



kick Off meeting AtlantOS - T3.4 report

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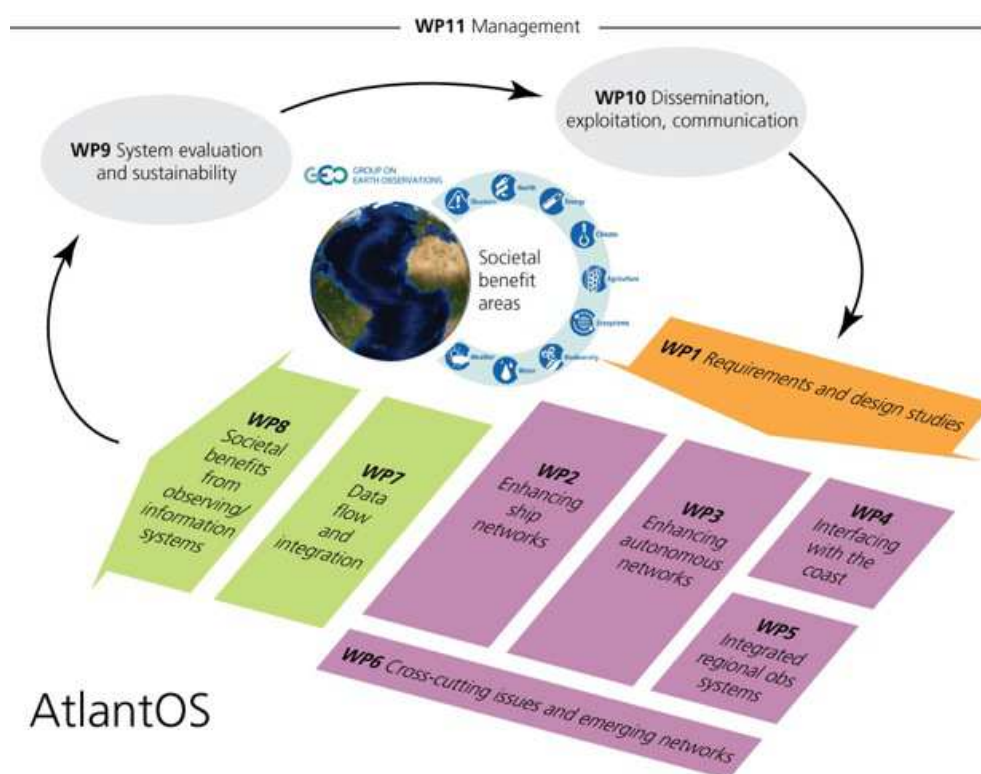
Introduction

The meeting was held in Bruxelles from the 09th of June to the 12th 2015.

This document reports on what is expected from the glider network in the framework of AtlantOS and proposes a work plan.

This document also reports on the WP3 and WP7 side meetings and discussions we had during the meeting.

An informal glider data management meeting was organized as a side event.



Glider community in AtlantOS is directly involved in :

WP3: Enhancing autonomous network, lead by Hervé Claustre

Tasks 3.4: Optimize the glider network in Atlantic Ocean, lead by Pierre Testor

This task has been discussed during the WP3 meeting. We agreed to focus on several major bullet points.

- Monitoring the deployments in order to have a global and quick vision of the glider activity in the Atlantic. This monitoring will consider the past and present deployments. (D3.11)
- Planning the future deployment needs to be done for a better management of the real time data. (D3.11)
- Monitoring the data flow to make sure data are quickly available and identify potential bottlenecks and line drops. (D3.11)
- Strengthening the international collaboration across the North and South Atlantic. The following map shows European and Non-European partners with which we plan to collaborate during the project. (D3.11)

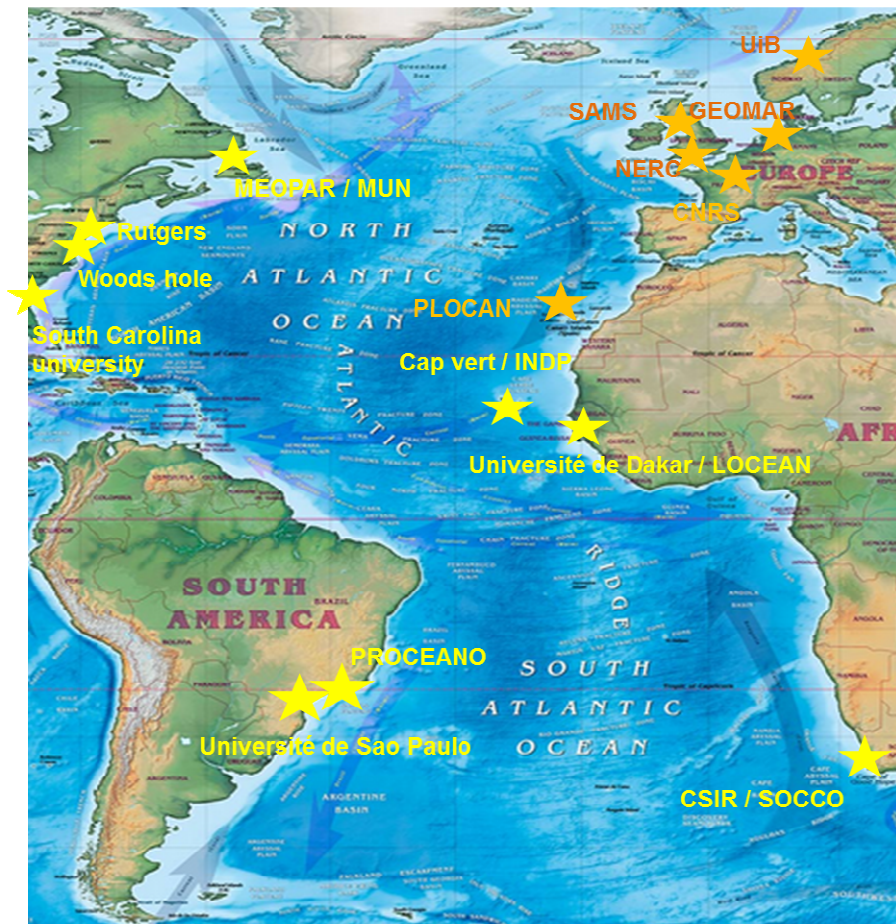


Figure 1: map of the Atlantic Glider Teams

- Scientific work has to be done concerning the eastern boundaries survey but the real content of that deliverable has to be discussed between the European partners who carry out such surveys, at least. This task could be linked with WP4 and WP1. (D3.12)

- A glider app for mobile will be developed during the project. This deliverable should take into account many aspects such as, outreach and piloting and has to be linked with WP10. (D3.6)

WP4: Interfacing with the coast

The work considered in WP4 is about the monitoring of the coastal ocean in the Celtic Sea. Matthew Palmer and Charlotte Williams are in charge of analyzing glider (biogeochemical) data. Strong interactions with WP3-WP4-WP7 are expected on the glider aspects.

WP7: data flow and integration – report on side meeting lead by Sylvie Pouliquen

The panel of the side meeting was made of network representative (Argo, moorings, drifters, gliders, fish surveys, ships, Continuous Plankton Recorders, sea floor mapping, animal tracking), integrator representatives (COPERNICUS, Seadatanet, EMODNET, GEOSS, OBIS) and EOVs representatives. EOV have been defined for AtlantOS and describe here for each network.

	Networks												
	WP2					WP3					WP4		
	GOSHIP	SOOP	CFR	Fisheries and zooplankton	Seafloor mapping	Argo	Glider	Drifter	Oceanbit	EATN	Tide Gage	Ferrybox	
Temperature	100%	100%			100%	100%	100%	100%	100%				100%
Salinity	100%	X				100%	100%	10%	100%				100%
Current	X					100%		100%	X				
Sea Level									X		100%		
Oxygen	X					10%	50%		X			X	
Chl	X					5%	50%		100%				100%
Nitrate	X					2%	2%		100%				100%
Carbon	X	X											X
Plankton			100%										
bottom depth					100%								
Fish survey				100%									
zooplankton				100%									

Figure 2: Essential Ocean Variables compared to AtlantOS Ocean Observing networks

Main Objectives

- Acquire data once, but use it many times
- Provide open, free data
- Agreement on data sharing and data traceability
- Do not reinvent the wheel. AtlantOS will rely on existing standards and vocabularies and on progress made in past decade on Marine data management and sharing (SeaDataNet, Copernicus, EuroGoos, Emodnet)

Data sharing will be done through standardized interfaces, which in turn will necessitate establishing minimum levels of standardization and interoperability. This requires:

- Minimum sets of standard metadata will be linked to its associated data using a common platform ID system, relying on mapping to standard vocabularies for variables (CF and SDN

vocabulary), using the European Directory for Marine Organizations coding system, and WORMs as the authority for taxa.

- Information about the quality of the data must be provided to users. This will be done by establishing a scale of quality flags, and reporting the level of QC processing that has been realized on the data. Agreement was reached that a minimum level (to be defined) of QC is needed on real time data. No harmonization on delayed-mode assessment is envisaged in AtlantOS but the glider network must aim for that.
- The full data cycle from observation to provision has to be documented and easily retrievable.
- Basic services to be provided for data discovery, viewing and downloading
- Integrators that will aggregate data are providing additional value to the data by providing additional delivery services: easier discovery, targeted viewing services, integrating downloading services and performing additional assessment at EOVS or regional levels.

Specific suggestions to be addressed:

- There are new Essential Ocean Variables (EOVs) that will be identified, in WP1 in particular. These EOVS will need to be considered in the data management.
- All data acquired will be considered for the data management in AtlantOS. These are not only measurements for EOVS, but also technical. One never knows if they might be needed for post-processing.
- It is recommended that NRT-QC recommended procedures and the data management handbook developed in the WP will be provided to WP6 for inclusion in the catalogue of best practices
- Interoperability with satellite data was mentioned as desirable, and it was agreed that it may be more efficient to link to Copernicus Marine Service to maximize the benefits of having both in situ and remotely measured information (e.g., for calibration/QC, optimizing experimental design, etc.).

On the longer term:

- We need to greatly improve and expand our traceability of data. We want to be able to easily determine what products are developed with what data, so that work can be confirmed/repeated/expanded (new data products) with easy to follow links back to appropriate data sets.

Glider community in AtlantOS are indirectly involved in :

WP1 : Requirements and design study

Impact studies will be carried out through the project. OSE / OSSEs (Ocean System Evaluation / Observing System Simulation Evaluation) are great tools to assess the usefulness of a glider network in forecasting systems. The impact of existing or new sustained glider repeat-sections will be assessed. Particular attention must be paid on the metrics used to measure the impact of the glider data. The risk is to reach the conclusion that gliders are not that important in the Integrated Atlantic Observing system. To avoid that WP1 requires some input from and interactions with the glider network. Pierre Testor and Victor Turpin attended the breakout session "Network design and impact studies" and will organize the work on this question in close relation with Pierre Yves Le Traon and Mercator Océan.

WP9 : System evaluation and sustainability

Glider are involved in Tasks 9.1: System monitoring/evaluation. One of the main tasks we have to achieve in AtlantOS will be to set up a monitoring system of the glider array. This task has been discussed in WP3 and WP7. The gliders will have to feed the global Atlantic Monitoring System develop in T9.1.

Tasks 3.6 concerning the development of the glider app will be have to be linked with WP9 .

WP10 : Dissemination, exploitation, communication

Tasks 3.6 concerning the development of the glider app will be also linked with WP10. Tasks10.7 : web-based and social media communication could be of great advice for the design of the outreach part of the glider app'. The choices of development, at least for the outreach part will necessarily be set in accordance or advised by Tasks9.2: web-based monitoring tools of the Atlantic Observing System.

Report on the glider data management side meeting.

Participant : Justin Buck (BODC), Charlotte William(NOC), Kevin Horsburgh (NOC), Pierre Testor (CNRS), Claire Gourcuff (CNRS), Thierry Carval (IFREMER), Jose Joaquin Hernandez-Brito (PLOCAN), Fred Whoriskey (Ocean Tracking Network), Victor Turpin (CNRS).

AtlantOS is a great opportunity for the glider community to test our organization and capacity to produce and deliver a great amount of data. Being able to deliver the entire dataset in real time and in delayed mode at the end of the project is absolutely crucial for the community to be recognized as an observing system on our own.

Objectives of the project must be **100% data visible** and an **efficient monitoring system of the array, and also of the data flow**.

We had 40min to discuss the following questions :

- What is the current situation in Europe for glider data management?
- What is the current situation about the EGO format in US, Canada and Australia?
- Evolution of EGO format what kind of mode of operation (governance) do we want?

What is the current situation in Europe for glider data management?

Discussion focuses mainly on the difficulties to collect all the European glider data.

French situation

- French gliders real-time data are distributed on EGO GDAC, NetCDF format version 1.0, trajectories and profiles. Profiles sent to Copernicus and GTS (Slocum)
- The French gliders deployments real-time data have been reprocessed and distributed on GDAC (the deployments registered in DT-INSU metadata base)

On-going Activity

- Upgrade seaglider data processing to switch from *.bpo to *.eng-*.log
Work is in progress with Amerigo Italian glider
- Recovery of high resolution (slocum) data (Céline Bachelier and Jean-Philippe Rannou)
- Delayed mode data quality control (Claire Gourcuff)

Planned activities

- Upgrade to EGO V1.1 (in particular for metadata containers)
- Update if need be the EGO manual (feedback from Claire or others)
- Review the latest version of US NCEI Glider NetCDF
- Upgrade the format checker to EGO V1.1
- Manage bio-parameters : oxygen (DOXY), chlorophyll-A (CHLA)
- Implement automatic QC on trajectories
- Web pages for glider deployments : description, graphics and data access for each deployment based on the EGO data file
- Manage DOIs : one per glider deployment ?

Norwegian situation

- The matlab toolbox and explanation were sent to IMR. Thierry has to contact Sjur Lid Ringheim and Helge Sagen for a feedback.

German situation

- Geomar gliders recent deployments (2013...) are processed by Coriolis DAC (seagliders Katrin Latarius, Wliken-Jon von Hapen)

Spanish situation

- Glider data from PLOCAN are processed by Coriolis DAC

British situation

- A first batch of glider deployments were sent by Justin, will be uploaded to GDAC. Justin and Kevin explained that making data accessible is difficult in UK. They plan to find a solution for real time data in the next year. It is a long process to make this acceptable by NERC. They have a 2 year embargo on data at the moment (mainly on biological data). Some PIs follow this procedure and their data are then not visible. There should be no problem for the UK teams involved in AtlantOS to deliver their data during the project. It was also mentioned the glider data collected in the framework of sustained observations should be public (before, during and after the project).

At the moment the data management system set up during GROOM is working relatively well but there are few issues that need to be fixed.

Pierre opens the idea of a publication (with doi) of a glider data set (real time and/or delayed mode) in the Atlantic. The Atlantic glider deployments data could be published with explanations about processing, quality control... and serve as a reference (versioned, the QC is likely to evolve in the near future) for the glider data processing and QC.

What is the current situation about the EGO format in US, Canada and Australia ?

Justin talks about ODIP, a project between US/UK and Australia where they work on the EGO format. The three formats in Australia, US, and Europe are quite similar but we have to converge to a single format. International (EGO) Glider Steering and Data Management Teams are being set up with the support of the JCOMM. Progress could be made in that framework. Canada was represented by Fred Whoriskey from Ocean Tracking Network. Together with Brad de Young they are trying to organize the glider activity at the national level. They will have a meeting in June to discuss that. They plan to follow the model of IOOS in the USA and their data will be available to the project through their system.

We need to organize a meeting of the EGO glider network soon to fix and detail all these issues.

See planed meetings

Action Items WP3

Action	Description	Who?	Planned date
A-1	Planning next EGO and AtlantOS T3.4 meetings	Coordination	To be planned by the end of August.
D3.6 Glider app for public dissemination, outreach and Piloting			
A-2	Discussing and defining the content of the App	SAMS, BRUNCIN, CNRS	Dec 2015
A-3	Technical specification	SAMS, BRUNCIN, CNRS	Mar 2016
D3.11 Consolidation of Atlantic EGO Network (Activity report)			
A-4	Data flow – access to a complete glider data sets	All partners (apart from BRUNCIN)	Aug 2018
	<ul style="list-style-type: none"> Evaluation of DAC/GDAC organization Visiting AtlantOS partners WP7 meeting preparation 		End of 2015 Starts on Dec 2015 Sep 2015
A-5	Glider Array Monitoring	All partners	Aug 2018
A-5.1	Deployment planning tools - prototype	All partners	Sep 2016
	<ul style="list-style-type: none"> access to deployment info – skype meeting Technical specification 		Dec 2015 Mar 2016
A-5.2	Monitoring Tool - prototype	Coordination	Sep 2016
	<ul style="list-style-type: none"> content and access to monitoring info – skype meeting Technical specification 		Dec 2015 Sep 2016
A-5.3	Link with tasks T9.1	Coordination	Aug 2018
A-6	International collaboration	All partner	Aug 2018
A-6.1	Strengthen the Non-European Atlantic glider community		Aug 2018
	<ul style="list-style-type: none"> Contact / Visit non-European glider Atlantic team EGO enlargement process 		Sep 2016 / Mar 2017 Sep 2017
A-6.2	Report on EuroGOOS Task team		Sep 2017
A-6.3	Report on glider Science team / Data management team JCOMM-OCG		Sep 2017
D3.12 : report on glider Eastern boundary survey			
A-700	Report on eastern boundary survey	All partners	Aug 2018
A-7.1	Discussion about the eastern boundaries deployments planned		Mar 2016
A-7.2	Road map for eastern boundaries deployment		Sep 2016
Relation with other AtlantOS WP			
A-8	WP1	EuroGOOS and ???	Apr 2018
A-8.1	WP1 – T1.2 – D1.3; Contribute to capacity and gap analysis report (???)		Apr 2017
	<ul style="list-style-type: none"> Deciding the Glider contact point for that tasks Contact Erik Buch and work definition 		<ul style="list-style-type: none"> Sep 2016 Dec 2016
A-8.2	WP1 – T1.2 – D1.4 ; contribute to cost and feasibility study (CNRS)		Apr 2017
	<ul style="list-style-type: none"> Reset and improve the GROOM questionnaire Collect answers and report 		<ul style="list-style-type: none"> Apr 2016 Apr 2017
A-8.3	WP1 – T1.3 – D1.2/D1.5/D1.6 ; report on OSSE (CNRS)		Oct 2018
	<ul style="list-style-type: none"> contribute to Design OSSE Conclude on OSSE Guidance for IAOOS evolution 		<ul style="list-style-type: none"> Apr 2016 Apr 2018 Oct 2018
A-9	WP4	???	Oct 2018
A-9.1	WP4 – T4.1 – D4.5; contribute to gap analysis of links between coastal and open ocean networks.		Oct 2018
	<ul style="list-style-type: none"> Deciding the Glider contact point for that tasks Contact Guillaume Charria and work definition 		<ul style="list-style-type: none"> Sep 2016 Dec 2016

A-9.2	WP4 – T4.2 – D4.3; contribute to synoptic multi-variable multi-glider study. (???) <ul style="list-style-type: none"> • Deciding the Glider contact point for that tasks • Contact Matthew Palmer and work definition 		July 2018 <ul style="list-style-type: none"> • Sep 2016 • Dec 2016
A-10	WP10	GEOMAR (Johannes?)	October 2018
A-10.1	WP10 ; Contribute to communication and outreach for gliders <ul style="list-style-type: none"> • Deciding the Glider contact point for that tasks • Contact Jan-Stefan Fritz and work definition 		October 2018 <ul style="list-style-type: none"> • Sep 2016 • Dec 2016

AtlantOS WP3 – T3.4 - Contact list

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AtlantOS WP3 – T3.4 – Atlantic Glider teams Contact list

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Planed meetings

- WP7 meeting : December 2015 - Paris
- AtlantOS annual meeting : Mai-Juin 2016 – Kiel
- WP3 meeting : Mai-Juin 2016 – Kiel

- Glider school : October 2015 - Canarias island
- EGO Meeting and Glider School : September 2016 – Southampton ?