Tasks 3.4 – Enhancement of the Glider network

AtlantOS GA – Side meeting

Partners : BRUNCIN, CNRS, GEOMAR, NERC, PLOCAN, SAMS, UiB

Author: Victor Turpin
Date: 21/11/2017
Version: WP3 AtlantOS – Task 3.4

Tasks 3.4 : « Gliders »
Opening, meeting objectives and quick update on international coordination

Objectives of task 3.4

Enhance the glider community and the glider contribution to the Atlantic Observing system.

Improve/Demonstrate sustainability of the network

Better organize the data flow and data dissemination

Highlighting our capacity to maintain sustainable observatories and contribute to high quality science

Objectives of this meeting

Report on the AtlantOS deliverables progress

update on Atlantic glider groups activities

Report and open discussions on important topics (deliverables, data management, international coordination).

Tasks 3.4 : « Gliders »
Opening, meeting objectives and quick update on international coordination

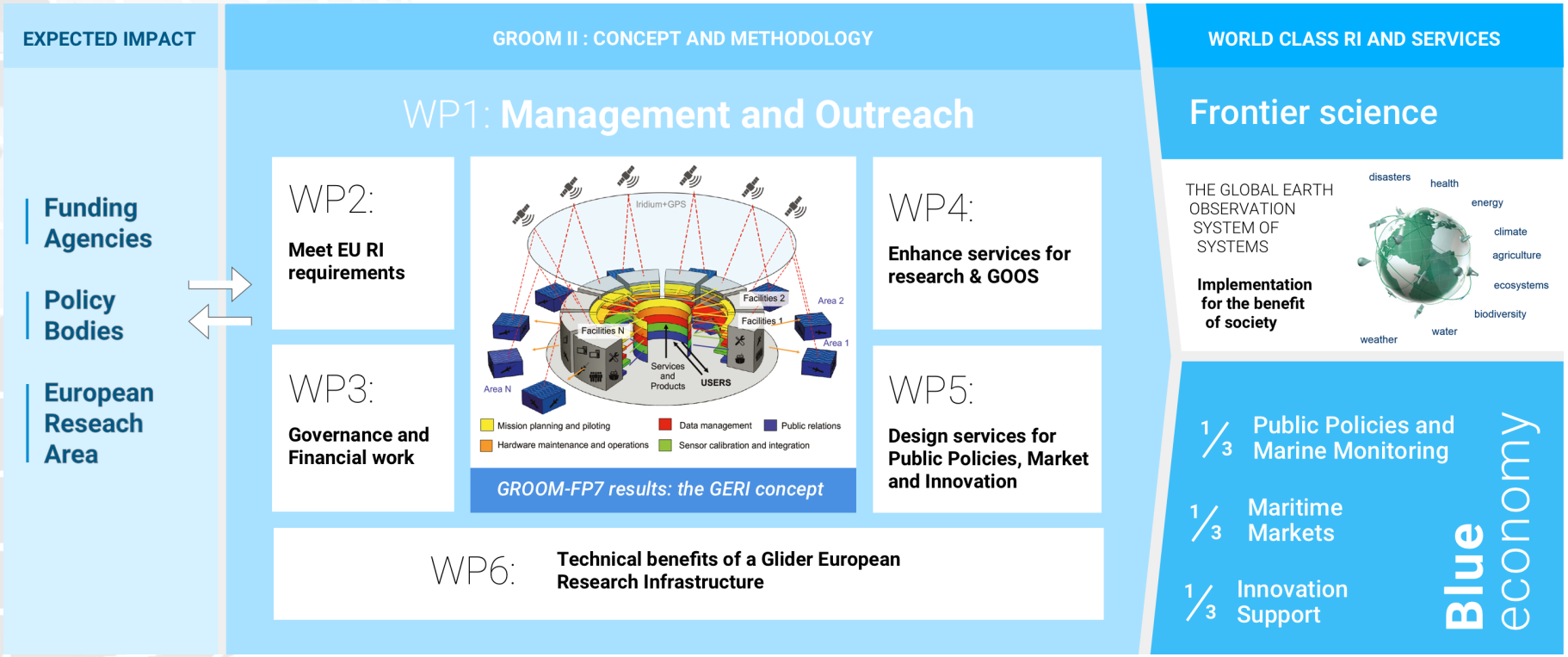
Update on International Coordination

current status of GROOM II :

Project submitted in April 2017 (3M€, 13 partners) – Ranked at 13/15 - 1st on the reserve list

On Going “political” discussions to try to have it funded. Position paper signed by stakeholders.

Main objectives of the project :



Tasks 3.4 : « Gliders »
Opening, meeting objectives and quick update on international coordination

EuroGOOS glider TT

Promotion of the glider group (ToR 1)

Action	Term	Status
ToR and roadmap	**IP**	✓
Core group definition, adding strategic members	**IP**	✓
Draft an implementation plan for a glider component in the GOOS at the global scale, a common scientific international program for sustained glider observations	**ST**	✓
Seek funding for joint/coordination activities	**ST**	
Interact with existing initiatives in other countries (USA, Australia, South Africa, Mexico, Chile, Peru...)	**IP**	

Development of standards (ToR 2)

Action	Term	Status
Publish and promote the results of the FP7 GROOM design study (website)	**IP**	✓
Promote best practise with gliders, the usage of GROOM standards and formats (website)	**ST**	✓
Develop tools for better monitoring the glider data flow	**MT**	

IP = In Progress ; **ST** = Short Term < 2 years ; **MT** = Medium Term > 2years

Tasks 3.4 : « Gliders »
Opening, meeting objectives and quick update on international coordination

EuroGOOS glider TT

Towards providing a framework to glider users (ToR 3)

Action	Term	Status
Create website for the group in the EuroGOOS framework. Organization of the information (topics) in the website (news, links, …?)	ST	
Repositories for software	ST	
ResearchGate group/topic?	ST	
Organization of the next (7th) EGO meeting and Glider School in 2016 (and every two years)	ST MT	

Towards the EOOS (Tor 4)

Action	Term	Status
Reporting on existing European and national glider initiatives (work plan, results…)	ST	
Strengthen the network of “gliderports”	IP	
Assess the sustainability of the glider activity. Help partners to join the ESFRI roadmap.	MT	
Identify specific added value products of gliders that can be useful for specific stakeholders	ST	

EuroGOOS glider TT

We have reached about 80% of our objectives (ToR)

- The two years loop of the Glider Task Team implementation plan

Need for membership and ToR renewals : « Find our place in the middle between « Bottom-Up » and « Top-Down » approaches »

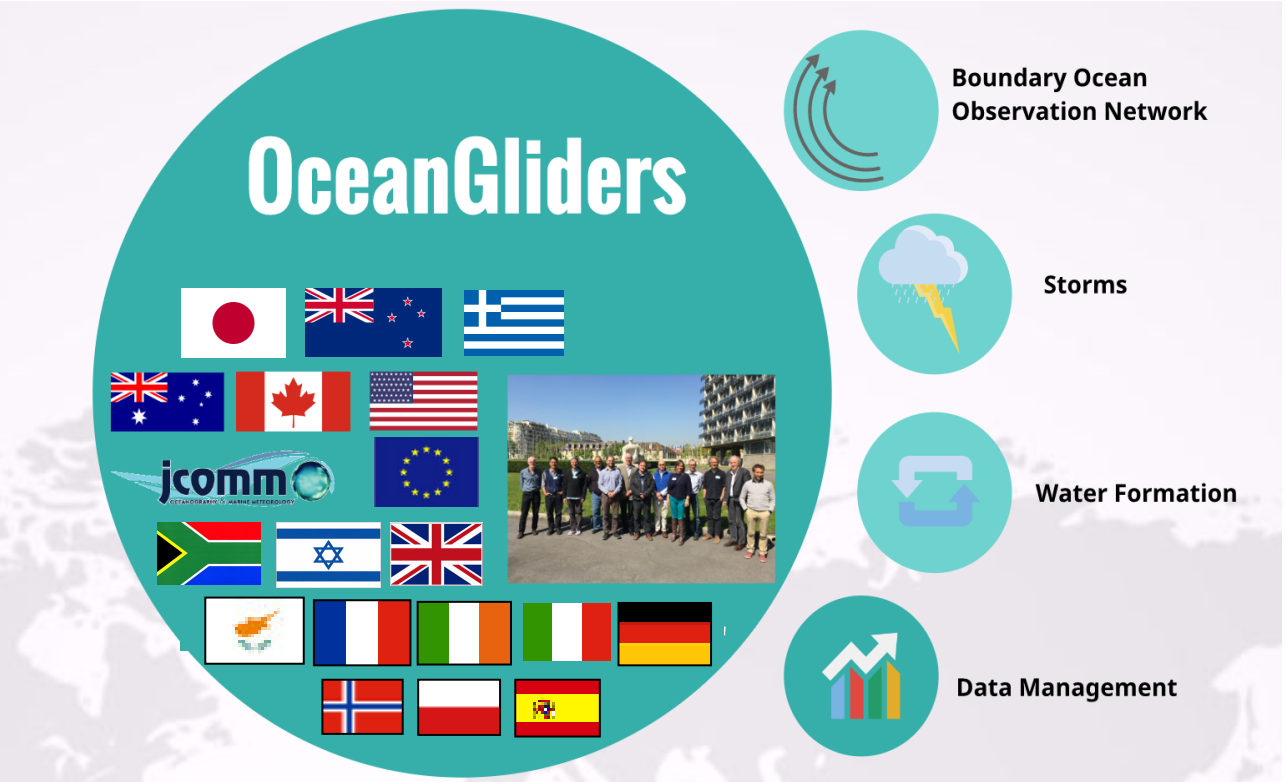
Tasks 3.4 : « Gliders »
Opening, meeting objectives and quick update on international coordination

OceanGliders Programme

What is it ?

project approval by JCOMM-V : associated program to the GOOS/GCOS like Argo/OceanSITES/….

Organisation and membership



+ New Task Team proposal : Polar reagions

OceanGliders Steering Team

A steering team for the glider component of the GOOS/GCOS has been be created with the objectives to:

- strengthen the glider community and facilitate the sustained use of gliders globally
- launch and maintain an international glider program as a component of the GOOS/GCOS
- summarize and report on global glider sustained activities to WMO/IOC JCOMM-OCG

1st meeting of the Glider Steering Team at the 7th EGO conference at NOC, Southampton, UK, 26-29 September 2016

→ ToRs agreed
→ 'OceanGliders' program name agreed
→ G7 discussion
→ Formation of 4 Task Teams (TTs)

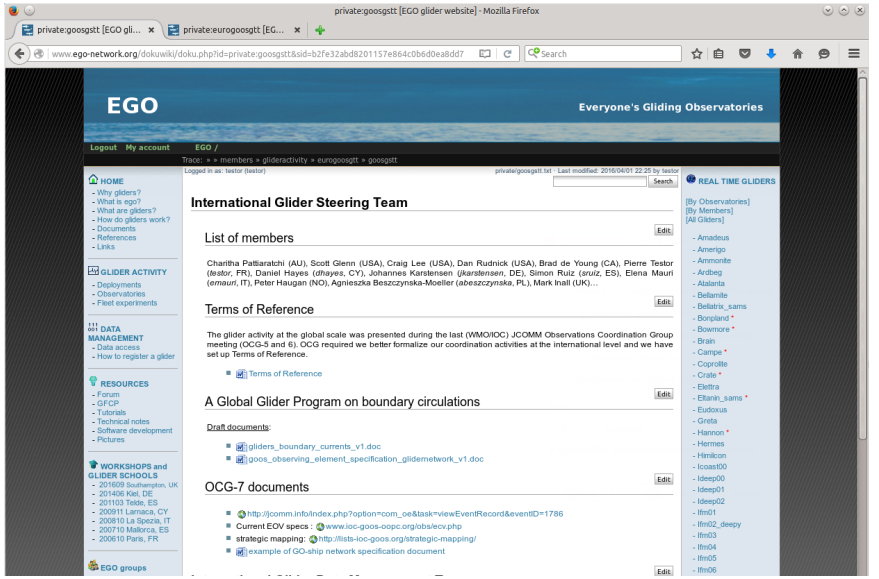
Launch of the OceanGliders program!

OceanGliders Steering Team

Steering Team:

Pierre Testor, CNRS, France (Chair, Water Transformation TT Leader)
Bradley de Young, Memorial University of Newfoundland, Canada (Co-Chair)
Katherine Hill, WMO (GOOS advisor)
Daniel Rudnick, Scripps Institution of Oceanography, USA (Boundary Currents TT Leader)
Craig Lee, Univ. Washington, USA (Boundary Currents TT Co-Leader)
Scott Glen, Univ. Rutgers, USA (Storms TT Leader)
Charita Pattiaratchi, IMOS, Australia (Storms TT Co-Leader)
Daniel Hayes, Univ. of Cyprus, Cyprus (Data Management TT Leader)
Victor Turpin, CNRS, France (Technical coordinator, Data Management TT Co-Leader)
Mark Inall, SAMS, United Kingdom
Johannes Karstensen, GEOMAR, Germany
Peter Haugan, Univ. Bergen, Norway
Laurent Mortier, ENSTA-ParisTech, France
David Smeed, NOC, United Kingdom
…

Need to engage !



More info (reports/minutes, documents, presentations) on:
http://www.ego-network.org/dokuwiki/doku.php?id=public:goosgstt

OceanGliders Steering Team

Based on 2-years mandates, the Steering Team will nominate the Executive Committee (composed of the Chair, the co-Chair, the TT Leaders and the GOOS advisor) and new Steering Team members, based on a limited number of rules related to required expertise and representativeness (in terms of task teams, gender balance and geography).

Executive Committee:

Chair : Pierre Testor
Co-Chair : Bradley De Young
Task Team Leaders : Dan Rudnick, Scott Glenn, Pierre Testor, Dan Hayes, Craig Lee
GOOS advisor : Katherine Hill

OceanGliders TaskTeams

- Boundary Currents (D. Rudnick) Develop a global-scale program for ocean boundary currents
- Storms (S. Glenn/C. Pattiaratchi) Develop a global-scale program for enhanced ocean observations to support forecasts of storms/hurricanes, air-sea interactions
- Water formation (P. Testor) Develop a global-scale program for convective zones
- Data management (D. Hayes) Develop policies and procedures for the collection, processing and management of glider data

Other ideas/suggestions welcome (e.g. Polar regions)

OceanGliders Task Team principles

- Require a proposal approved by OGST
- Include international in membership
- Meet regularly (both virtually and in person)
- Report to the Steering Committee annually
- Present at EGO meetings
- Normally operate within two years (OceanObs'19 = important milestone)
- No money only prestige

OceanGliders last Steering Team meeting

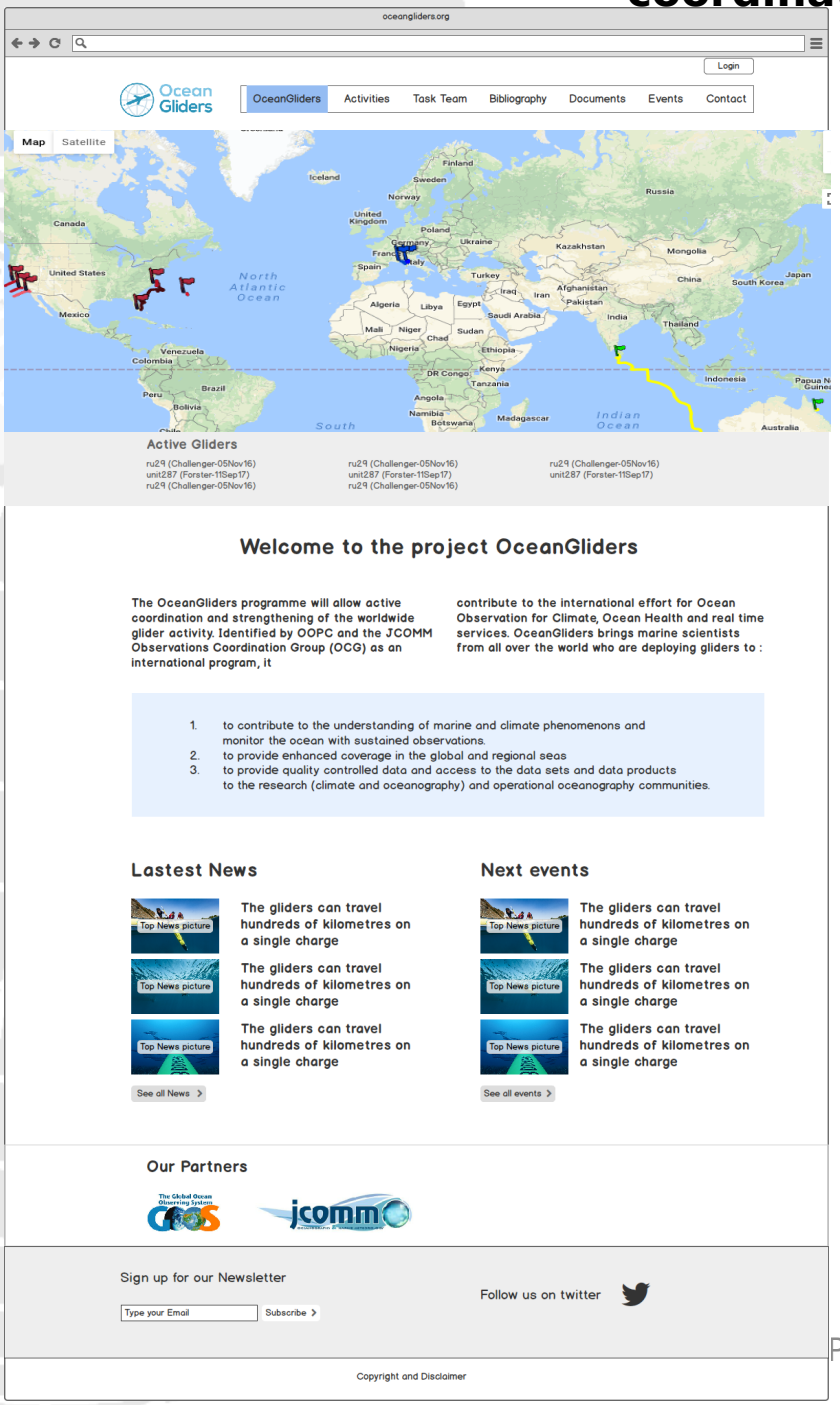
2nd meeting of the OceanGliders Steering Team at UNESCO, Paris, France, 20-21 April 2017

- Governance rules adopted
- Plans for the international/regional communities
- Water Formation TT → Water Transformation TT
- Hurricanes, Storms TT → Storms TT
- A new proposed TT: Polar regions (C. Lee)
- Need for harmonizing TT documents
- G7 discussion continued
- Plans/strategies for engagement in multiplatform design;
- Short Term Action plan agreed → Actions/recommendations

Presentations at:

- US Glider Workshop, Infinity Science Center, MS, 18-19 Jan 2017,
- Canadian Glider Data Management Workshop, Victoria 7-8 Feb 2017,
- EuroGOOS Executive Board meeting, Brussels, Belgium, 7-8 Mar 2017
- Eighth GOOS Regional Forum Meeting, Singapore, Singapore, 5-7 September 2017
- Application of glider technology for sustained oceanographic observations under climate variability and climate change, Lima, Peru, 12-14 November,

Tasks 3.4 : « Gliders »
Opening, meeting objectives and quick update on international coordination



www.oceangliders.org

Website publicly realeased by the end of the year

- Real Time glider map
- Task Teams
- Main achievements (outreach)
- bibliography
- event and news advertisment

Plans for 2018

AtlantOS : Deliverable « report on eastern boundary region » - GEOMAR (August 2018)

AtlantOS : Deliverable « enhancement of the glider network » - CNRS (August 2018)

Engagement of the Northewest Atlantic Contribution
- Entry of Canadian glider program in the EGO network (DFO)
- Preliminary discussions with OOI. Good link with IOOS.

Engagement of the southern hemisphere contribution to EGO
- South Africa, Brazil…
- (Australia, New-Zealand, Peru and Chile)

EGO meeting ?

OO19’
- Best practices review / update
- Abstract opens by the end of the year / close in March 2018
- QA/QC white paper

Meetings where Glider Network should be represented ?
Coming calls ?

Tasks 3.4 : « Gliders »
Glider Activity and Data Management (D3.11 – August 2018) – Lead CNRS

Glider teams report on activities / plans / scientific production

SAMS

MARS/NOCS

PLOCAN

GEOMAR

UiB/NACO

CNRS

Tasks 3.4 : « Gliders »
Glider Activity and Data Management (D3.11 – August 2018) – Lead CNRS

EGO contributors agreed on a common NetCDF-CF file format to manage glider metadata and data.

- *EGO gliders NetCDF format reference manual version 1.2.* *http://doi.org/10.13155/34980*
- *EGO gliders Quality Control on time series and profiles data* *http://doi.org/10.13155/51485*
  - Real-time quality control
    - 14 quality controls derived from Argo real-time QC
  - Delayed mode quality control
    - A long work underway
    - Physical parameters
    - BGC parameters
- *EGO gliders data processing chain http://doi.org/10.17882/45402*
- *EGO gliders NetCDF file format checker http://doi.org/10.17882/45538*
- *EGO gliders DOI services on demand http://doi.org/10.17882/51432*

Development of a full chain of Real Time data management services for all gliders in the network to feed all data integrators systems :

GTS, Copernicus Marine Services, EMODNET, SeaDataNet, EGO, OceanGliders

These documents are evolving under the request of glider groups, thanks to the support of Coriolis GDAC

Tasks 3.4 : « Gliders »

Glider Activity and Data Management (D3.11 – August 2018) – Lead CNRS

18 month meeting in Kiel

	registration	DAC	JSON production	EGO format	Diffusion to GDAC	action to take
GEOMAR	not always	Coriolis	???	ok	ok	Make sure we gather all the deployments
PLOCAN	ok	Coriolis	no	no	ok	make data and Json file up to date available to the DAC
SAMS	ok	BODC	ok	no	no	keep pushing to make UK data available
NERC/MARS	no	BODC	no	no	no	keep pushing to make UK data available
UiB	no	UiB	not yet	not yet	no	make sure the UiB is supporting his DAC rôle in the community
CNRS	ok	Coriolis	ok	ok	ok	improve automatisation of Json production

30 month meeting in PLOCAN

	registration	DAC	metadata management	EGO format	diffusion du DAC	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 transfert ?
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

Glider DOI Strategy

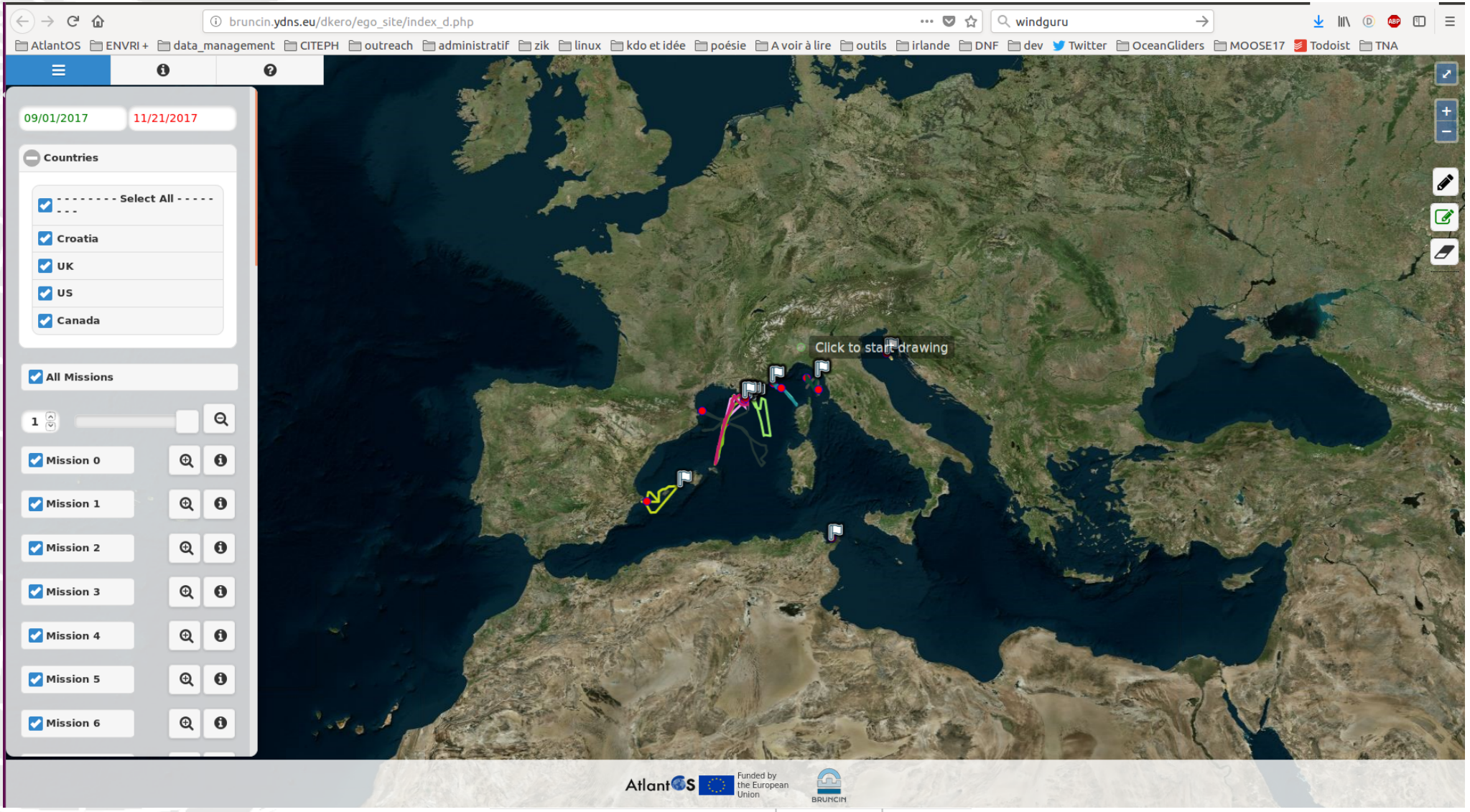
- How does it works ?
  How's interested.
- Traceability, compatibility with PANGEA
- Staying tuned with your dataset ?

Delayed Mode : Need for a strategy at the network level ?

EGO format V1.3

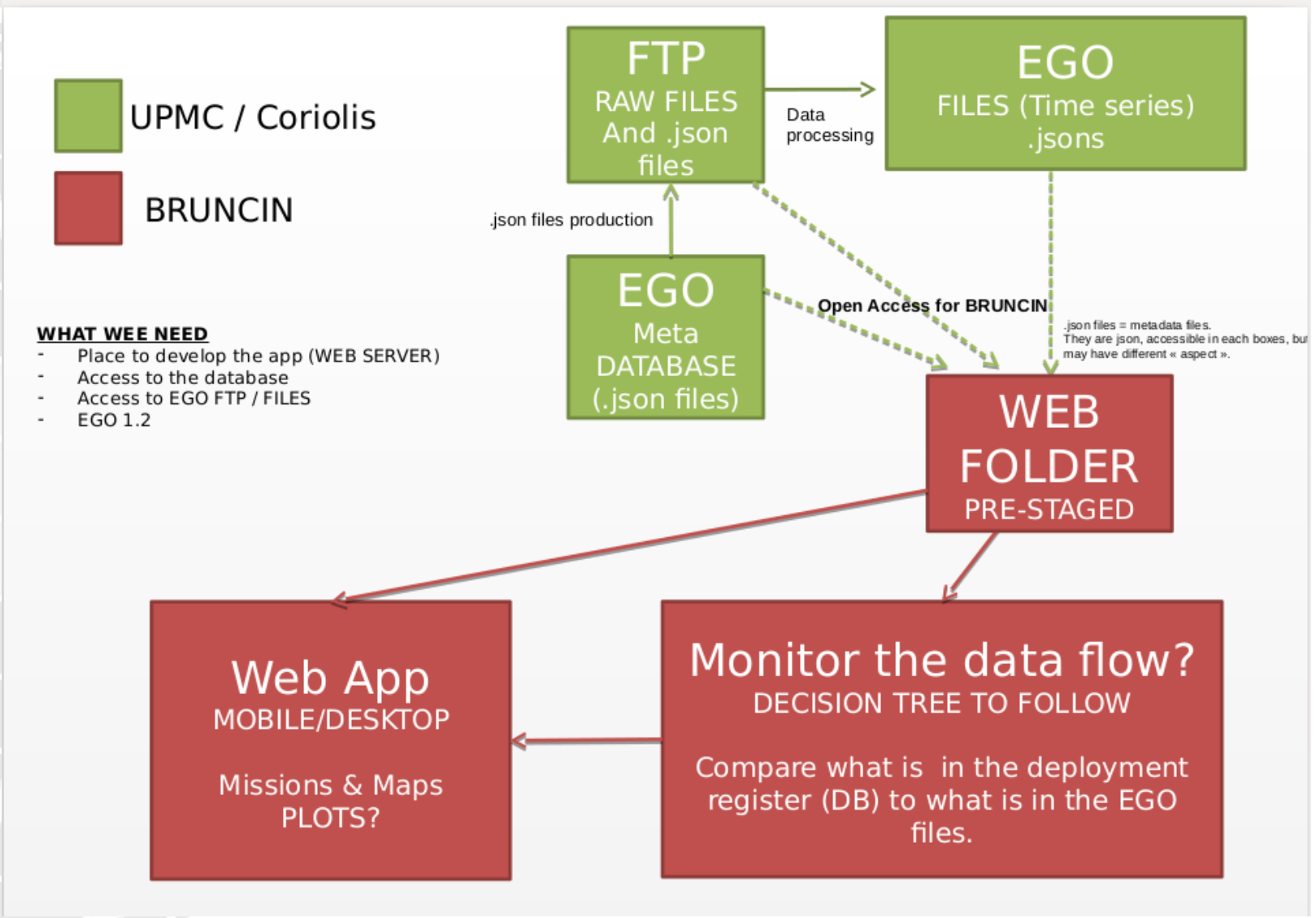
Tasks 3.4 : « Gliders »
The glider App' - D3.6 August 2017 – Lead BRUNCIN

Glider App' : http://bruncin.ydns.eu/dkero/ego_site/index_d.php



Tasks 3.4 : « Gliders »
The glider App' - D3.6 August 2017 – Lead BRUNCIN

How the community should benefit form this development ?



Tasks 3.4 : « Gliders »
Eastern Boundary Survey (D3.12 – August 2018) - GEOMAR Lead

2nd GA in Kiel report:
A post-doc will start soon on that subject (advised by Gerd). An option is to demonstrate how endurance lines are can be useful for monitoring Eastern boundary areas. In that context, some "endurance lines" like Senegal studies (some repeat-sections during few months) could be added to the study.

Update ?

AtlantOS

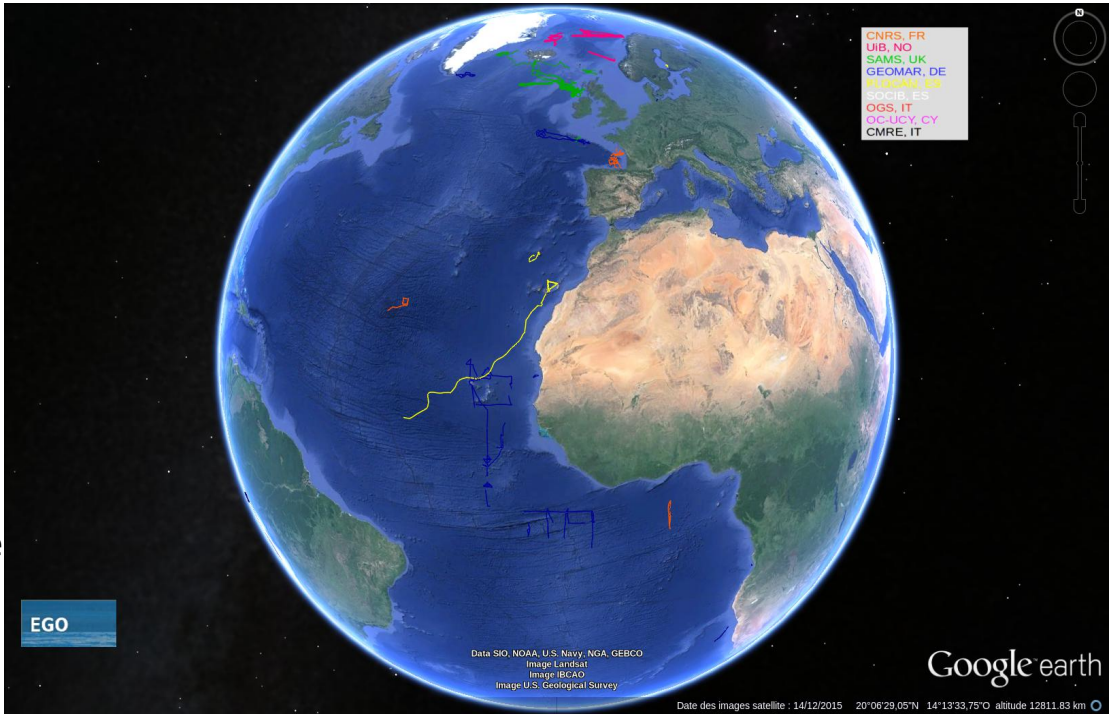
(i) Data Management

- Data and Monitoring :
  - monitoring glider deployments in RT :
    - Map of the « official array »
      → improving the data flow.
    - Glider registration differences between EGO data base and GDAC.
    - Priority on endurance lines.
    - Catalogue and monitoring tools available from GDAC / JCOMMOPS

Tasks 3.4 : « Gliders »
Tasks advances

(i) Enhancing the glider network

- Data and Monitoring :
  - monitoring glider deployments in RT :
    - Map of the « official array »
      → improving the data flow.
    - Glider registration differences between EGO data base and GDAC.
    - Priority on endurance lines.
    - Catalogue and monitoring tools available from GDAC / JCOMMOPS / Emodnet
    - International linkages...



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UiB	no	UiB	not yet	not yet	no	make sure the UiB is supporting his DAC rôle in the community
CNRS	ok	Coriolis	ok	ok	ok	improve automatisation of Json production

→ Some lack of information at the coordination level...

Tasks 3.4 : « Gliders »
Tasks advances

(i) Enhancing the glider network

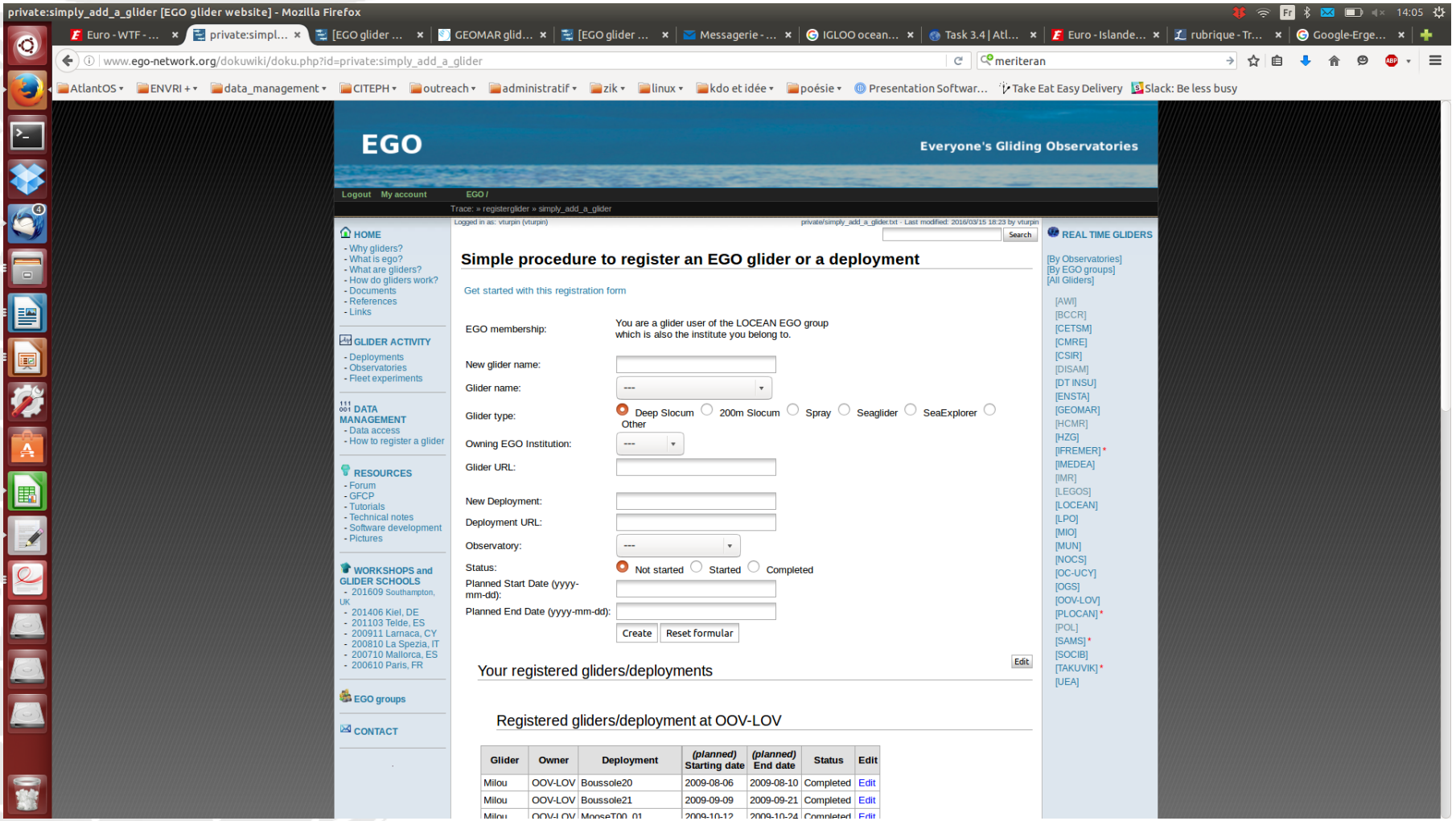
- Tools availability :
  - Make the different glider tools available...
    - ✔ Registration tools
      - MARS system
      - EGO web page
    - ✔ EGO format tools
      - Coriolis processing chain
      - EGO format checker
    - ✔ QC
      - Toolbox QC visuel (SAMS)
      - DMQC
    - ✔ Piloting and visualisation tools
      - GFCP (CNRS)
      - SOCIB Toolbox
      - IGLOO (HZG)
      - Norvegian piloting tools
      - UEA piloting tools (coming)
    - ✔ OSSE
      - glider data simulator
      - piloting optimisation (SEEK)...
    - ✔ Reporting deployment tools (CNRS)
  - Makesome of them open source ?
    Knowleldge base web page on EGO website
  - Github Vs SVN ?

- New EGO groups
  - Brazil / PROOCEANO
  - Canadian / Takuvik
  - CMRE (data dissemination issue solved ?)

- Toward biology :
  - OTN/EATN ; Canadian Hydrophone

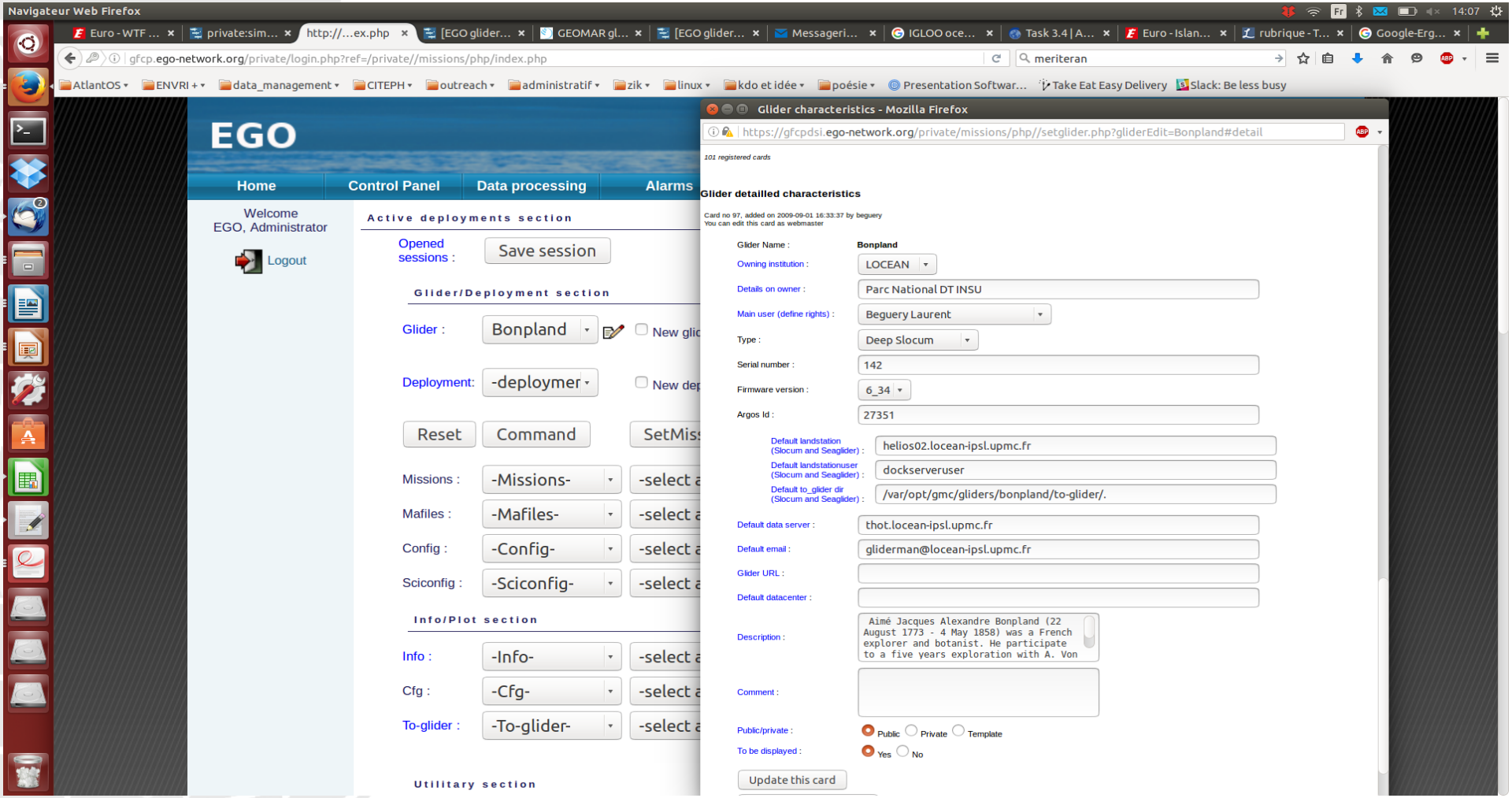
Tasks 3.4 : « Gliders »
Tasks advances

(i) Enhancing the glider network – registration tool



Tasks 3.4 : « Gliders »
Tasks advances

(i) Enhancing the glider network – registration tool



(ii) Estern boundary Survey

- Study based on endurance lines
  - Report on how gliders can sample eastern bundary region
  - Lofoten / Svinoy
  - OSNAP / Extended Ellett Line
  - ESTOC / Macaronesian Ocean-Observing program
- Scientific papers
  GEOMAR … ?
- Description of Work on that task ; Month 40 – sept 2018 : have to figure that out in the next months !

(iii) Glider App'

Meeting with BRUNCIN in january 2016

- Outreach App :

It will be a responsive web app with a database back-end which will use the EGO data repository as the source for visualization.
EGO file parsers and possibly the initial database itself may come from CORIOLIS

- Visualization & Piloting :

A selection of best software components from each partner system (NOC, SAMS, CNRS, UIB, PLOCAN, GEOMAR) will be identified, cleaned-up and documented for a shared knowledge-base via the existing EGO web/wiki.
If possible, a demo visualization/piloting tool will be constructed using these selected components

(iv) resume of WP7 requests

Contribute to the AtlantOS Catalogues :

- Index files for deployment → « pipe » and tools developped at the GDAC level.
- Datasets files for observatories
- Datasets for endurance lines

→ proposition can be done to GDAC to produce such « product »

Catalogue applications :

- Maps
- KPI

(iv) resume of WP7 requests

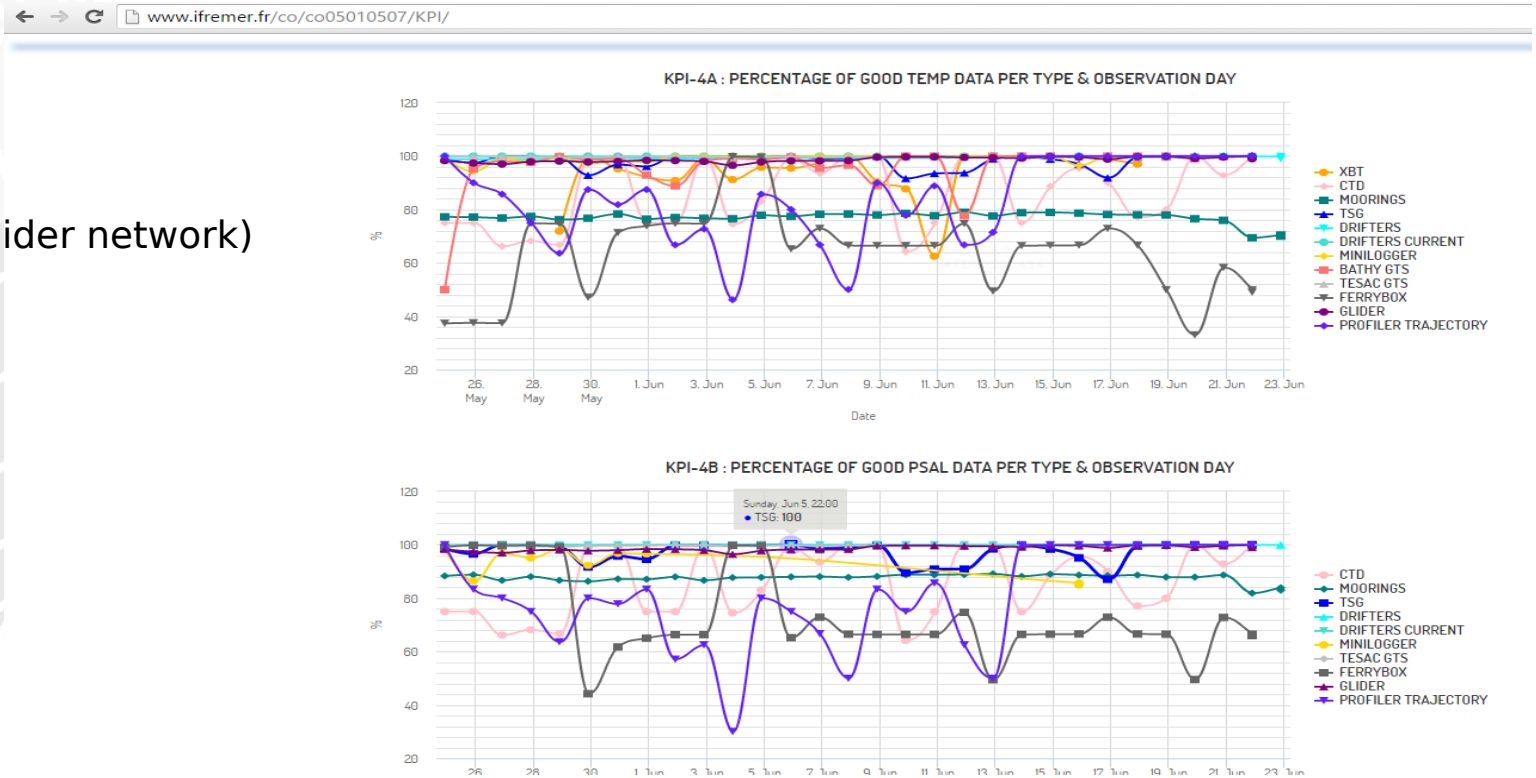
Contribute to the AtlantOS Catalogues :

- Index files for deployment → pipe and tools developped at the GDAC level.
- Datasets files for observatories
- Datasets for endurance lines

→ proposition can be done to GDAC to produce such « product »

Catalague applications :

- Maps
- KPI (definition for the glider network)



(iv) resume of WP7 requests

- DOI – Digital Object Identifier - a unique identification number system

Identification: enable reliable and durable citation of a data set

Access: provide data access means (direct link, form, email …)

Traceability: simple and reliable monitoring of the use of data to develop infrastructure

Reproducibility: if the data set is changing, provides the reproducibility of an experiment to enhance the credibility of the study

(iv) resume of WP7 requests

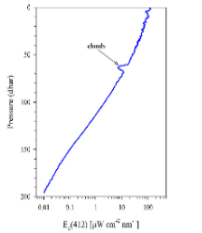
DOI – Digital Object Identifier

Argo part of the integrated global observation strategy

Near-real-time quality-controlled radiometric profiles acquired by Bio-Argo floats

Click to download the data — DATA

Publication date	2016-04
Temporal extent	2012 -2014
Author(s)	Organelli Emanuele[1], Claustre Hervé[1], Bricaud Annick[1], Schmechtig Catherine[2], Poteau Antoine[1], Xing Xiaogang[3,4], Prieur Louis[1], D'Ortenzio Fabrizio[1], Dall'Olmo Giorgio[5,6], Vellucci Vincenzo[1]
Contributor(s)	Loisel Hubert, Mork Kjell-Arne, Poulain Pierre-Marie, Slabakova Violeta, Stanev Emil, Thierry Virginie, Conan Pascal, Coppola Laurent, Speich Sabrina
Affiliation(s)	1 : Sorbonne Universités, UPMC Univ Paris 06, CNRS, UMR 7093, Laboratoire d'Océanographie de Villefranche (LOV), Villefranche sur Mer, France 2 : Sorbonne Universités, UPMC Univ Paris 06, CNRS, UMS 3455, OSU Ecce-Terra, Paris Cedex 5, France 3 : Key Laboratory of Physical Oceanography, Ocean University of China, Qingdao, China 4 : Takuvik Joint International Laboratory, CNRS, Université Laval, UMI 3376, Québec City, Canada 5 : Plymouth Marine Laboratory, Plymouth, United Kingdom 6 : National Centre for Earth Observation, Plymouth Marine Laboratory, Plymouth, United Kingdom
DOI	10.17882/43499
Publisher	SEANOE
Keyword(s)	radiometry, real-time, quality-control, Bio-Argo floats
Abstract	Vertical profiles of *Photosynthetically Available Radiation* (PAR) and downward irradiance (Ed) at 3 wavelengths (380, 412 and 490 nm) are routinely acquired by autonomous Bio-Argo floats. The database here presented includes radiometric profiles that have been quality-controlled using a specifically developed procedure for real-time distribution of data. The procedure is aimed at verifying only the shape of profiles. In each profile, dark signal, atmospheric clouds, spikes and wave focusing are flagged in a way compliant with the Argo real-time data management system. These data are therefore totally adapted to derive optical quantities such as the diffuse light attenuation coefficients. No quality control on the measured irradiance quantity is performed, which would require development of delayed-mode quality-control procedures.
Licence	CC BY
Utilisation	Data are published without any warranty, express or implied. The user assumes all risk arising from his/her use of data. Data are intended to be research-quality and include estimates of data quality and accuracy, but it is possible that these estimates or the data themselves contain errors. It is the sole responsibility of the user to assess if the data are appropriate for his/her use, and to interpret the data, data quality, and data accuracy accordingly. Authors welcome users to ask questions and report problems.
Acknowledgments	This database is a contribution to several projects: remOcean (funded by the European Research Council, grant agreement 246777), NAOS (funded by the Agence Nationale de la Recherche in the



Download metadata
TXT, RIS, XLS

References
Organelli Emanuele, Claustre Hervé, Bricaud Annick, Schmechtig Catherine, Poteau Antoine, Xing Xiaogang, Prieur Louis, D'Ortenzio Fabrizio, Dall'Olmo Giorgio, Vellucci Vincenzo (2016). A novel near real-time quality-control

Abstract Vertical profiles of *Photosynthetically Available Radiation* (PAR) and downward irradiance (Ed) at 3 wavelengths (380, 412 and 490 nm) are routinely acquired by autonomous Bio-Argo floats. The database here presented includes radiometric profiles that have been quality-controlled using a specifically developed procedure for real-time distribution of data. The procedure is aimed at verifying only the shape of profiles. In each profile, dark signal, atmospheric clouds, spikes and wave focusing are flagged in a way compliant with the Argo real-time data management system. These data are therefore totally adapted to derive optical quantities such as the diffuse light attenuation coefficients. No quality control on the measured irradiance quantity is performed, which would require development of delayed-mode quality-control procedures.

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Acknowledgments This database is a contribution to several projects: remOcean (funded by the European Research Council, grant agreement 246777), NAOS (funded by the Agence Nationale de la Recherche in the frame of the French "Equipement d'avenir" program, grant agreement ANR J11R107-F), UK Bio-Argo (funded by the Natural Environment Research Council-NERC), Argo-Italy (funded by the Italian Ministry of Education, University and Research-MIUR), E-AIMS (funded by European Commission-FP7 project), AtlantOS (funded by European Commission-H2020 program, grant agreement 2014-633211), and the French Bio-Argo program (Bio-Argo France; funded by CNES-TOSCA, LEFE Cyber and GMMC).

User's manual http://doi.org/10.1175/JTECH-D-15-0193.1

Data

File	Size	Format	Processing	Access
43047.zip	55 MB	NC, NetCDF		Open access

Download metadata
TXT, RIS, XLS

References
Organelli Emanuele, Claustre Hervé, Bricaud Annick, Schmechtig Catherine, Poteau Antoine, Xing Xiaogang, Prieur Louis, D'Ortenzio Fabrizio, Dall'Olmo Giorgio, Vellucci Vincenzo (2016). A novel near real-time quality-control procedure for radiometric profiles measured by Bio-Argo floats: protocols and performances. American Meteorological Society.

Related datasets
Argo (2000). Argo float data and metadata from Global Data Assembly Centre (Argo GDAC). SEANOE.

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How to cite

Organelli Emanuele, Claustre Hervé, Bricaud Annick, Schmechtig Catherine, Poteau Antoine, Xing Xiaogang, Prieur Louis, D'Ortenzio Fabrizio, Dall'Olmo Giorgio, Vellucci Vincenzo (2016). **Near-real-time quality-controlled radiometric profiles acquired by Bio-Argo floats**. SEANOE. http://doi.org/10.17882/43499

(iv) resume of WP7 requests

DOI – Digital Object Identifier from the network point of view

- Need to set up a policy on glider data DOI at the network level (multiple PIs/EDMO code in .json file)
- Proposition : 2 levels of DOI
- DOI for deployment with a key related to data processing (RT,DM)
- Top level DOI that gather deployments of a « program » (project, endurance line, area…)

(iv) resume of WP7 requests

Network objectives : need for rigourous metadatamanagement

Better management of the .json files

Discuss and define this in a larger specifcation document on the evolution of the registration system

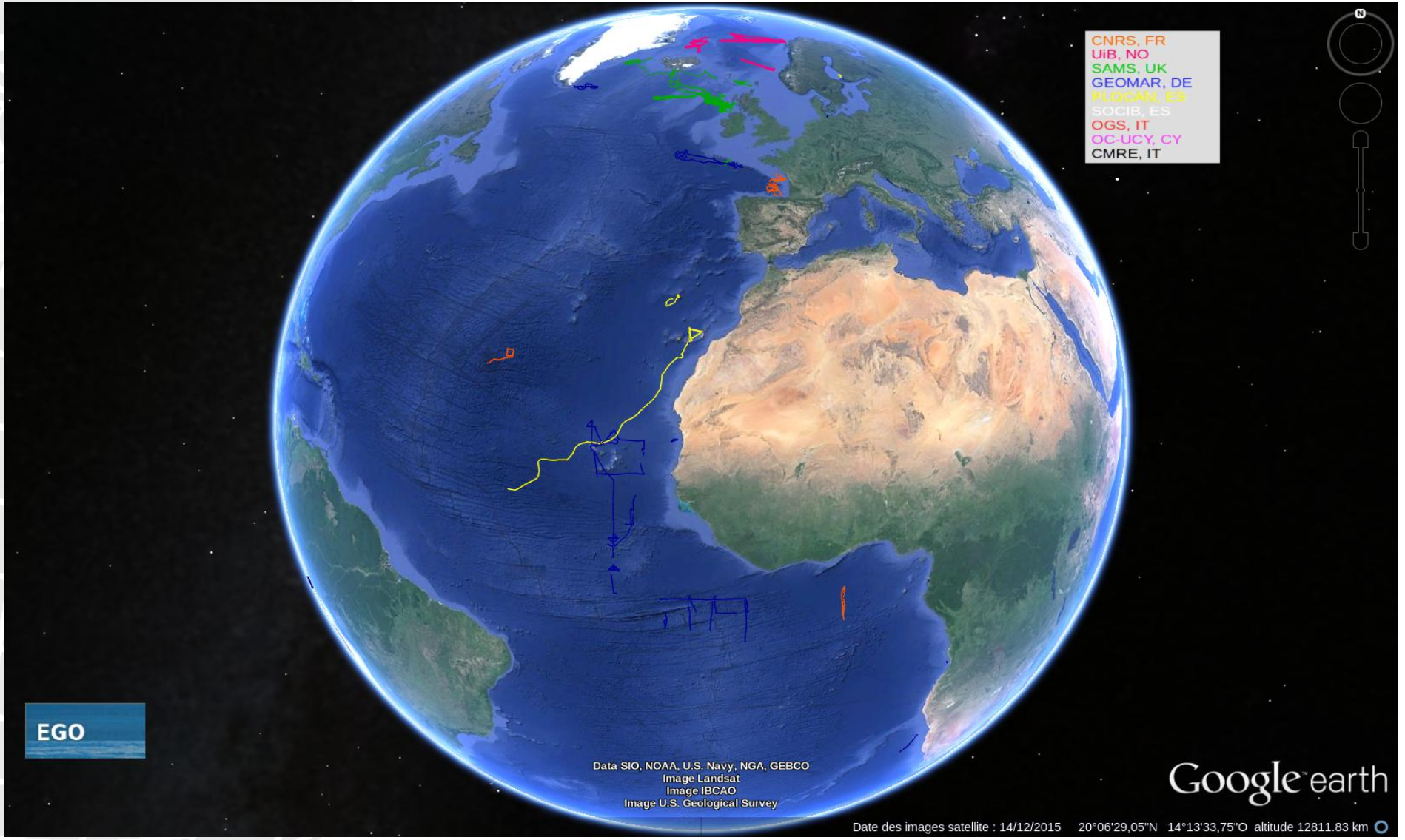
.json template available

Higlighting the benefit of this approach through AtlantOS

→ Sensor Web Enhancement objectives

- Related to .json sensor files.
- Usefull/necessary for structuring our network, improving metadata management (registration, DM)
- Toward a metadatabase of .json files ⟶ collaboration with WP7 to convert .json to sensorML… Esonet Yellow pages (FixO3), Sensor Nanny Tools (IFREMER)…

(iv) connexion with WP4 - OSSE



(v) Data format discussion

- Data management package V1.2
  Processing chain → ok, (Slocum, Seaglider, Spray ?, SeaExplorer ?)
  EGO format checker → ok
  data policy document, → nok
  data format document, → ok (draft V1.2 ready to be discussed)
  data management best practices, → ok (draft V1.0 ready to be discussed)
  .json template → ok

- Which process to release a new or updated format ?
  The exemple of ongoing work through Bridges.

- Need to find a volunteer to manage such discussion.

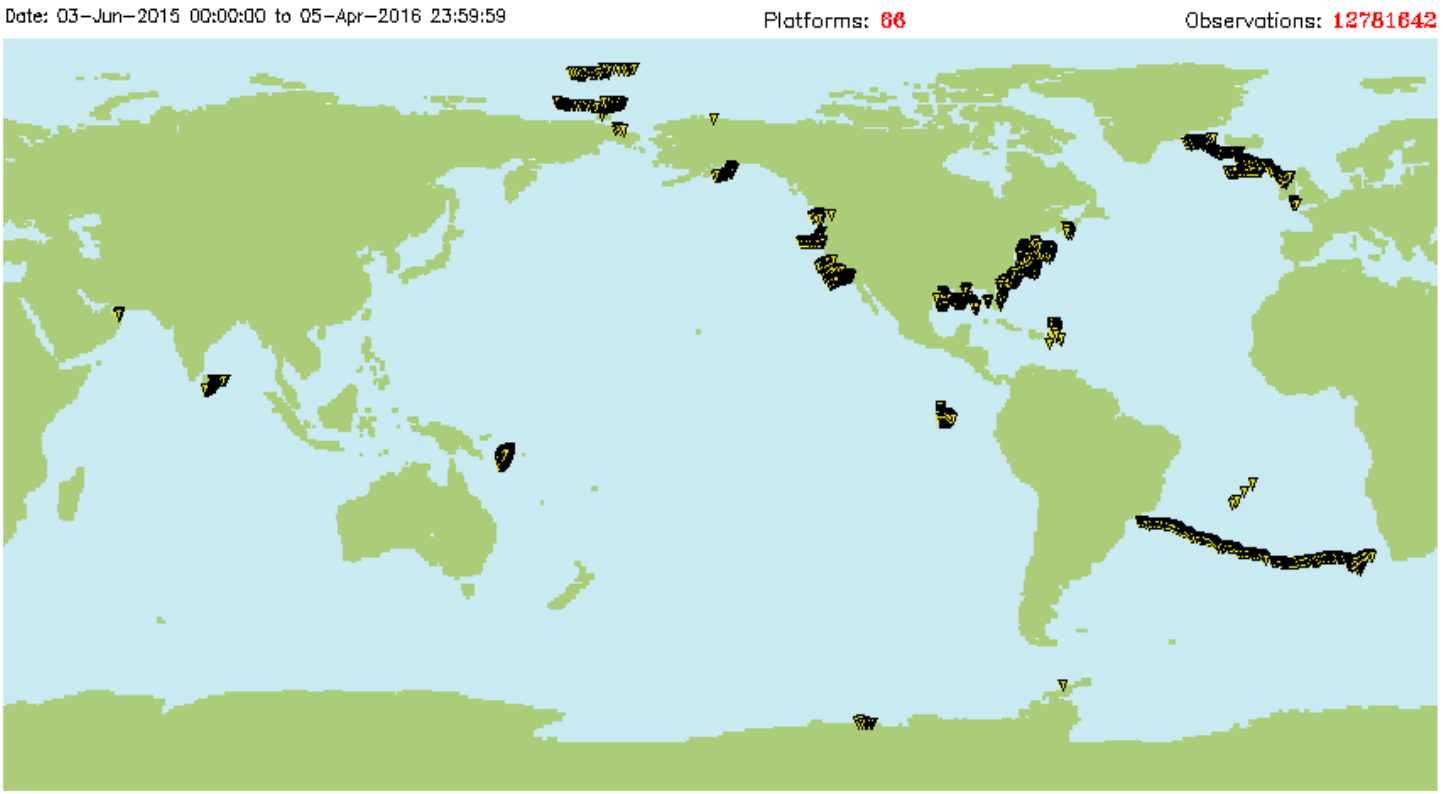
Tasks 3.4 : « Gliders »
EGO network

(vi) EGO : How to involve non european partners.

« Gathering » new Ego Groups :
US / Canada / Brazil / Mexico / South Africa ? / ...

Data-sharing with non European
Data management steering team through JCOMM framework ? Need to organize first meeting.

OSMC : http://osmc.noaa.gov/Monitor/OSMC/OSMC.html...



(vi) EGO communication, meetings and strategy…

+ Bibliography

+ Need for a Newsletter
  Which format ?
    Headings suggestions : new project, publications, deployment, activities, report, publications… ?
  Input process : We need to be more aware of what you are all doing.

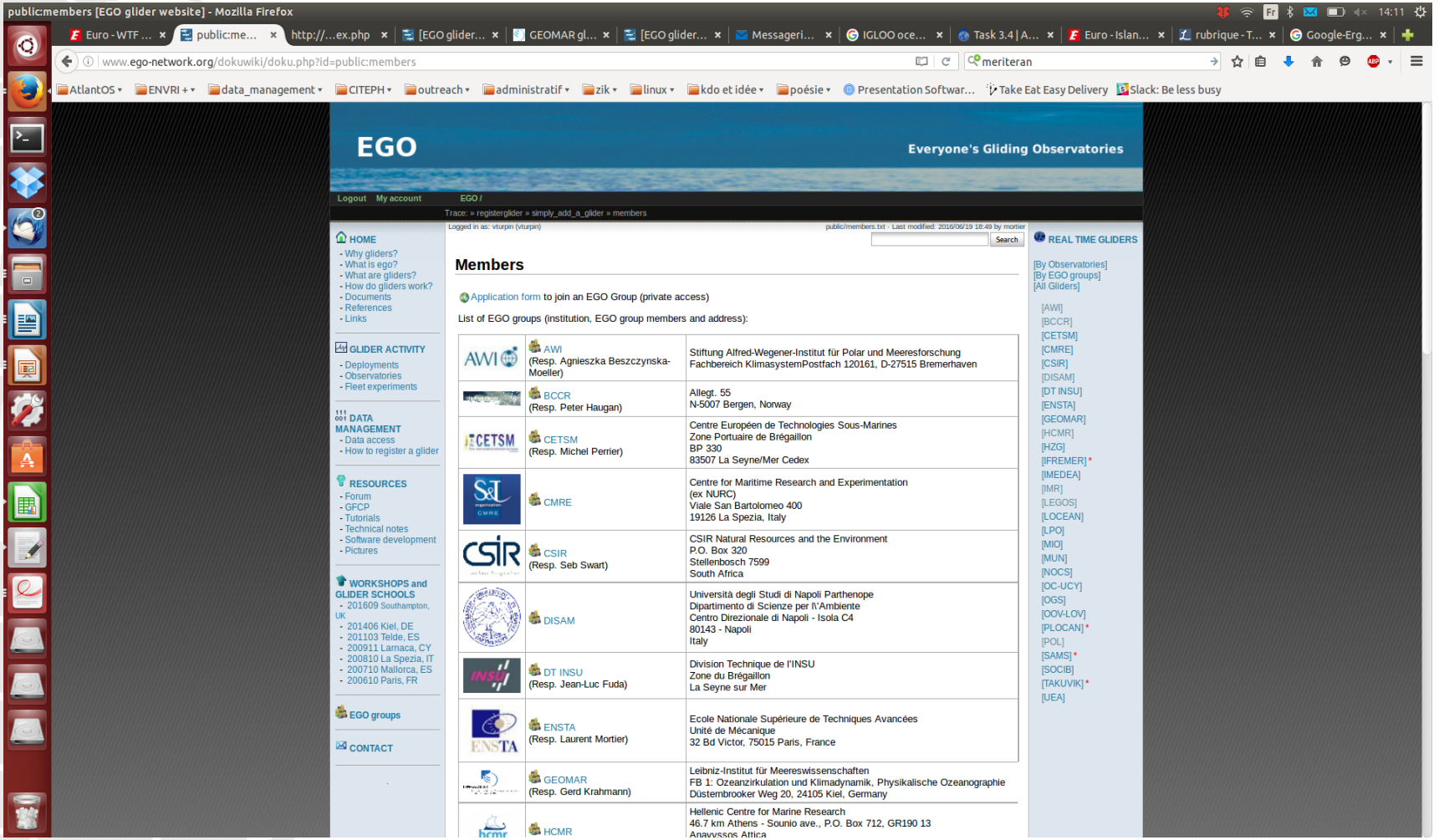
+ Social network
  Tweeter ?

+ EGO groups : What is a group ? « Manager » of the groups

Tasks 3.4 : « Gliders »
EGO network

(vi) EGO communication, meetings and strategy…

+ EGO groups : What is a group ? « Manager » of the groups



Tasks 3.4 : « Gliders »
EGO network

(vi) EGO communication, meetings and strategy…

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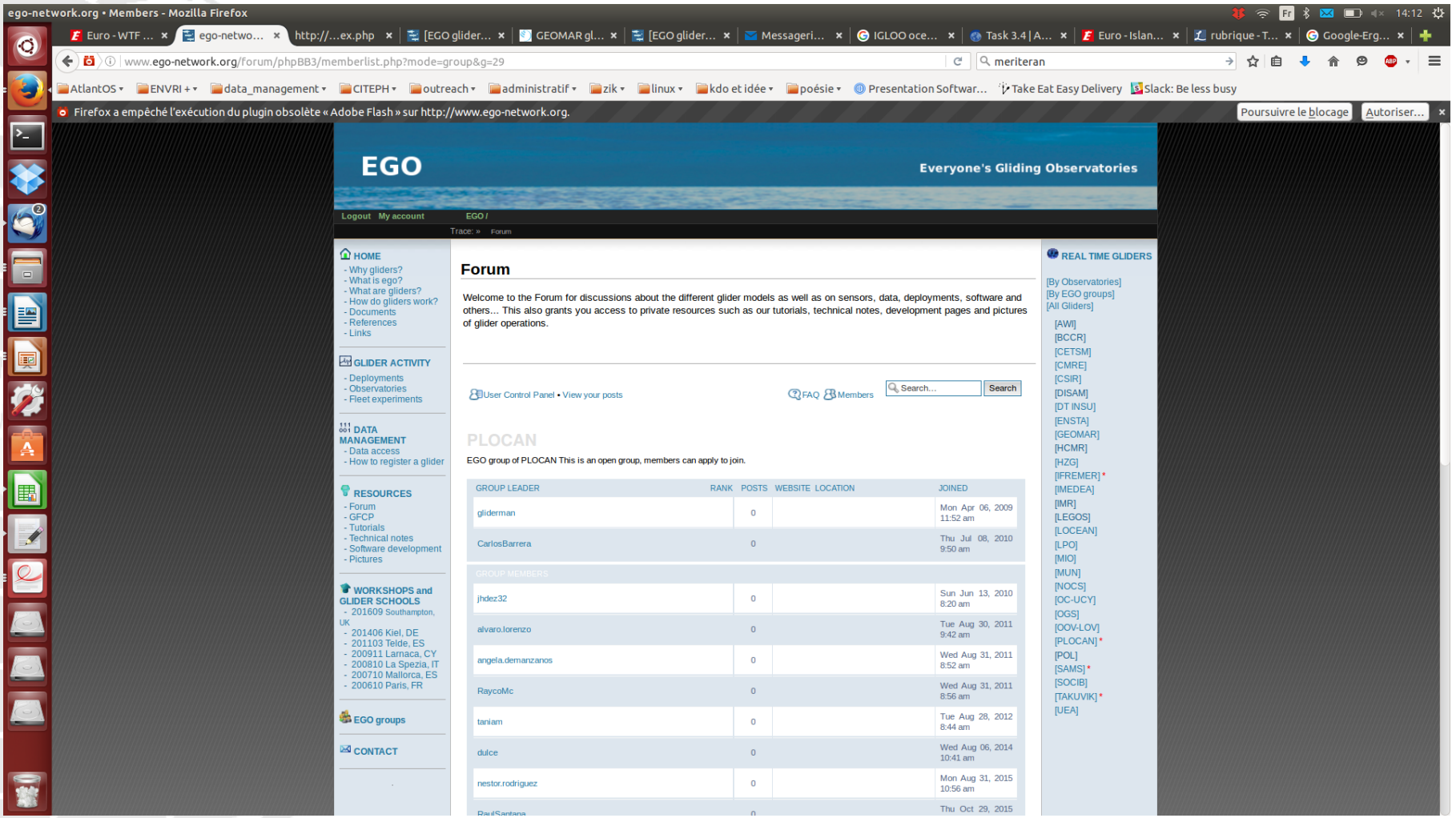

(vi) EGO communication, meetings and strategy…

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+ Social network
  Tweeter ?

+ EGO groups : What is a group ? « Manager » of the groups

+ EGO Strategy about software tools ?

+ EGO meeting. Abstract submission deadline extension

+ After Atlantos… We need to find a way to fund a position for coordination and data management… Opinion ? Strategy ?