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Multi-Platform Data Distribution Challenges from Observing Systems to Data Distribution

Miguel V. Charcos-Lloréns (1), Miquel À. Rújula (1), Emma Heslop (1), Antonio Novellino (2), Patrick Gorringe (3), Juan G. Fernández (1), Biel Frontera (1), Cristian Muñoz (1), Xisco Notario (1), Emma Reyes (1), Paz Rotllan (1), Inma Ruiz (1), and Joaquín Tintoré (1)

(1) Balearic Islands Coastal Ocean Observing and Forecasting System (SOCIB), Spain (jtintore@socib.es), (2) ETT Solutions Ltd, Italy (antonio.novellino@ettsolutions.com), (3) Swedish Meteorological and Hydrological Institute (SMHI), Sweden (patrick.gorringe@smhi.se)

Multiplatform ocean observations are critical to establish and understand the ocean state and variability at all scales from coast to open ocean. Facing the challenges of climate change and marine environment threats requires a rapid and friendly access to accurate oceanographic multi-platform data from all the European organizations. Thus, multi-platform data is an important asset to science and society. However, managing the full data cycle (storage, distribution and visualization) of multi-platform data represents several challenges to data centers and data aggregators due to the need to handle a large diversity of formats and standards of data that are hosted in different infrastructures. In addition, data from multiple observing systems often contain distinct information and measurements to which different quality controls (QC) are applied.

The European Marine Observation and Data Network (EMODNet) is a network of organizations supported by the EU's integrated maritime policy. EMODNet has successful experience aggregating multi-platform data from diverse European organizations. They provide an ingestion portal to allow private and public organizations to share multiple types of data. Their success harnessing large amount of marine data of diverse formats results from adapting their ingestion procedures to the individual organizations producing ocean data.

The Balearic Islands Coastal Ocean Observing and Forecasting System (SOCIB) is a marine research infrastructure, a multi-platform observing and forecasting system that has several years of experience producing and providing open access to ocean data from distributed multi-platform observing systems. It uses cutting edge technologies to help external agencies to access metadata and complex data with diverse formats. For example, it offers REST API web services that deliver data and metadata from a number of platforms in a transparent and automatic manner.

SOCIB and EMODNet align to the same principle of global access and custom compilation of individual data with the added benefit of having experiences working at different aspects of the data cycle. For the past 2 years we have worked together to address the challenges of managing data from multiple platforms. In the case of HF Radar (HFR), SOCIB has contributed in the definition of interoperable near-realtime data and QC standard procedures. This experience facilitating data discovery and usability into European marine services was valuable to shape the development of the new released REST API that will provide additional features to facilitate the access to SOCIB's multi-platform data.

Following the success of this collaboration we are exploring together new approaches to integrate glider data in the framework of a flexible and efficient design adapting to the requirements of individual organizations. Glider data presents new challenges that has been partially addressed by the European community, especially with the EGO format. This new approach is based on SOCIB's expertise producing, computing and disseminating glider data and EMODNet's experience integrating large range of fragmented and diverse data, and demonstrated in the successful collaboration that has made considerable amount of data available via REST API web services.