

Towards an integrated EU data system within AtlantOS

V. Harscoat /lfremer, S. Pouliquen /lfremer, AtlantOS WP7 partners (representatives of Networks and Integrators) contact: atlantos_wp7_coordination@ifremer.fr

Fact sheet

Partners: 62 (research institutes, universities, marine service providers, multi-institutional organisations, international partners, private sector) from 18 countries (13 EU & 5 non-EU) plus members

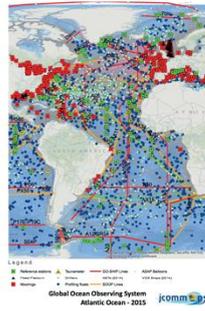
Coordinator: GEOMAR Helmholtz Centre for Ocean Research Kiel, Germany (Prof. Dr. Martin Visbeck)

The project: AtlantOS is a BG 8 research and innovation project that proposes the integration of ocean observing activities across all disciplines for the Atlantic, considering European as well as non-European partners.

Budget: € 20.65 Mio. for 4 years (2015 - 2019)

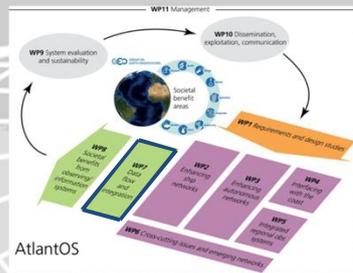
AtlantOS Overarching Goal

Integration of the so far loosely-coordinated set of existing ocean observing activities to a more sustainable, more efficient, and fit-for-purpose Integrated Atlantic Ocean Observing System.



Project Structure

AtlantOS takes strategic guidance from the Framework of Ocean Observing developed by the post OceanObs'09 task team applying an engineering system thinking to ocean observing; considering the input/requirements (orange), the process/observations (purple) and the output/data & products (green) to feed scientific and societal benefits.



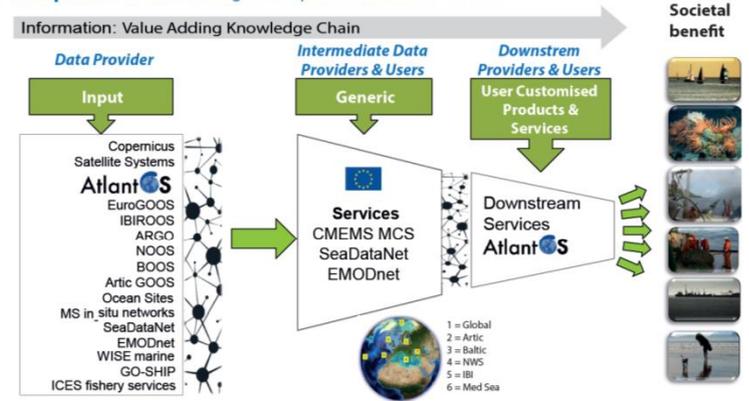
Organised in 10 high-level work packages on:

- Observing system requirements and design studies
- Enhancement of ship-based and autonomous observing networks
- Interfaces with coastal ocean observing systems
- Integrated regional observing systems (climate and fisheries)
- Cross-cutting issues and emerging networks
- **Data flow and data integration**
- Social benefits from observing/information systems
- System evaluation and sustainability

AtlantOS opportunities

- AtlantOS is a 'child of GEO and GOOS', hence it will operate as an integrative part of them
- Promote engagement and innovation in all aspects of ocean observing
- Improve international collaboration in the design, implementation and benefit sharing of ocean observing
- Free and open access to ocean data and information
- Quality and authority of ocean information
- Advance the aims of the Galway Statement

European Framework to generate products out of observation



Starting point for Data Flow and integration at the beginning of WP7

Data acquired by the different in situ observing networks contributing to the AtlantOS project are processed and distributed using different methodologies and means.

Depending on the network data management organization, the data are either processed following recommendations elaborated by the network teams and accessible through a unique portal (FTP or Web), or are processed by individual scientific researchers and made available through National Data Centres or directly at institution level.

Some datasets are available through Integrators (existing European and international data infrastructures or portals) but connected through ad-hoc links



Enhancements at Network level

- Provide integrated access to Network data (at Global Data Assembling Center or portal)
- Implement the metadata recommendations using recommended vocabularies
- Plan NRT QC procedures enhancement if needed

Benefits for Networks

- Target new users
- Improved traceability and monitoring tools
- Recommendations to implement a data citation strategy
- Mapping between network parameters and EOVI/ECV through the AtlantOS mapping vocabulary

Benefits for Users

For Operational users

- Extend time and space coverage for present parameters products (T&S Current, Sea Level, Wave, O2, Chl) both for forecast and reanalysis
- Start to provide better products for Ecosystem model validation
- Enhance existing products in European Seas
- Plan to add new platforms
- Push more data on the GTS

For research

- Enhance quality of the Historical products in partnership with the Networks and the Integrators

For AtlantOS WP9

- Provide tools for the AtlantOS coordination on what data is freely available for users and provide inputs for the elaboration of the AtlantOS Blueprint that aims at providing an integrated vision and plan for Atlantic Ocean observations.

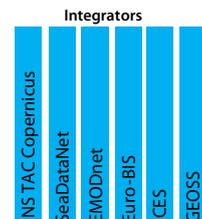
The long term goal : an Integrated EU data system to facilitate access to the Atlantic observations

One goal is to ensure that data from different and diverse in-situ observing networks are readily accessible and useable to the wider community, international ocean science community and other stakeholders in this field.

To achieve that, the strategy is to move towards an integrated data system within AtlantOS that harmonises work flows, data processing and distribution across the in-situ observing network systems, and integrates in-situ observations in existing European and international data infrastructures so called Integrators.

The targeted integrated system deals with data management challenges for efficient and reliable data service to users:

- QC commons for heterogeneous and nearly real time data
- Standardisation of mandatory metadata for efficient data exchange
- Interoperability of network and integrator data management systems



Enhancements at Integrator level

- Update their ingestion procedure to integrate new network data
- Enhance viewing and downloading services on network data
- Perform cross network assessment and provide feedback to networks
- Develop traceability and monitoring facilities for providers and users



- Facilitate discovery through Network and Product catalogue based on ISO standards
- Provide OGC services (WMS, WFS) to facilitate development of customised user interfaces either through Integrators or directly from Networks
- Provide enhanced download facilities either through Integrators or directly from Networks
- Facilitate visibility of existing data and gap identifications

Data exchange backbone

- To ease discovery, viewing and downloading by users
- Platform catalogue (Index files/Copernicus technique)
- Network and Product Catalogue (Sextant back office tool)
- Controlled vocabularies (NERC/BODC) for parameters
- Access by FTP to quality controlled data
- Visualisation and advanced data access services
- Detailed network and platform descriptions (SensorML marine profile)

Standardization between networks from Acquisition to Service to users

- To avoid mixing 'pears with apples' agreements on recommendations for
- Mandatory Metadata (unique id for platform, unique code for Institution)
- Common vocabularies for metadata and data description (AtlantOS mapping vocabulary)
- Minimum NRT (24 hours to several days) QC procedures for a core of 7 variables (measured by more than one network): T, S, Current, O2, Chl, Nitrate, Sea level, Carbon

Relying on existing international standards and protocols

- Services: OGC standards (WMS, WFS, SWE)
- Network and product catalogue: Geonetwork
- Metadata: EDMO SeaDataNet catalogue for Institutions, C17 SeaDataNet Platform catalogue for most platforms and ICES directory for stations
- Parameters: SeaDataNet P01 and P06, CF convention (P07) and WoRMS for Taxa
- Data citation: DOI (Data Object Identifier) technique

