



## AtlantOS GA – WP3.4 Side Meeting – Minutes

21th of November 2017

14:00pm - Haliades Room

### List of attendees

Attendees	Reference Institution	Institution Country	email
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### Session : Opening, meeting objectives and quick update on international coordination

#### 1. Opening and objectives of the meetings

Pierre Testor welcome the audience and thank PLOCAN for the organisation of this side event of AtlantOS GA and recall the objectives of a side meeting within the Atlantic Glider community :

- Reporting on the AtlantOS deliverables progress
- Updating on Atlantic glider groups activities
- Reporting and open discussions about important topics (deliverables, data management, international coordination).

#### Plans for 2018

- Preparation of OceanObs'19

OceanObs'19 will be organized from the 16th to 20th of September 2019 in Honolulu (Hawaiï, USA). The submission process is announced to start by the end of the year under the following agenda :



Submission process will start in winter 2017 : « *A call for abstracts for OceanObs'19 white papers will go out to the community in late 2017. Then the OceanObs'19 Program Committee will solicit community white papers to be submitted by Sept 2018 based on those abstracts or merged groups of abstracts. The papers will be peer reviewed and published in an open access journal before the conference. The Program will include plenary and parallel session presentations and posters based on an open abstract submissions process to shape the content of the conference.* » -

Glider groups are encouraged to contribute to the OceanObs19' call for abstract to promote their work and highlight the importance of gliders in the Global Ocean Observing System.

- 8th EGO meeting

Discussion around the organisation of the 8<sup>th</sup> EGO meeting should start soon and a date will be announced rapidly. It has been agreed that EGO meetings should occur every 2/3 years. With OceanObs19' it is probably a nice opportunity to program the EGO meeting in 2018.

- Best practices

There is currently a lot of work going on around best practices production see :

<https://www.frontiersin.org/research-topics/7173/best-practices-in-ocean-observing>. The Atlantic and broader glider community should contribute to this effort. More information here :

<http://www.oceanbestpractices.net/>

- upcoming International conferences

04/12/2017 - 05/12/2017	<a href="#">International Conference on Ocean Literacy</a>	UNESCO Regional Bureau for Science and Culture in Europe
11/12/2017 - 15/12/2017	<a href="#">AGU Fall meeting in New Orleans (11-15 Dec)</a>	New Orleans
11/02/2018 - 16/02/2018	<a href="#">OSM 2018</a>	Portland
08/04/2018 - 13/04/2018	<a href="#">European Geosciences Union (EGU) General Assembly 2018</a>	Austria Center Vienna EGU session on gliders OS4.4/BG3.8
28/05/2018 - 01/06/2018	<a href="#">50th International Liege Colloquium on Ocean Dynamics - Announcement</a>	Liege Colloquium Liège, Belgium
31/05/2018 - 01/06/2018	<a href="#">European Maritime Day in Burgas</a>	Burgas, Hungary

### 3. Update on international coordination

- Current status of GROOM II

The project has been submitted in April 2017 (3M€, 13 partners) – Ranked at 13/15 - 1st on the reserve list. There are on-going “political” discussions to try to have it funded. A position paper have been send to stakeholders (EMSO, EuroARGO, JERICO NEXT, EuroGOOS, Copernicus Marine Services) for endorsement.

- EuroGOOS TT

After 2 years since its creation, the EuroGOOS Glider Task Team reaches more than 80% of its initial targets. The task team will renew its membership and Terms of Reference to align with EuroGOOS longer term strategy. A meeting with Glenn Nolan and Patrick Gorringer is planned for the 5<sup>th</sup> of december

- OceanGliders program

The OceanGliders website should be launched by the end of the year. The Atlantic glider community is strongly encouraged to connect with OceanGliders Task Team leaders.

OceanGliders milestones :

OOPC meeting - 13th to 17th of March for TT harmonization

WMO/IOC JCOMM-OCG meeting - 14<sup>th</sup> to 18th of May - Brest OCG

### Session : Glider Activity and Data Management (D3.11 – August 2018)

#### 4. Glider team report on glider activity and plan

You can find the presentation of the different groups here :

- [UiB](#) : is involved in the Nansen Legacy projet (2018-2023) with intensive field work planned
- [SAMS](#) is planning new glider mission in 2018 focusing on slope current and frictional control. They have recently increased their measurment capacity to turbulence with a microstructure sensor on a glider.
- [NOC](#) presented their “OceanID-C2” project. NOC has invested a lot in a national e-infrastructure to manage AUV. From piloting to data management.
- [PLOCAN](#) has recently increased their technological capacities and plan multiplaform deployment in the next years.
- [PROOCEANO](#) is involved in the second step of “Project Azul”. It will be the occasion to set up an operational data management process between PROOCEANO and EGO.
- [CNRS](#) is maintaining the two endurance lines in north western Mediteranean and actively contributed to observations in the Atlantic thanks to JERICO TNA.

Johanness Karstensen from GEOMAR attended the board meetings running in parallel.

From a sustainable point of view, it is noticable that the groups who present their glider activities in the Atlantic are repeatedly sampling the same lines since the begining of the AtlantOS project.

The recent funding of Azul Project (phase 2) supported by PROOCEANO could bring new endurance lines in the south Atlantic.

Many groups have provided an update on publications and dissemination. One can find the list in annex.

## 5. Update on glider Data Management in the Atlantic

- Status by Glider Groups

	registration	DAC	metadata management	EGO format	diffusion du DAO	DOI	action to take
GEOMAR	ok	Coriolis	ok	ok	ok	PANGEA	get past deployment / Manage DOI
PLOCAN	ok	Coriolis	ok	ok	ok	?	DOI ?
SAMS	ok	BODC	to be check	not yet	not yet	?	Keep pushing to make UK data available - deadline ? End of the year ? Set up RT data transfer ?
NERC/MARS	recently	BODC	to be check	not yet	not yet	?	
UIB	recently	NMDC	to be check	to be check	to be checked	?	Validate the datasets – Set up RT data transfer
CNRS	ok	Coriolis	ok	ok	ok	SEANOE	real time data from upgraded SeaGlider and Spray

Many improvements have been made since the last AtlantOS GA and there are still only few issues to fix with UK and Norwegian DACs.

- GDAC is currently checking if the EGO format produced by UiB can be disseminated.
- NOC is working on the development of a more integrated system for AUV's. It has been agreed that by the end of the year the first set of UK EGO format will be tested by GDAC.

CNRS will meet Coriolis GDAC early December to update on DAC delivery.

It has also been agreed that a teleconference will be set between CNRS and BODC by the end of the year to keep moving forward with this issue.

It is critical that the Atlantic Glider team sets up an efficient data management system under the AtlantOS project.

- Improvements made within the last 12 month

Since the last AtlantOS GA, lots of effort have been made on the data management process, in particular toward new glider groups. These tools and documents are regularly updated and freely available on EGO website.

- Gaps

There is a necessity to increase our connection with western and south Atlantic glider activities. CNRS has attended the US Glider Workshop in January 2017, the Canada glider data management meeting in February 2017 and the Glider School (Las Palmas) in order to fill these gaps.

## 6. Glider DOI Strategy

We have set up the possibility to assign DOI to any glider data set through Coriolis.

At the moment, CNRS, GEOMAR already associate DOI to their glider datasets and the other partners will likely do the same but there is a need to organise the management of DOI to make sure one single DOI is associated to any dataset.

## 7. Delayed Mode

A particular effort will be made on glider delayed mode quality control by the end of the project.

DAC/GDAC and PIs should get together to initiate such strategy.

## 8. EGO V1.3 – open discussion

A new version of the EGO format (V1.3) is under preparation by GDAC Coriolis. Evolutions are mainly related to arrival of new sensors in the network. This evolution should be made smoothly and V1.2 will keep being valid for submission.

## Session : glider app' (D3.6 – August 2017)

### 9. presentation of the glider app'

Lovro Valcic presented its development of the glider app'. The deliverable has been submitted in time to the project coordination . **The glider app' has been developed to reach two targets : Piloting for SAMS gliders and Outreach.**

### 10. how to benefit form this development ?

At the moment, the outreach part can not be exploited yet. It will be improved to be usefull for the entire EGO community. It has been agreed to further develop the glider app to meet the AtlantOS Task 3.4 requirements, adding the following capabilities to the existing EGO based interface:

- Filtering by
  - Date range (set to last month by default)
    - Country (list of unique fields from the available EGO data + Unknown)
    - Institute (list of unique fields from the available EGO data + Unknown)
    - Active (activity in last 24h)
- Show all filtered tracks on the map, dynamically colour coded by filter choice
- OPTIONAL (if feasible): Show 2D Temperature, Salinity, Oxygen, and Florescence plots
  - All mission
  - Last 7 days
  - Deal with missing plots/data »

## Session : Easter Boundary Survey (D3.12 – August 2018)

### 11. Open discussion on how to report on eastern boundary region

GEOMAR is in charge of this deliverable :

« *The second objective deals with the enhancement of the observation network (D 3.11). Lead by GEOMAR, all participants (GEOMAR, BRUCIN, NERC, PLOCAN, SAMS, University of Bergen) will be involved. The Atlantic EGO glider network will cover the Eastern boundary regions in key areas (eastern boundary region in the tropical Atlantic, Maraconesian area, subpolar gyre (OSNAP) and the Atlantic inflow in the Norwegian Sea).* »

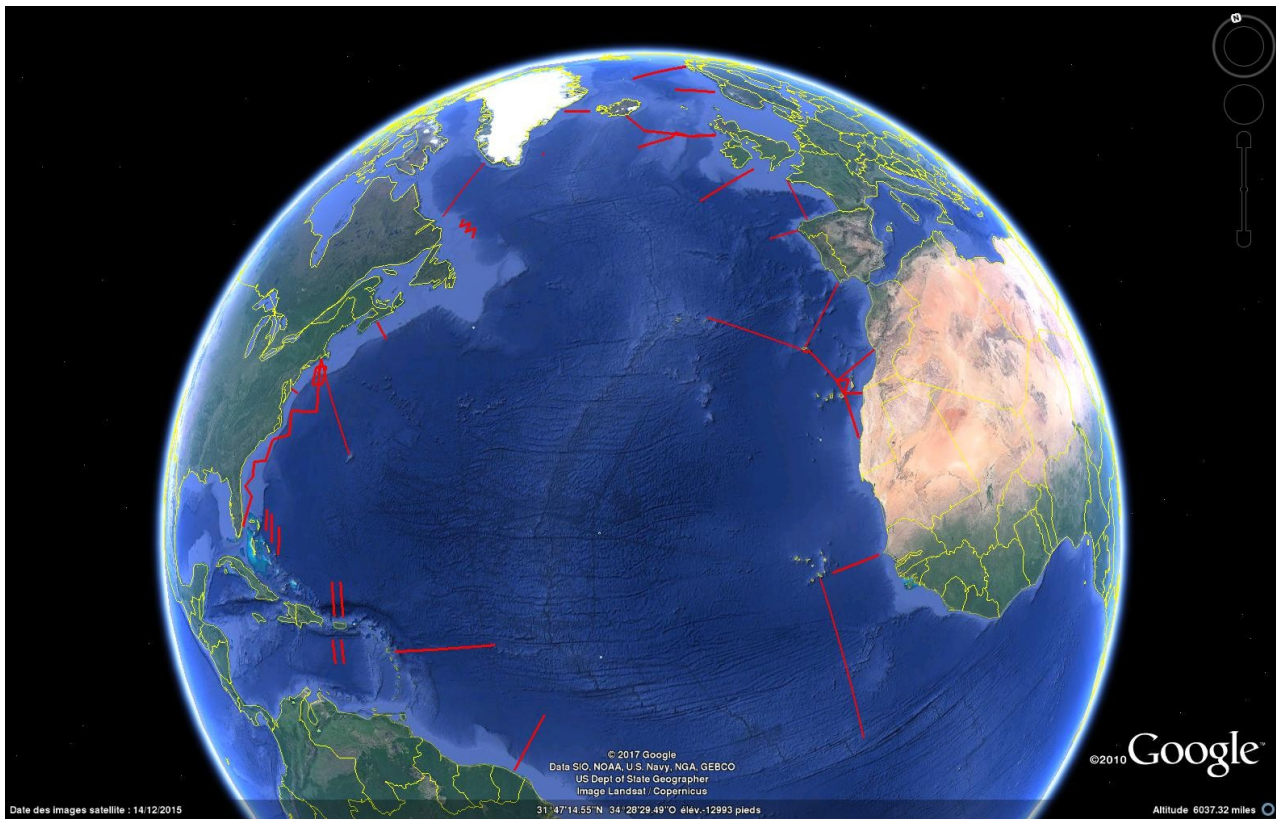
“ *This deliverable will be a report on glider surveys in eastern boundary regions, key regions for the Atlantic fishery and connected with the WP4 (Coastal). Survey, sampling and data delivery in these regions is investigated and reported.* ”

The Atlantic gliders partner's will be asked early 2018 to report about their glider activities in eastern boundary region. Many endurance lines are maintained since several years (Lofoten/Svinoy, OSNAP/Extended Ellett Line, ESTOC and the Macaronesian Ocean-Observing program). GEOMAR will synthetise the different information to produce the deliverable by the end of August 2018.

## Session : highlights from GA and other side events

### OSSE meeting :

A design of a 2030 vision of the Atlantic glider observing network will be delivered to Mercator Ocean.



North Atlantic glider Network for AtlantOS - OSSE

This design represent what could be a sustained glider network in north Atlantic in 2030. It is based on OceanGliders Task Team past and future project and on what already exist.

### Blueprint and the 2030 vision of Atlantic Observing Network:

Our opinion on the present draft of the blueprint is that it lacks just a little bit of focus when descibing the ocean observation networks and applications.

Publications & posters	
Hall, R. A., B. Berx, and M. E. Inall (2017), Observing internal tides in high-risk regions using co-located ocean gliders and moored ADCPs, <i>Oceanography</i> , doi:10.5670/oceango.2017.220.	SAMS
Houpert, L., M. E. Inall, E. Dumont, S. F. Gary, C. Johnson, M. Porter, W. E. Johns, and S. A. Cunningham (2017), Transport and energetic small structure of the Eastern North Atlantic gyre from observations, <i>Journal of Geophysical Research</i> , submitted.	SAMS
Jones, S., F. Cottier, M. Inall, and C. Griffiths (2017), Decadal variability on the European continental shelf, <i>Progress in Oceanography</i> , under revision.	SAMS
Porter, M., M. E. Inall, A. C. Dale, J. Hopkins, J. A. Barth, M. Palmer, D. A. Smeed, D. Aleynik, and C. Mahaffey (2016), Glider observations of enhanced deep water upwelling at a shelf break canyon: a mechanism for cross-slope carbon and nutrient exchange, <i>Journal of Geophysical Research</i> , 121(10), 7575-7588, doi:10.1002/2016JC012087	SAMS
Marsh, R., I. D. Haigh, S. A. Cunningham, M. E. Inall, M. Porter, and B. I. Moat (2017), Large-scale forcing of the European Slope Current and associated inflows to the North Sea, <i>Ocean Science</i> , 13(2), doi:10.5194/os-13-315-2017.	SAMS
Grundle, D., C. Löscher, G. Krahnemann, M. Altabet, H. Bange, J. Karstensen, A. Körtzinger, B. Fiedler, Extreme N <sub>2</sub> O activity in an oxygenated ocean, <i>Nature Scientific reports</i> , 7: 480, doi:10.1038/s41598-017-04745-y, 2017.	GEOMAR
Karstensen, J., Schütte, F., Pietri, A., Krahnemann, G., Fiedler, B., Grundle, D., Hauss, H., Körtzinger, A., Löscher, C. R., Testor, P., Vieira, N., and Visbeck, M.: Upwelling and isolation in oxygen-depleted anticyclonic mode-water eddies and implications for nitrate cycling, <i>Biogeosciences</i> , 14, 2167-2181, doi:10.5194/bg-14-2167-2017, 2017.	GEOMAR
The Ocean Observing System for Santos Basin: Project Blue, Da Rocha et al., June 2014, ASME 2014 33rd International Conference on Ocean, Offshore and Arctic Engineering, DOI : 10.1115/OMAE2014-23231	PROOCEANO
Dos Santos FA, de Oliveira ALSC, Soares FLM, Carvalho GV, São Tiago, PM, Santos, NG, Garção HF, Pimentel FP, Boechat AC, Mariano LS, Bergman C, Rinaldi FL, Miranda TC, Cabral MM, da Cruz LMM, Pellegrini JAC, Assad LPF, Landau L, Fragoso MR (2015) Projeto, Azul: operational oceanography in an active oil and gas area south-eastern Brazil. In: Liu Y, Kerkering H, Weisberg RH (eds) Coastal ocean observing systems, 1st edn. Elsevier, London, pp 99–116. doi: 10.1016/B978-0-12-802022-7.00020-1	PROOCEANO
Fragoso et al. (2014), A 4D-variational ocean data assimilation application for Santos Basin, Brazil, <i>Ocean Dynamics</i> , 66:419–434, DOI 10.1007/s10236-016-0931-5	PROOCEANO
Fer et al. (2014) Fer, I., A. K. Peterson, and J. E. Ullgren, 2014: Microstructure measurements from an underwater glider in the turbulent Faroe Bank Channel overflow. <i>J. Atmos. Oceanic Technol.</i> , <b>31</b> , 1128–1150, doi: <a href="https://doi.org/10.1175/JTECH-D-13-00221.1">https://doi.org/10.1175/JTECH-D-13-00221.1</a>	UiB
Creed et al. (2015). Integration of a RSI microstructure sensing package into a Seaglider. <i>Oceans 2015</i> .	UiB
Peterson, A. K., and I. Fer, 2014: Dissipation measurements using temperature microstructure from an underwater glider. <i>Methods Oceanogr.</i> , <b>10</b> , 44–69, doi: <a href="https://doi.org/10.1016/j.mio.2014.05.002">https://doi.org/10.1016/j.mio.2014.05.002</a>	UiB
Dissemination	
Ocean'17 MTS/IEEE ABERDEEN 19th-22nd 2017	PLOCAN
OceanSciences2018 – Abstract submitted	PLOCAN

Inall, M. E., S. Jones, D. Aleynik, and E. Dumont (2017), MASSMO3: Comparison between glider data, WeStCOMS model and Hydrobase3 observational climatology. Report., SAMS, Oban	SAMS
Houpert L.et al., Transport Structure and Energetic of the North Atlantic Current in Subpolar Gyre from Observations. EGU General Assembly 2017, 23–28 April 2017, Vienna, Austria	SAMS
Glider use in the seasonal ice zone (2017), Marie Porter, Finlo Cottier, Byongjun Hwang, Estelle Dumont, Emily Venables. UK Arctic Science Meeting September 2017	SAMS
Glider as part of a multi-platform study (2016), M. Porter, M. E. Inall, J. Hopkins M. R. Palmer, A. C. Dale, D. Aleynik, J. A. Barth, C. Mahaffey, D. A. Smeed. Scottish Alliance for Geoscience Environment and Society annual general meeting	SAMS
Scottish Parliament engagement event: Gliders for environmental science. November 2017. Loic Houpert, Mark Inall, Stuart Cunningham.	SAMS
Arctic Circle forum, Edinburgh 19-21 November 2017. Inall	SAMS
Organizing committee: Irminger Sea Regional Science Workshop November 8-9, 2017, National Oceanography Centre, Southampton, U.K.	GEOMAR
Editorial work: Editor Frontier Research Topic "Best Practices in Ocean Observing" <a href="https://www.frontiersin.org/research-topics/7173/best-practices-in-ocean-observing">https://www.frontiersin.org/research-topics/7173/best-practices-in-ocean-observing</a>	GEOMAR
Underwater glider observations of the Brazil Current offshore Cabo Frio, Southeastern Brazil, dos Santos et al. (2016) Ocean Sciences Meeting 2016 - New Orleans	PROCEANO

#### Comming Actions :

- **Set meeting with BODC for roadmap – Before 2018**
- **Update on the glider app'**
- **Meeting with PROCEANO to initiate opertational data management of their endurance lines – before 2018**
- **Meeting with GDAC for a general update – Beofre 2018**
- **Initiate integration of gliders in JCOMMOPS – Before OCG mid may**
- **Set up a Glider Data Management Meeting – April/Mai 2018**
- **Renew EuroGOOS membership and ToR – Before EuroGOOS Chair meeting 31<sup>st</sup> of January**
- **Initiate production of WP3.4 Deliverables – Before February 2018**
- **Deliver 2030 vision of the Glider Atlantic Network.**
- **Prepare and encourage glider groups contribution in OceanObs'19 – early 2018**