

Oceanographic data management at SOCIB

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Balearic Islands Coastal Observing and Forecasting System

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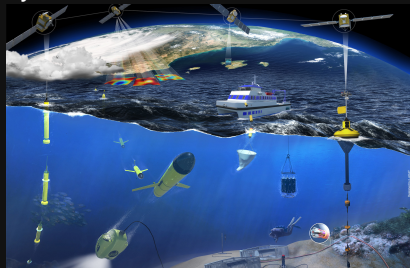
Double paradigm shift

1 Ocean observation

Single platform, ship-based observations



Now: Multi-platform observing systems



Double paradigm shift

- 1 Ocean observation
- 2 Data availability

12-24 months (years) after cruises



Now: near real-time, quality-controlled data

The image shows a screenshot of a web-based data catalog interface. The browser address bar displays the URL: <http://trredds.socib.es/trredds/catalog.html>. The main content area is titled "Dataset" and contains a hierarchical tree structure of data categories. The categories are: "oceanic data", "observational", "satellite", "mooring", "drifter", "buoy", "rf_radar", "research_vessel", "aggregated_data", "operational_model", "oceanographic", "hydrography", "wave", "waveq", "model_run_aggregation", "waveq", "secondary_data", and "test_data". To the left of the catalog, there is a "DATA CENTER" panel with several input fields and buttons. At the bottom of the catalog, there is a footer with the text: "SOCIB 2012. Socib is a member of the Spanish Research Council (CSIC). SOCIB is a public entity of the Spanish State." The SOCIB logo is visible in the bottom right corner of the slide.

SOCIB Facilities



Coastal Research Vessel

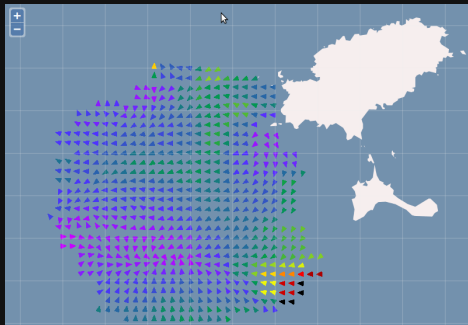
CTD, ADCP, ...



SOCIB Facilities



Coastal HF Radar



SOCIB Facilities



Glider



SOCIB Facilities



Lagrangian platforms

drifters, profilers

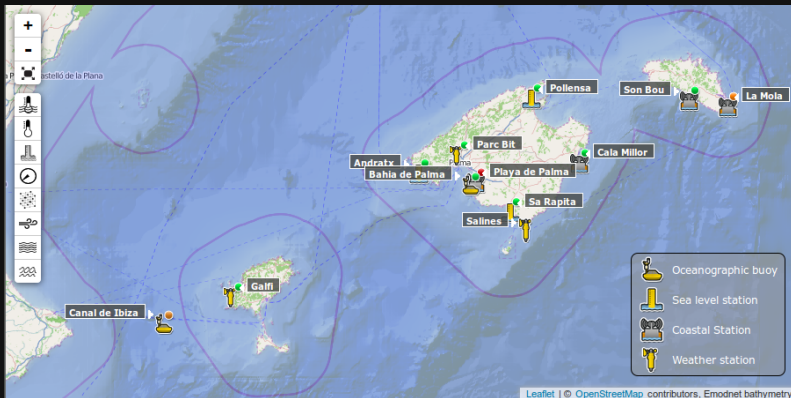


SOCIB Facilities



Fixed stations

weather, sea-level stations, buoys

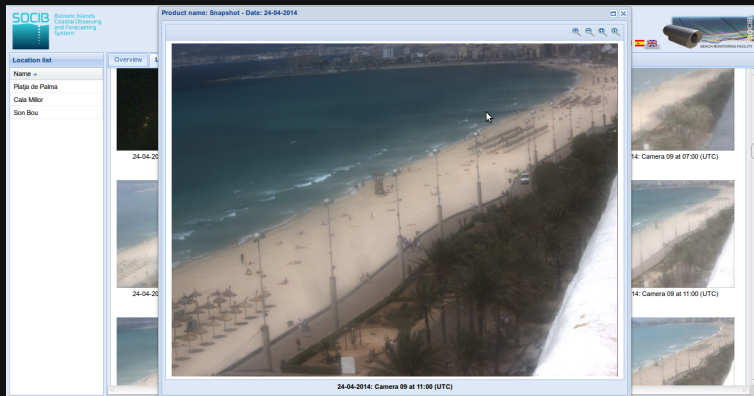


SOCIB Facilities



Beach monitoring

images, morphology, weather



SOCIB Balearic Islands Coastal Observing and Forecasting System

Product name: Snapshot - Date: 24-04-2014

Location list

Name ▾

- Platja de Palma
- Cala Millor
- Son Bou

Overview

24-04-20

24-04-20

24-04-2014: Camera 09 at 11:00 (UTC)

14: Camera 09 at 07:00 (UTC)

14: Camera 09 at 11:00 (UTC)

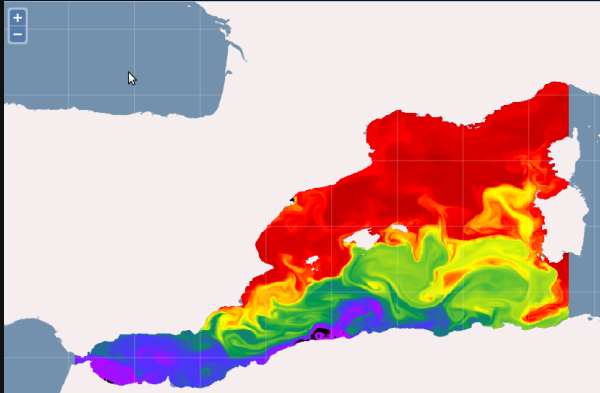
14: Camera 09 at 11:00 (UTC)

SOCIB Facilities

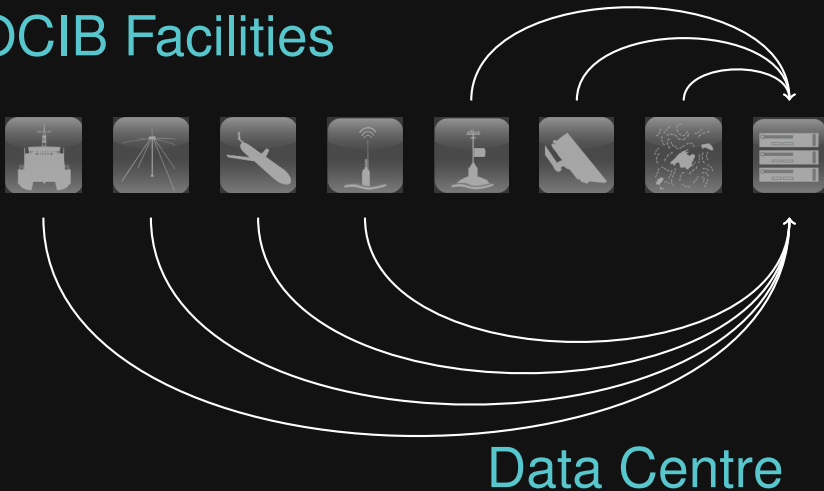


Modelling

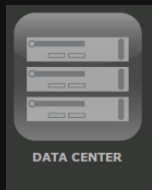
hydrodynamics, waves



SOCIB Facilities



SOCIB Data centre principles



- 1** Discoverable and accessible
- 2** Real-time, freely available
- 3** Interoperable, standardized and quality controlled

Challenge: integrated data management system

1 Sensors & platforms

Variety of:

Glider, CTD, HF Radar, Satellite, Videos, ADCP, . . .

Challenge: integrated data management system

- Variety of:
- 1 Sensors & platforms
 - 2 Data types

Grid, Time series, Trajectory, Mesh, Point, Images, . . .

Challenge: integrated data management system

- Variety of:
- 1 Sensors & platforms
 - 2 Data types
 - 3 Parameters

Ocean: temperature, pollutant, traffic, currents, ...

Atmosphere: pressure, rainfall, ...

Interface sea-level, waves, ...

Land: coastline, erosion, ...

Challenge: integrated data management system

- Variety of:
- 1 Sensors & platforms
 - 2 Data types
 - 3 Parameters
 - 4 Formats

CSV, KML, HDF, JSON, NetCDF, ...

Facilities:



Other data
providers

Facilities:



Other data
providers



Users: General

Managers and Policy makers

Scientists

Facilities:



Other data providers



Data Centre:

Ingestion, pre-processing, quality control



Users: General

Managers and Policy makers

Scientists

Facilities:



Other data providers



Data Centre:

Ingestion, pre-processing, quality control



Data Archival



Users: General

Managers and Policy makers

Scientists

Facilities:



Other data providers



Data Centre:

Ingestion, pre-processing, quality control



Data Archival



Distribution and access service



Users: General

Managers and Policy makers

Scientists

Facilities:



Other data providers

Data Centre:

Ingestion, pre-processing, quality control

Data Archival

Distribution and access service

SOCIB Applications: LW4NC2, DAPP, SACOSTA, Beamon, ...

Users: General

Managers and Policy makers

Scientists

Facilities:



Other data providers



Data Centre:

Ingestion, pre-processing, quality control



Data Archival

Data catalogue



Distribution and access service



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Distribution and access service

Discovery (CSW)

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Ingestion, pre-processing, quality control

Data Archival

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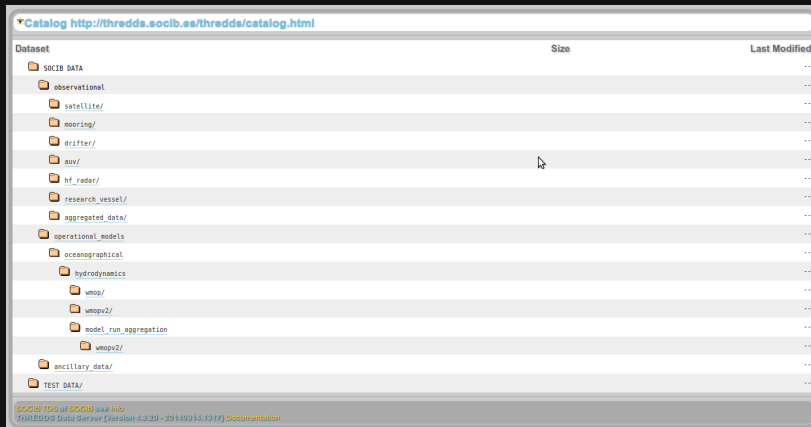
Managers and Policy makers

Scientists

Data discovery and access

Thredds data server:

<http://thredds.socib.es/thredds/catalog.html>



The screenshot shows a web browser window with the address bar displaying `*Catalog http://thredds.socib.es/thredds/catalog.html`. The main content area is a table with three columns: **Dataset**, **Size**, and **Last Modified**. The table lists a hierarchical structure of datasets under the root **SOCIB DATA**. The **Size** column is empty for all entries, and the **Last Modified** column contains double hyphens (`--`). A mouse cursor is visible over the **aux/** dataset entry.

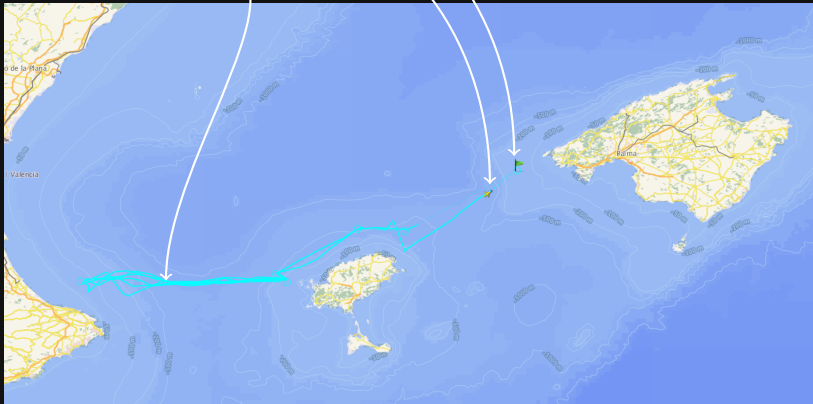
Dataset	Size	Last Modified
SOCIB DATA		--
observational		--
satellite/		--
mooring/		--
drifter/		--
aux/		--
hf_radar/		--
research_vessel/		--
aggregated_data/		--
operational_models		--
oceanographical		--
hydrodynamics		--
wmpv/		--
wmpv2/		--
model_run_aggregation		--
wmpv2/		--
ancillary_data/		--
TEST DATA/		--

SOCIB TDS at SOCIB [see info](#)
Thredds Data Server [Version 4.3.29 - 20140314.1317] [Documentation](#)

Data discovery and access

Dapp – Glider

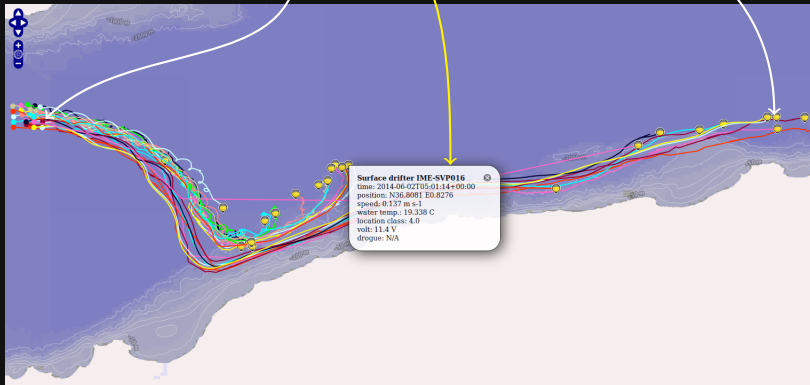
- Final way-point
- Current position
- Trajectory



Data discovery and access

Dapp – Drifters

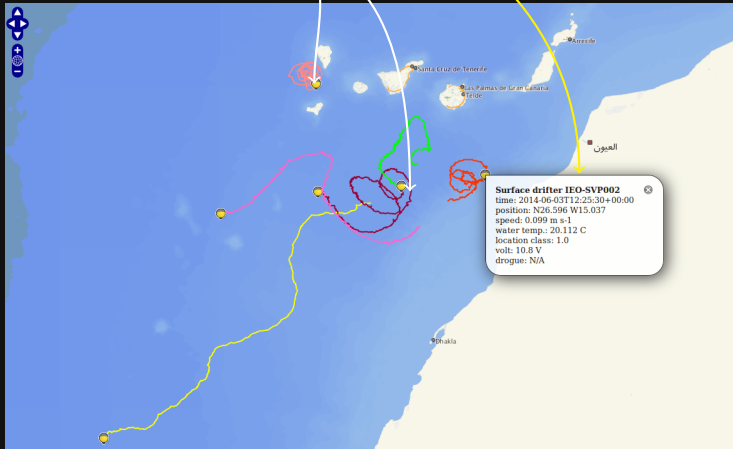
- Current positions
- Real-time information
- Release positions



Data discovery and access

Dapp – Drifters

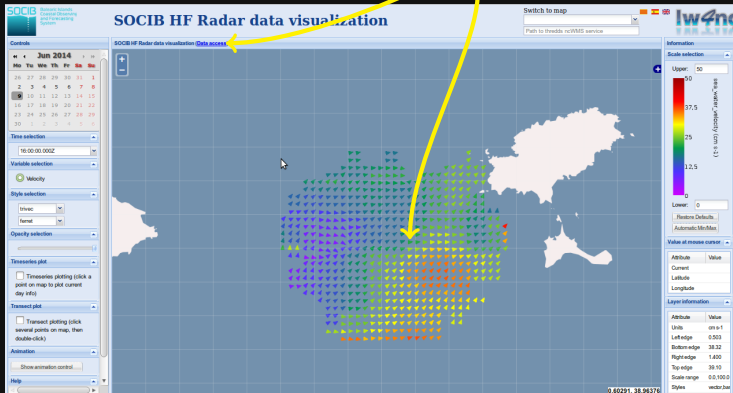
- Real-time information
- Current positions



Data discovery and access

LW4NC2 – Radar data

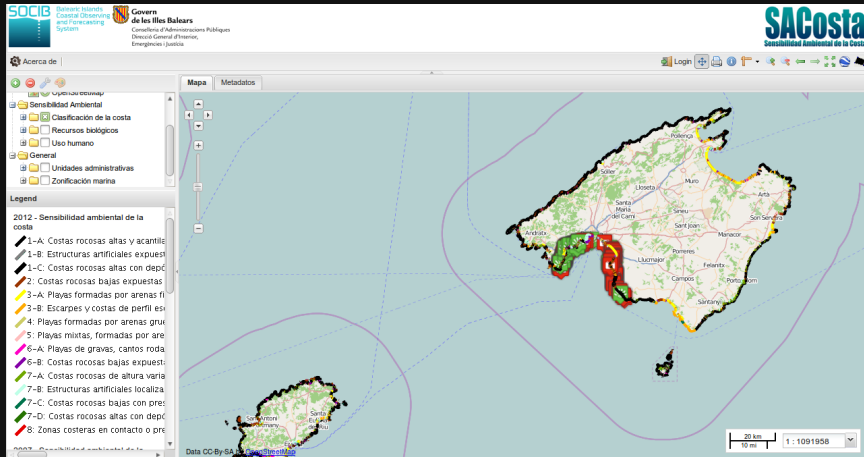
- NetCDF available in near real-time
- Visualisation through Lw4nc2



Data Centre applications

SACOSTA: map viewer for cartographic data

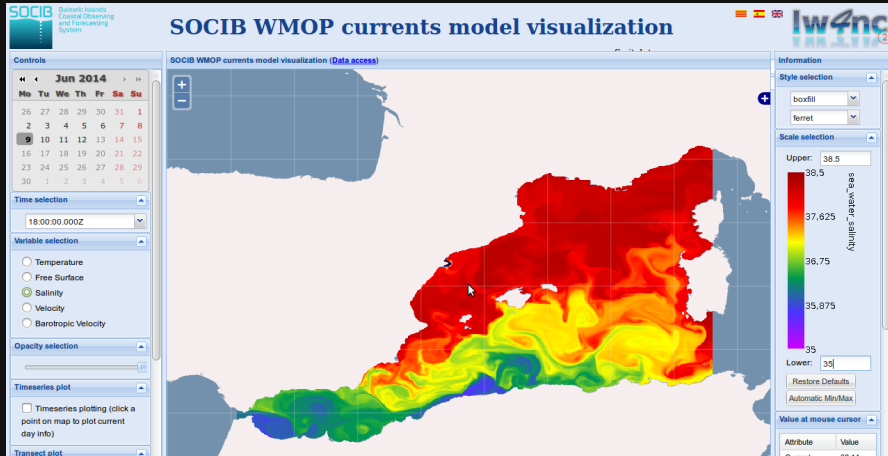
<http://gis.socib.es/sacosta>



Data Centre applications

LW4NC2: web application for multidimensional data (NetCDF)

<http://thredds.socib.es/lw4nc2>



Data Centre applications

BEACH DATA VIEWER: map viewer for historical and beach survey data

<http://gis.socib.es/viewer>

Home Zoom In Zoom Out Zoom Box Pan Previous Next Select a beach Identify Measure Length Measure Area User Manual

SOCIB Balearic Islands Coastal Observing and Forecasting System

BEACH MONITORING FACILITY
GIS Beach Data Viewer (v 1.1)

Base layers

- Blank map
- Relief map
- Aerial photo 1956
- Aerial photo 2001
- Aerial photo 2002
- Aerial photo 2004-05
- Aerial photo 2006
- Aerial photo 2008
- Aerial photo 2010

General

- Municipalities

Instruments

- Historical data
- Instruments

Seafloor

- Seafloor

Granulometry

Coast lines

photography

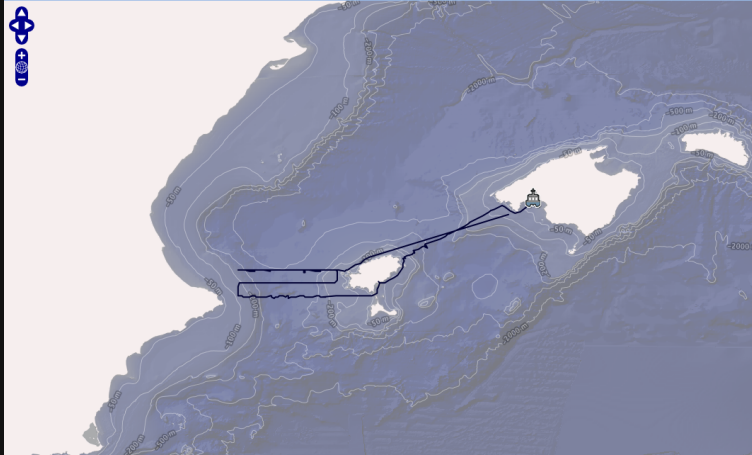
- 21/07/1956
- 01/03/1964
- 01/08/1968

Beach data provided by SOCIB

Data Centre applications

DAPP: web application for mobile platforms trajectories

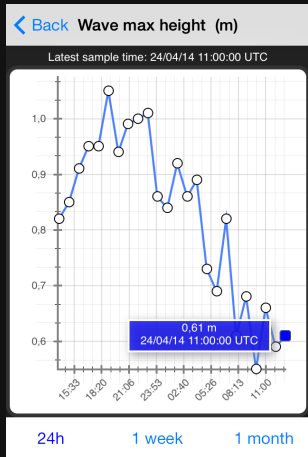
<http://apps.socib.es/dapp>



Data Centre applications

Smart-phone apps for real time data from fixed stations and glider trajectories

<http://itunes.apple.com/us/app/socib/id482542716?mt=8>





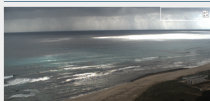
Observation and real time data

Beach evolution



Son Bou - Cam 01: 24/04/2014 12:00

Beach overview



Son Bou - Cam 03: 25/04/2014 17:18

Beach information

Beach type: 2.5 km linear natural beach with dunes
 Sediment type: medium to fine biogenic sands
 Scientific interest: beachrocks, lagoon inlet, rip currents

Hotel weather station

Air temperature

16.7°C

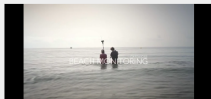
17.5°C High 12.9°C Low

Swimming conditions



No data received

More information



Forecast

Weather forecast

Light rain today, with temperatures rising to 22°C on Thursday.

Today



Breezy in the evening, with light rain until 21:00

Temp 17.7°C 13.5°C	Wind 13.7 km/h (SW)	Humidity 80%	Pressure 1012.3 hPa
--------------------------	------------------------	-----------------	------------------------

Saturday



Breezy overnight

Temp 21.4°C 14.0°C	Wind 14.3 km/h (SW)	Humidity 71%	Pressure 1015.0 hPa
--------------------------	------------------------	-----------------	------------------------

Sunday

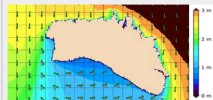


Windy in the morning

Temp 20.3°C 15.0°C	Wind 9.0 km/h (SW)	Humidity 70%	Pressure 1013.3 hPa
--------------------------	-----------------------	-----------------	------------------------

Powered by Prometeo

Waves forecast



Waves at 26/04/2014 08:00

Educational web: "Follow the glider"

STUDENTS | TEACHERS | EXPLORE

f | | | | | ESPAÑOL

FOLLOW THE GLIDER

EXPLORE

Where are our gliders today

DISCOVER THE OCEAN'S SECRETS WITH UNDERWATER GLIDERS

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Sistema d'observació i predicció costaner
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site credits | legal notice

JERICO


Cefas





CSIC


SOCIB

Marine Biotechnology
Climate Observing
and Forecasting
System


Educational web: "Follow the glider"

FOLLOW THE GLIDER 

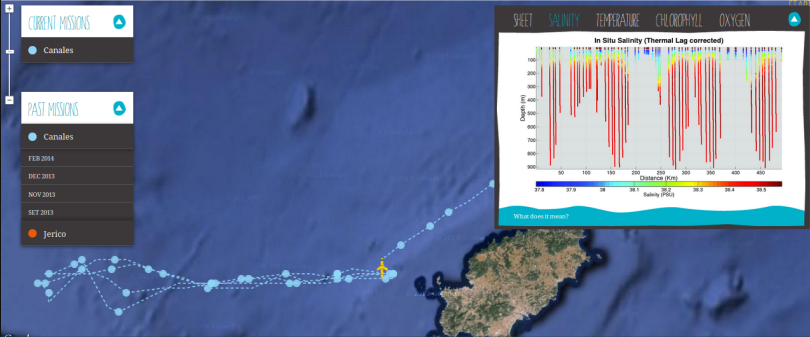
STUDENTS | TEACHERS | EXPLORE |     ESPAÑOL


CURRENT MISSIONS 

- Canales

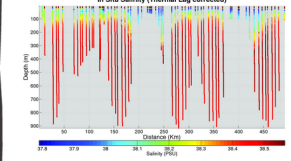
PAST MISSIONS 

- Canales
- FEB 2014
- DEC 2013
- NOV 2013
- SET 2013
- Jerico



SHEET **SALINITY** **TEMPERATURE** **CHLOROPHYLL** **OXYGEN** 

In Situ Salinity (Thermal Lag corrected)







Depth (m)

Distance (Kms)

Salinity (PSU)

What does it mean?

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    Research, Science,
Policy, Planning,
and Monitoring
Institute

Summary

Challenge: Integrated, multi-platform system

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Principles: discoverable,
open-access,
quality-controlled

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Principles: discoverable,
open-access,
quality-controlled

Priorities: service to scientists,
technology developments,
response to societal needs



Thanks
for your attention

www.socib.es

✉ data.centre@socib.es