

Towards an integrated EU data system within AtlantOS

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The H2020 AtlantOS project started in June 2015 and aims to optimise and enhance the Integrated Atlantic Ocean Observing Systems (IAOOS). 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 (Copernicus marine service, SeaDataNet NODCs, EMODnet, OBIS, GEOSS) so called Integrators.

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

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

Presently the situation is that the 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, such as Copernicus or EMODnet, but connected through ad-hoc links.

To facilitate the access to the Atlantic observations and avoid “mixing pears with apples”, it has been necessary to agree on (1) the EOVs list and definition across the Networks, (2) a minimum set of common vocabularies for metadata and data description to be used by all the Networks, and (3) a minimum level of Near Real Time Quality Control Procedures for selected EOVs. Then a data exchange backbone has been defined and is being setting up to facilitate discovery, viewing and downloading by the users. Some tools will be recommended to help Network plugging their data on this backbone and facilitate integration in the Integrators. Finally, existing services to the users for data discovery, viewing and downloading will be enhanced to ease access to existing observations.

An initial working phase relying on existing international standards and protocols, involving data providers, both Networks and Integrators, and dealing with data harmonisation and integration objectives, has led to agreements and recommendations on:

- a list of EOVs across the Networks
- a minimum set of metadata common vocabularies to be used by all networks
- a minimum level of Near Real Time Quality Control Procedures for selected EOVs (T, S, Current, O₂, Chl, Nitrate, Sea Level, Carbon)
- basic services (discovery, viewing and downloading) to distribute the data

The setup phase has started, both on Networks and Integrators sides, to adapt the existing systems in order to move toward this integrated EU data system within AtlantOS.