Towards an integrated EU data system within AtlantOS EU Horizon 2020 project

Fact sheet

Partners: 42 (research institutes, universities, marine service providers, multiinstitutional 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 B6.8 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.


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/GOOS task applying an engineering system thinking to ocean observing; considering the interoperability requirements; strategies, the process/observations (purple) and the output/data & products (green) to feed scientific and societal benefits.

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 elevation level.

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

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 as 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

Benefits for Networks

- Target new users
- Improved traceability and monitoring tools
- Recommendations to implement a data citation strategy
- Mapping between network parameters and EO/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 D2-Ch) both 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 GTSS

For Research

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

For AtlantOS WP7

- 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 a integrated vision and plan for Atlantic Ocean observations.

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)

Relying on existing international standards and protocols

- Services: OGC standards (WMS, WFS, SWE)
- Network and product catalogue: GeoNetwork
- Metadata: EMDG 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