi, Brad De Young, Ilker Fer)**.

A7: Report back to NOAA (Derrick Snowden) about progresses and expend funding to integrate historical data set into the OceanOPS database **(American Steering Team members)**.

Second Meeting – Monday 14th of December, 15h30 – 17h UTC

Attendees: Grace Saba, Pierre Testor, Brad De Young, Emma Heslop, Craig Lee, Dan Hayes, Dan Rudnick, Simon Ruiz, Charitha Pattiaratchi, Scott Glenn, Johannes Karstensen, Victor Turpin, Ilker Fer, Karen Heywood

Planning community meetings

Plan for 2022 - 9th EGO meeting? (Noting that in person meetings are unlikely in 2021)

In person meetings are the usual way to show tangible results. Every 3 years is a good pace. This leads us to May 2022 to organize the next EGO meeting. Even if it is hard to decide now, we are still on track to maintain this deadline. By sometime next year it is expected to be back to normal.

As many entities will plan to hold an in-person meeting in 2021, the plan is to organize a virtual gathering in spring 2021. And wait until 2022 to organize an in-person meeting.

Plan for virtual meeting in 2021 – Best Practices meeting in the framework of EuroSea H2020 project.

Under the European project EuroSea, the European glider community will organize a virtual meeting about best practices by Spring 2021. This virtual meeting will be broadened to the global glider community. This meeting may also be an opportunity for the task teams to hold sub-group meetings and to hold a glider discussion to focus on their specific activity.

Ocean Health and ecosystem and Storms task team are interested to join the meeting.

Pierre Testor is EuroSea lead on this. Contact him for any suggestion about the agenda.

An ongoing community work about best practices is available: [see on line document](#) (link also available in the supplementary material)

Membership

The steering team identified geographical, gender and diversity gaps in the composition of the steering committee.

Asia is underrepresented compared to the glider activity in this region.

Diversity is also highly encouraged by the steering team

Nomination and rollover processes should be defined.

The steering team also wants to make sure members link OceanGliders to other activities: Ocean modelling, data assimilation, UN Decade Project and Programmes.

✓ Actions

A8: First boot strap to fill the gaps with already available names and then propose a process for nomination and roll over process. **Steering Team – Q2 2021**

A9: Distribute names (strength and opportunity this person brings to the group) and then we do an assessment list. **Steering Team – Q2 2021**

A10: Announce a process for nomination and roll over for spring meeting **Steering Team – Q3 2021**

A11: Call for people in underrepresented regions that are active with gliders Asia (South Asia, Indians, Taiwan, Korea, Caribbean, South African, Brazil, Peru glider groups are active too). **Invitation will come from the steering committee. Q4 2021.**

G7 Glider related activities

Katy Hill and Maria Hood are active in G7 planning around the ocean. They have contacted Brad and Pierre about G7 glider plans. We have a good connection with those 2 people, and it is a good opportunity to influence G7 discussion.

We get to offer feedback to Katy and Maria on how they should present this to G7 (i.e. prioritize and renew). The priorities discussed during the first OGST meeting are listed in the annex.

Task Teams Status

The Storms Task Team:

✓ Update

North Atlantic hurricane glider program

It is coordinated by Ben Lacour. This is the third year of the hurricane glider program. It increased by 20% since last year (glider days and profiles). Goal in 2020 was 3000 glider days and 150 000 profile send on the GTS was achieved. Hurricane gliders data access has been set up.

US Navy has assimilated the 163022 glider profiles made available on the GTS in 2020 by the Storm glider task team in their global model. This achievement starts the value chain for the hurricane forecast for the ocean side in the US.

This is a very successful program that will continue in 2021.

Korea Typhoon glider program

The TYPHOON glider program in Korea is developing now. It is focused on Yellow Sea tropical storms lead by Hak Soo Lim. Gliders have been deployed to sample storms and data are assimilated to improve storm forecasting.

IMOS storm glider activity

Tropical (north) and extra tropical (south) storms are tracked by the IMOS glider activity. It has been an initial focus was on tropical storms because of the great needs of ocean observations for forecast and the sensor where available. But with new sensors coming online (LISST, Microrider) the extra tropical storms are going to be of higher interest for the storm task team.

Caribe Corredores OceanShots glider program.

Doug Wilson (Caribbean group) leads this glider program. 3 observing systems are part of this activity:

1. build up HF radar network on the windward Island to follow Amazon and Orinoco river plumes come into this area,
2. gliders flying along the island to get the flow through the passages,
3. surface drifter equipped with salinity sensors goes downstream into the Caribbean to monitor how the plumes are distributed into the Caribbean.

✓ Next steps

Doug Wilson and Hak Soo Lim will be nominated to the steering team.

NOAA is going to invest into a new data assimilation technique – mid 2021- and make it operational for the global ocean model that will ingest glider data. This is a great opportunity of OceanGliders to make sure our database is being used by this new assimilation activity.

We still lack Hurricane OSEs and OSSEs that are not funding and share those results with Australia.

Update working group membership with Caribbean, Mexico, Canada members.

New sensors “Mircorider” and “LISST” sensors are suited to study extra tropical storms with glider. This new area will be investigated by the task team.

✓ Comment

Finding the gliders that contribute to the storm effort is not easy globally. How to introduce categories in the gliders into OceanOPS systems.

Considering unique data access for OceanGliders.

OCG is interested in dedicated special sessions on storms across networks.

✓ Actions

A12: Metadata management: introduce categories (“OceanGliders science themes or categories”) and encourage users to provide this information in the metadata files. **Dan H. Victor and the data management group - Q1 2021**

A13: Work with the data management team to build a unique access and repository for data. **Dan H. and Victor - Q4 2021**

A14: Integrate historical storm deployments in the OceanOPS system. **Scott, Victor - Q2 2021**

A15: Produce an OceanGliders storm brochure. **Chari, Scott, Victor - Mid-January**

BOON task team

✓ Update

After several meetings of the BOON team, progress has stopped since March due to the pandemic situation.

The BOON map was produced by the team for the OceanObs paper. Team members contribute to this map and calculate the geostrophic velocity of the along shore flow in several places. This was an achievement that has helped to start a community.

The BOON flyer was effective and useful to advertise OceanGliders activity in general and BOON particularly.

Goal remains 100 sustained glider sites worldwide. The Task Team is still on track to achieve this goal despite the delay over this year.

✓ Next steps

Establish a BOON Governance,

Set up an implementation plan

Participate in a regional planning process where gliders are embedded.

Get involved in “OceanPredict” and the Boundary System task team.

✓ Priorities

Sustained observations in the Ocean boundaries with the goal of 100 glider sites in the next 5 to 10 years.

Encourage regional investment in glider

Establish standards and create products.

Improve forecast.

✓ Comment

“CoastalPredict” (<https://www.coastpredict.org/>) is a sort of coastal version of “OceanPredict”. It is a UN Decade program of the ocean science for sustainable development. Joaquin Tintore is BOON task team member and co-chair of “CoastalPredict”.

Water Transformation

Update

Not much has been achieved since the survey about “which key regions and variables to observe” sent in late 2019. Only a few answers from the initial groups has been collected.

✓ Next steps

The idea is to pass on the leadership of this task to someone interested in studying water transformation with gliders and motivated by this coordination activity.

Spring meeting should be a good opportunity for this.

Ocean Health and Ecosystem

✓ Update

Grace Saba and Oscar Schofield put together a one pager defining what the scope and overarching goals of what the task team is and will try to accomplish.

A list of potential people to ask about their interest in joining the task team is being set.

✓ Next steps

Grace will send email to the list of people asking to participate in the task team.

Once established, full group will: (1) Validate the goal of the task team, and (2) Set an implementation plan

Spring meeting will be very valuable to this group to make progress together.

✓ Comments

Spring meeting is a good target for the task teams to make progress.

Set a common structure of the task team description on the website. How does that fit into the GOOS and OCG expectation? Define generic elements from the task team to be covered by its description (link to services, connection to users, value of this application, key users, data management, OCG needs?).

Develop flyers for each of the task teams to visualize. Following the BOON flyer style.

✓ Actions:

A16: Grace reach the participants of the task team and start planning to work as a group toward spring meeting. **Grace - Q1 2021**

A17: Victor/Grace get the description of the task team on the website. -- **Victor and Grace January 2021**

Best practices

✓ Update

The task team has identified an approach and gets the team together a few times for calls. The goal of the task team is to have an overarching paper with a series of sections following the life cycle of an operation.

EuroSea project has funding to support best practices activity. A workshop on best practices will be organized in spring 2021 with the aim of putting together the first draft of each section.

The spring meeting will also invite people to think on further papers focused on variables. This approach should lead to the production of Standard Operation Procedure (SOP) by variables that could be easily accessible by the community.

✓ Actions

A18: Set a group from the steering committee to help to plan the spring meeting. **Q1-2021**

A19: Organize another steering committee before spring meeting is required. **Pierre, Brad, Victor February**

Data management

✓ Update

The task team is large and inclusive. GDACs, DACs and data managers are part of the group. The task team works with a slack group with different channels. Dedicated working groups have been set up to achieve goals like format harmonization, BFUR format and delayed mode data management.

The BUFR format working group is finalizing the new BUFR template that could become operational by June 2021.

The format harmonization working group is finalizing the ToR. The document will be open to the community for discussion before being implemented by glider groups, data assembly centers and global data assembly centers.

The following timeline has been agreed by the working group:

- Open for discussion to the community – until March 2021
- Implementation – until September 2022
- Unique format – January 2023
- ✓ Next steps

Open for discussion to the community – until March 2021

Work on good practices documents to support GTS upload by glider groups and submit to OBPS repository.

Supplementary material

- **Financial support to OceanOPS**

https://docs.google.com/document/d/1f_ocxbQxDcoaiLao0vLkwDLSO5NeI7IS/edit#

- **OceanOPS report card**

[Ocean Observing System report card prepared by the GOOS Observation Coordination Group and OceanOPS, and produced by OceanOPS](#)

- **OceanOPS 5-year strategy**

<http://www.ocean-ops.org/strategy/>

- **Best Practice online document**

<https://docs.google.com/document/d/1RbyO7TLof14v2eCdk1YY3BWJdtPDLn3GxoysTemEiq8/edit>

- **G7 priorities:**

Here are old priorities of the previous G7 discussion. They may be relevant to the ongoing discussions.

Some were completed and others may no longer be so relevant.

- ü GLID5: A report identifying priority locations and key partners for new glider observations on ocean boundaries.
- ü GLID6: Review existing plans for Arctic and Antarctic observing and identify potential applications for gliders. Summarize technological and infrastructure requirements that would be required to meet these needs.
- ü GLID7: Develop reports to be white papers for the OceanObs '19 conference (COMPLETE)
- ü GLID8: Support an office for the coordination of the global glider observation effort in the GOOS framework. Will facilitate implementation of common data management and QC standards, and promote sharing, dissemination, and utilization of data products. (COMPLETE)
- ü GLID9: Maintain c. 10 existing and develop 10 new sustained year-round boundary observations lines
- ü GLID10: Establish 3 sustained Arctic summer observation lines
- ü GLID11: Establish 3 sustained Antarctic summer observation lines in support of Southern Ocean Observation System
- ü GLID12: Implement an internationally recognized framework for sharing glider data in real time and in delayed mode.
- ü GLID14: Increase EOVs of sustained glider observation (boundaries and polar) to include nutrients and the carbonate system
- ü GLID15: Maintain 20 boundary lines, 3 Arctic lines and 3 Antarctic lines (as established in 2-year action plan)

ü GLID17: Develop and begin implementation of acoustic navigation and communication networks to allow basin-scale, year-round sampling of the Arctic and Antarctic by gliders and floats.

ü GLID18: Extend BOON to sustain observations every 500km along boundary of global ocean and major enclosed seas

· **Membership**

Members	Role	Membership
Pierre Testor (FRA)	Chair	Sept 2016
Brad de Young (CAN)	Co-Chair	Sept 2016
Daniel Rudnick (USA)	Boundary Currents TT Leader	Sept 2016
Craig Lee (USA)	Boundary Currents TT LCo-eader	Sept 2016
Scott Glenn (USA)	Storms TT Leader	Sept 2016
Grace Saba (USA)	Ocean Health and Ecosystem TT Leader	May 2018
Oscar Schofield (USA)	Ocean Health and Ecosystem TT Co-Leader	May 2018

Daniel Hayes (CYP)	Data Management TT Leader	Sept 2016
Victor Turpin (FRA)	Data Management TT Co-Leader	Sept 2016
Emma Heslop (UK)	GOOS Advisor	May 2018
Charitha Pattiaratchi (AUS)	Steering Team member	Sept 2016
Johannes Karstensen (GER)	Steering Team member	Sept 2016
Karen Heywood (UK)	Steering Team member	May 2018
Mark Inall (UK)	Steering Team member	Sept 2016
Joanne O'Callaghan (NZ)	Steering Team member	May 2018
Elena Mauri (ITA)	Steering Team member	Sept 2016
Ilker Fer (NOR)	Steering Team member	June 2019
Simon Ruiz (ESP)	Steering Team member	Sept 2016

- **Note on membership gender balance:**

13 Male, 5 Female.

- **Note on membership geographical distribution**

- North America: 6 members

- ü Europe: 10 members
- ü Oceania:2 members
- ü South America:0 members
- ü Asia:0 members
- ü Middle East:0 members
- ü Africa: 0 members