SOCIB and Balearic Islands Lifeguards:
An example of data products and services that provide direct social benefits

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Introduction

The Balearic Islands Coastal Ocean Observing and Forecasting System (SOCIB, http://www.socib.eu), is a Marine Research Infrastructure (ICTS) that provides world-class, quality controlled metocean datasets, in both real time and delayed mode. This is achieved from across its multi-platform, observation and forecasting system, covering coastal to open ocean areas. This multi-platform approach is needed to properly capture oceanographic processes, that take place at different spatial and temporal scales, and that characterise both ocean state and ocean variability. The SOCIB observation system provides physical and biogeochemical variables from different platforms such as the coastal research vessel, a high-frequency (HF) radar system, weather stations, tide gauges, moorings, drifting buoys, ARGO profilers, gliders (autonomous underwater vehicles) and sea turtle tracking, providing trajectories given by the animals. SOCIB provides 72-hour predictions of ocean temperature, currents and waves through the WMOP (hydrodynamics) and SAPO (waves) forecasting systems. Moreover, a local implementation of the WRF model generates 48-hour predictions of atmospheric variables.

SOCIB Products and Services Strategy

After three years of full operational capacity and despite of developing a broad range of quality-controlled, freely available datasets as well as a range platform-focused apps for visualising and experiencing an increase in our web site visitors since 2015, there was no clear evidence of widespread use of the data beyond regional scientists.

In order to increase the use and utility of the available data for key societal stakeholders, in 2016 SOCIB developed a Products and Services strategy. An analysis was undertaken (web-based research, publications, meetings with key leaders in the area, participation in workshops, SOCIB facilities inputs, meetings with existing users…) and 10 sectors (groups   of users) with common ocean data interests, that are regionally and globally important, and for which SOCIB has data/intellectual property of value, were identified:

- Marine and coastal research
- Marine sports
- Beach/ coastal communities and tourism
- Coastal protection, planning and governance
- Sustainable marine ecosystems
- Integrated coastal zone and ocean management
- Ports and shipping
- Marine safety
- Education and kids
- Cross-sector products

A total of 35 products per sector are currently available in SOCIB products and services catalogue.

SOCIB Beach Lifeguards Product

SOCIB Beach Lifeguards Product was specifically designed to cover the requirements from the Balearic Islands General Directorate for Emergencies (Dirección General de Emergencias e Interior - Govern Illes Balears) in regards of beach safety, providing benefits to the operators in terms of:

- Ease daily reports fill-in (before: information in different portals).
- Hazard mitigation (close/open beaches regarding forecast).

Two tools were developed within this product, (1) SOCIB Beach Lifeguards Seaboard and (2) SOCIB Beach Lifeguards Mobile App.

SOCIB Beach Lifeguards Seaboard

SOCIB Seaboards are single 'dashboard' visualizations of the real time and forecast ocean data currently provided by SOCIB, from different coastal and ocean monitoring locations around the Balearic Islands (http://seaboard.socib.es/).

SOCIB Beach Lifeguards Seaboard was born as an in-browser application within the family of Seaboards. This product is oriented to the beach/coastal communities and tourism sector. It supplies quality controlled information about both weather and sea state forecast for the Balearic Islands beach catalogue. In this Seaboard the user is able to browse and access past (calendar selection), present (default view) and future (48 hours ahead) critical meteo (wind speed, wind direction, rain, pressure etc.) and oceanographic (height, direction and period of waves etc) information for up to 353 beaches through a select menu and input search.

SOCIB Beach Lifeguards Mobile App

Beach Lifeguards also needed to be able to set an alarm system over the wide range of variables available for each beach, thus a mobile app was built in collaboration with *Apploading Ltd* in order to cover such requirement. The mobile app has the following additional features:

- Browse and access through up to 353 beaches using a mobile-friendly interactive map.
- Create favourites (shortcuts for a quick access to certain beaches)
- Create alarms over a set of variables for any beach
- Receive notifications and check them whenever needed.

Conclusions

SOCIB, the Balearic Islands Coastal Observing and Forecasting System, is an initiative to supply real time coastal and ocean data products and services. It provides responses to both international scientific priorities and pressing societal needs, such as beach erosion, sea level rise, and climate variability. Through this we contribute to the development and implementation of new technologies, enhancing our capacity to sustainably manage our interaction with the coastal and open ocean.