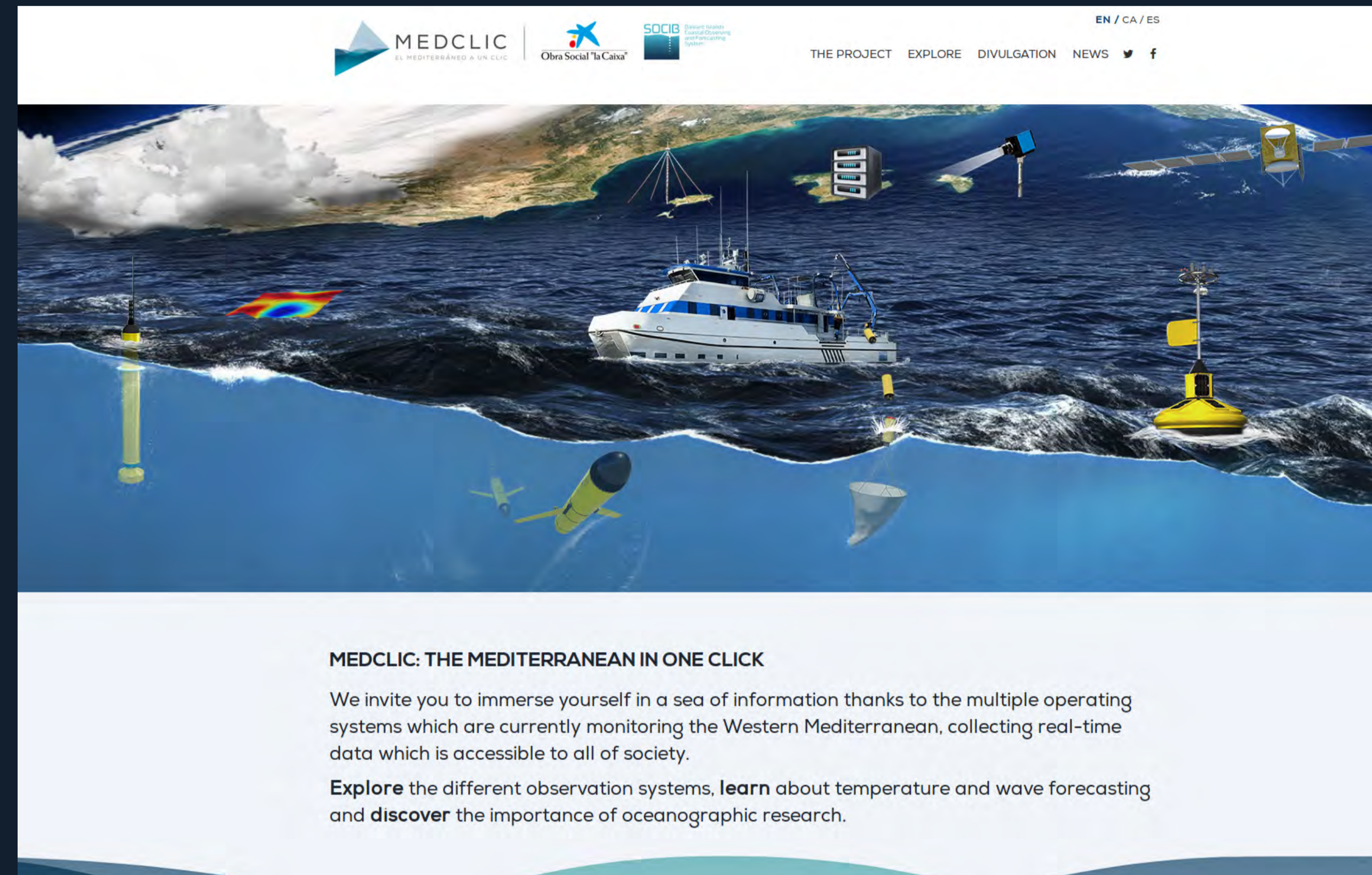


Medcllic: the Mediterranean in one click

1 What is Medcllic?

Medcllic is a project combining Research and Dissemination and focused on the Mediterranean Sea.

It involves the scientific, technological and societal approaches of the Balearic Islands Coastal Observing and Forecasting System (SOCIB) in collaboration with la Caixa Foundation.

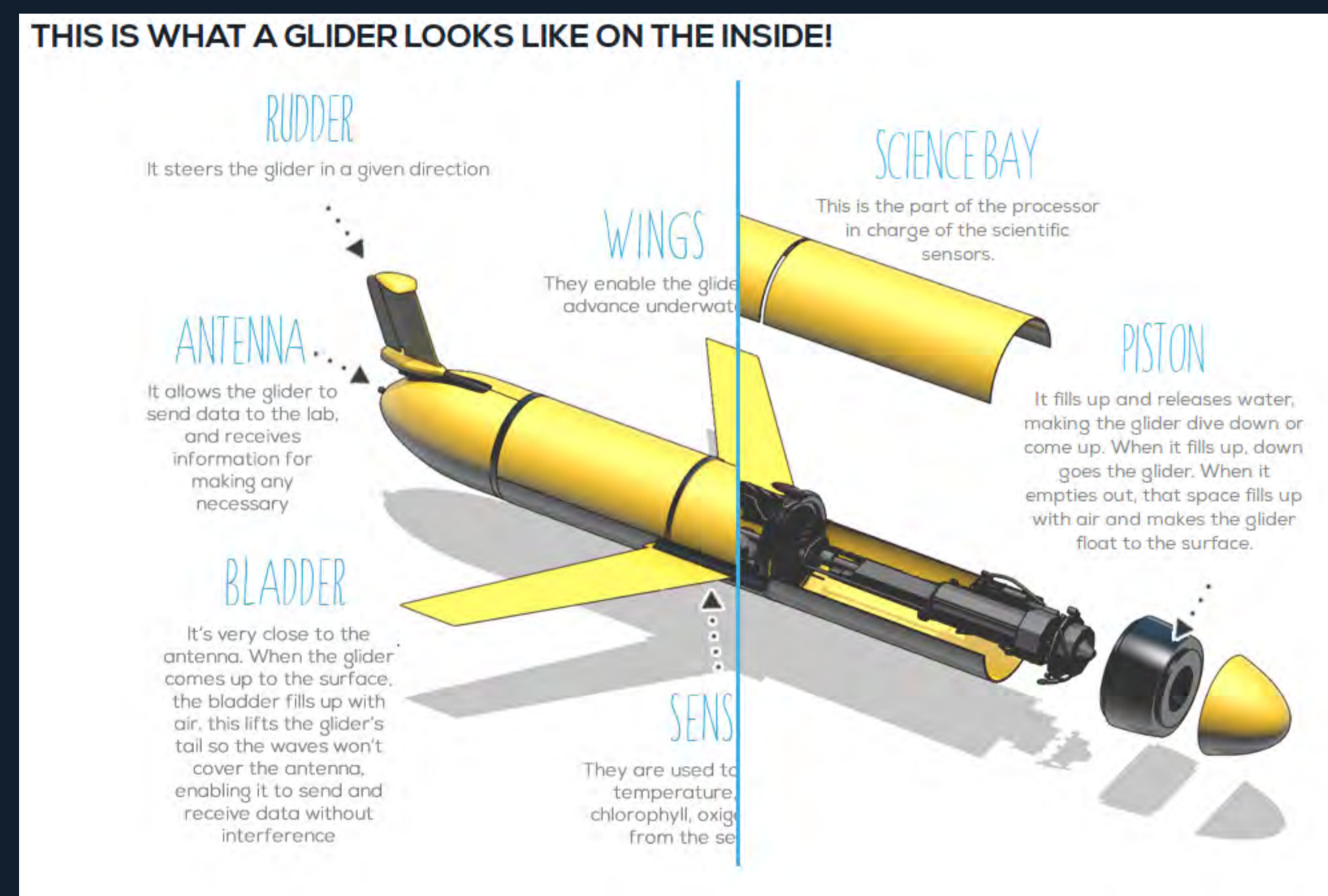


1.1 Goals

- 1 Scientific: understanding mesoscale variability at the regional scale in the Mediterranean Sea.
- 2 Outreach level: bringing new paradigm of multi-platform observation in real time closer to the general public.

1.2 Results

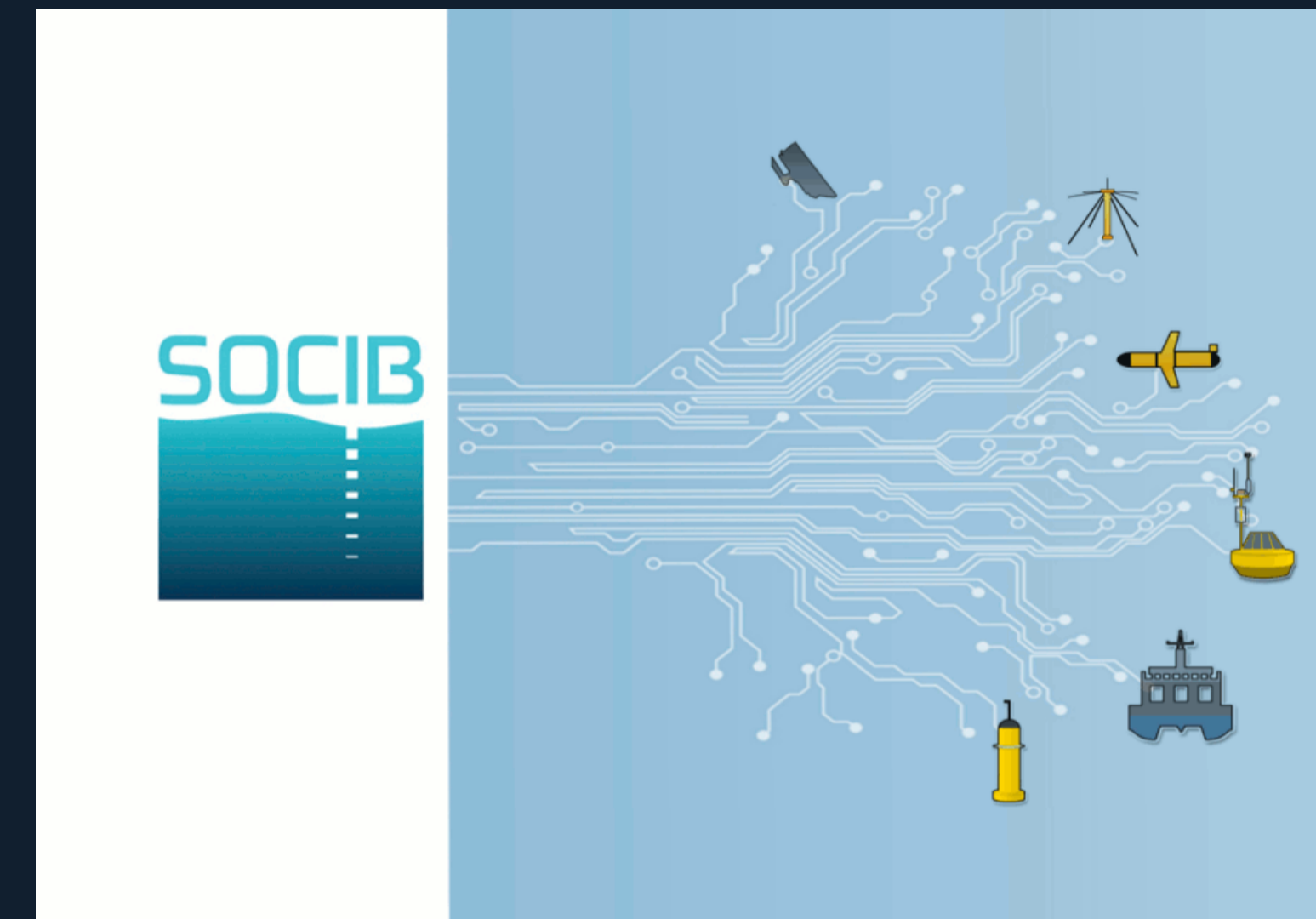
The Medcllic webpage is made up of information and graphical material (videos, animations and computer graphics) describing the ocean state and variability, with a particular focus on how the data are collected using different instruments.



2 Facilities and data stream

Each type of platform provides different types of data, allowing one to observe the ocean and its properties at different places, times and scales.

2.1 Data sources

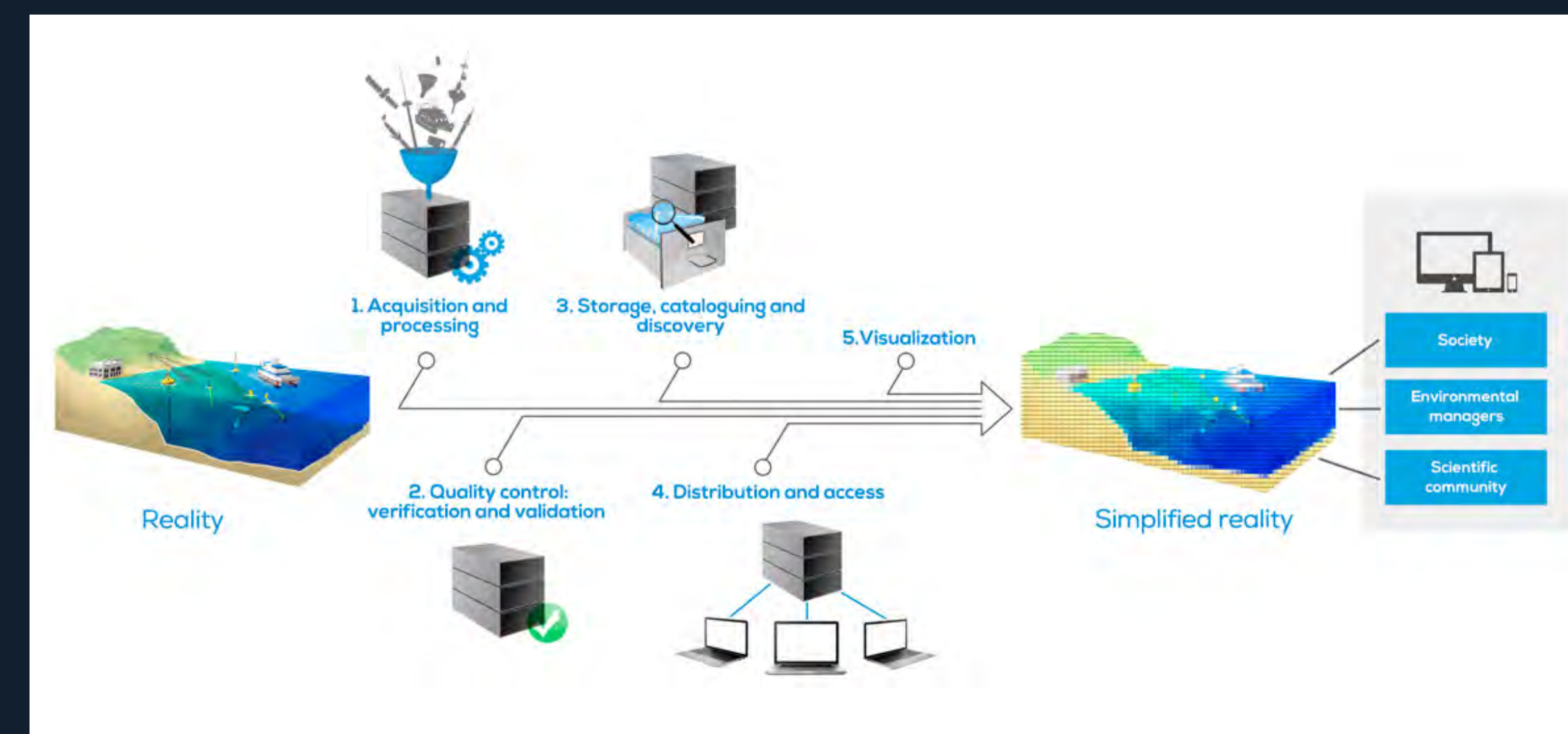


- Fixed stations: provide time series of properties such as sea level, water temperature, wave height.
- Beach monitoring: information about the evolution of beach morphology, rip currents, etc.
- Gliders: high-resolution measurements of the water column, with an autonomy of several weeks.
- Drifting buoys: measuring the water temperature and following the sea surface currents.
- Research vessel: collecting physical, chemical or biological characteristics of the sea water thanks to scientific equipment.
- Numerical model: delivers predictions of the circulation and properties of the sea for the next few days.

2.2 Processing chain

All the data acquired by these platforms and sensors are sent to the Data Centre, where they undergo the following operations:

- Processing: standardization of the format (netCDF) and addition of metadata.
- Quality control: test on the validity of the measurements.
- Distribution: the data are made available for download using various protocols and services, according to the type of user (scientist, general public, application developer).
- Visualization: specific tools allow the exploration of data in real time and for any type: time series, trajectories, grids.



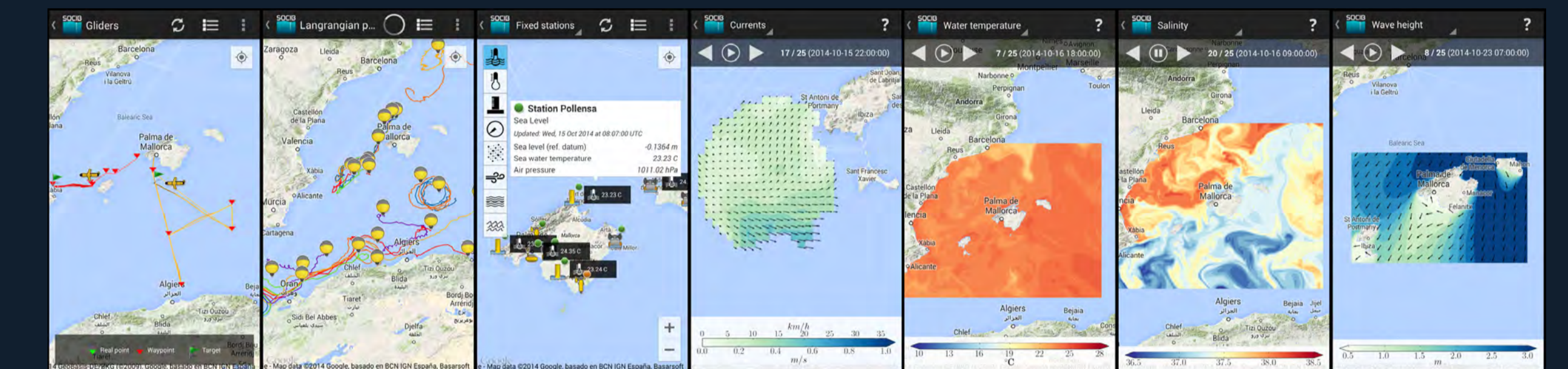
3 Technologies

3.1 Data Discovery

The SOCIB Data Discovery Service (<http://apps.socib.es/DataDiscovery/index.jsp>), a layer of RESTful web services, was used to access the platform positions and the corresponding measurements. These services can provide:

- a list of fixed stations or deployments (active and archived),
- measurements for a given platform or a selected variable,
- a time series for a given data product.

They are also used in the SOCIB app for smartphones and provides a link between the developers and the available data.

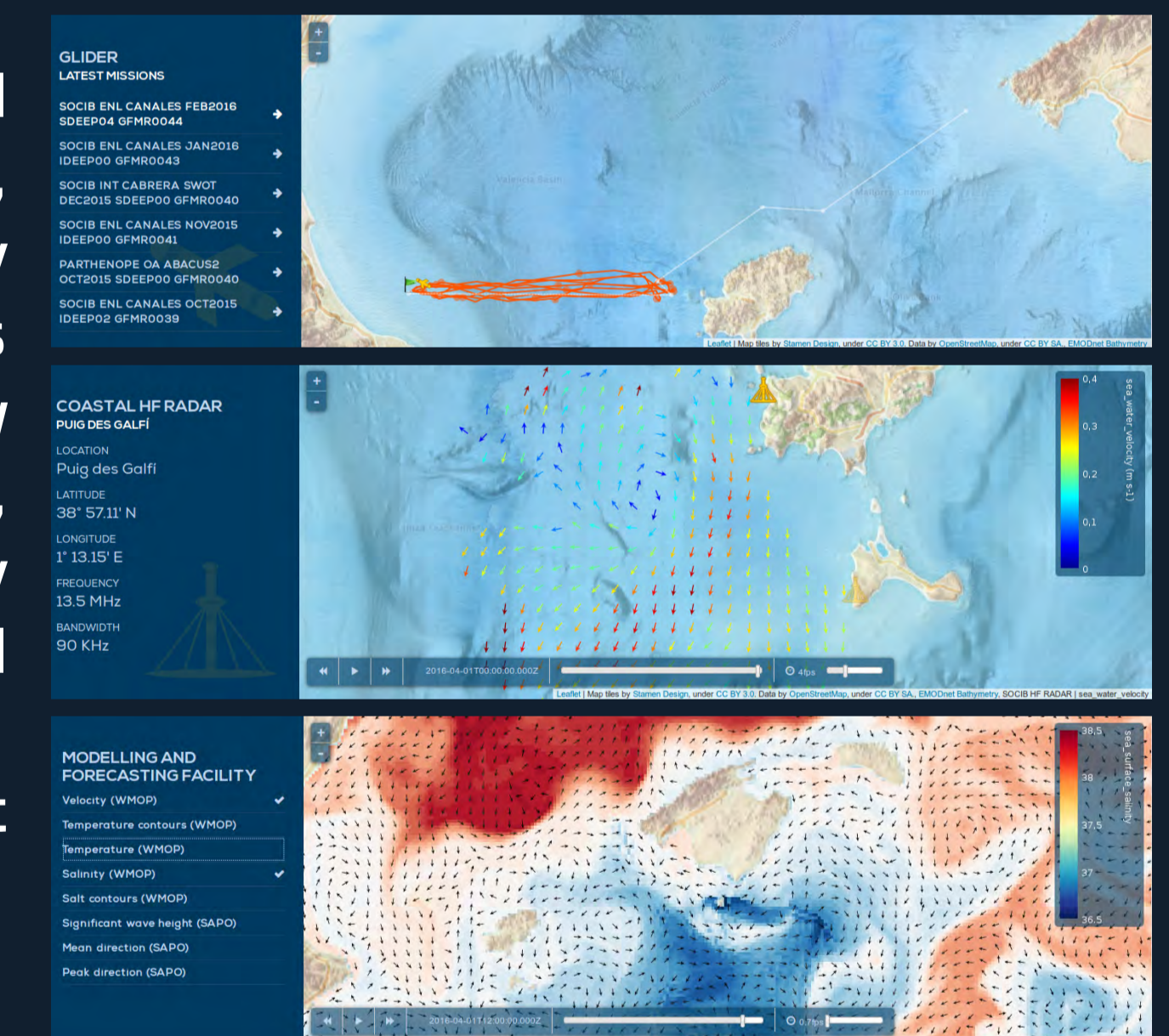


3.2 Visualization

Responsiveness, elegance and user-friendliness are the key characteristics visualization tools necessary to provide the general user a seamless access to the information.

Among the tools designed by the SOCIB Data Centre, Leaflet.TimeDimension, a library to add time dimension capabilities on a Leaflet map. The figures show examples with the Glider trajectories, the HF radar velocities and the salinity and currents from the numerical hydrodynamics model.

The code is available on GitHub at <https://github.com/socib/Leaflet.TimeDimension>.



The other tools and applications developed by the Data Centre are available at <http://apps.socib.es/> or through our github account: <https://github.com/socib>

4 Future developments

We are developing new RESTful web API in order to make easier the data access by scientists, developers or the general public. This new API allowed us to create a Data Products catalog.

