



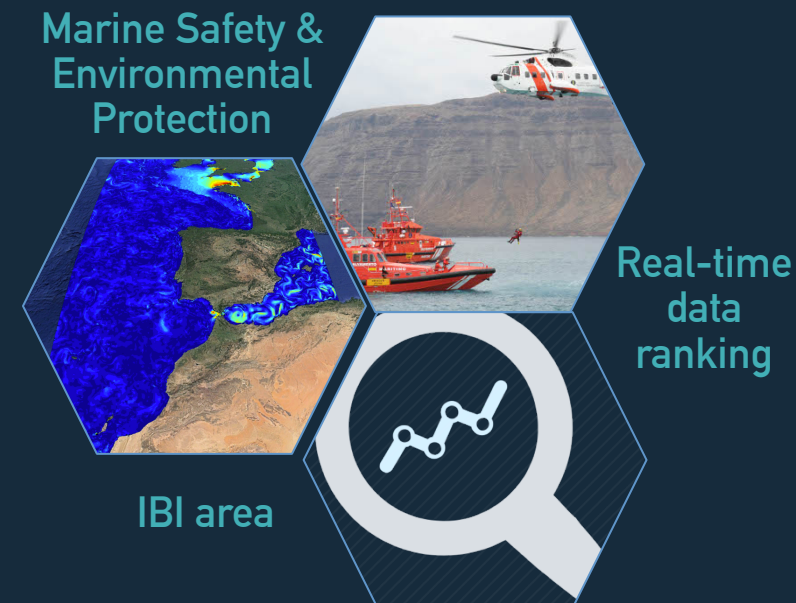
IBISAR: real-time data ranking in the IBI area for emergency and SAR operators



Emma Reyes, B. Mourre, P. Rotllán, I. Hernández, E. Comerma, T. Tajalli-Bakhsh,
A. Rubio, J. Mader, L. Ferrer, C. De Lera, E. Álvarez-Fanjul, A. Orfila, J. Tintoré

OUTLINE

- 01 Key numbers and facts
- 02 IBISAR service overview
- 03 IBISAR: accurate data in 3 steps
- 04 IBISAR: main elements
 - Copernicus Marine Service products used
 - IBISAR: Viewer
 - IBISAR: Skill Assessment
- 05 IBISAR: Validation - Ibiza Channel
- 06 Benefits for targeted users
- 07 Users & how to use it
- 08 Promotional activities



01 KEY NUMBERS & FACTS

Spanish SAR Agency



310.000

People assisted in 25 years



19+1

Marine Rescue Centres



4

SAR responsibility areas



50 %

SAR cases within 4 km offshore



>4700

SAR operations

IBISAR



>1500

Spanish SAR professionals



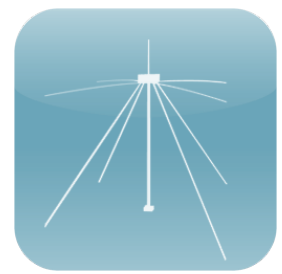
2

Areas of benefits



4

IBI-subregions



4

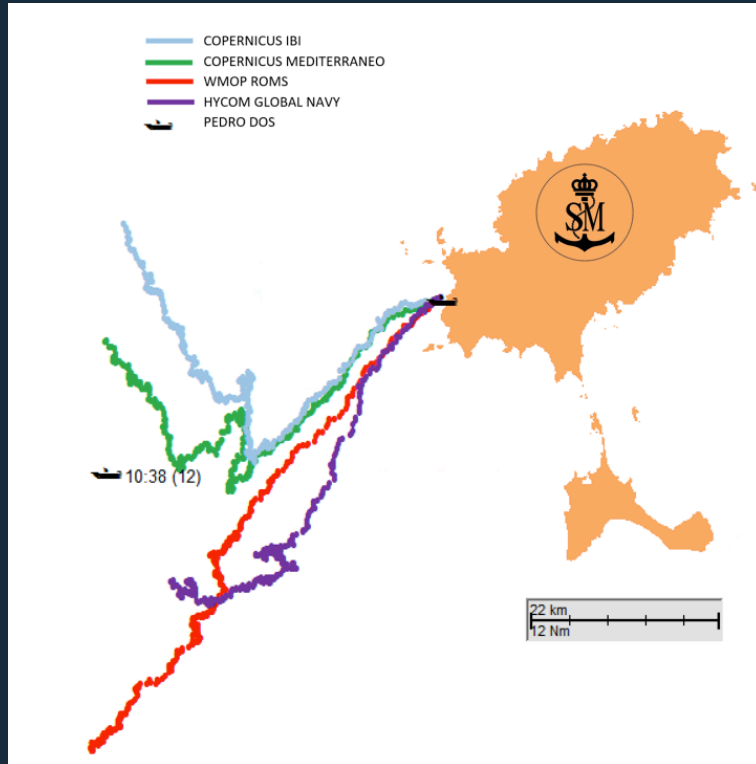
HF radar sites



4

CMEMS models

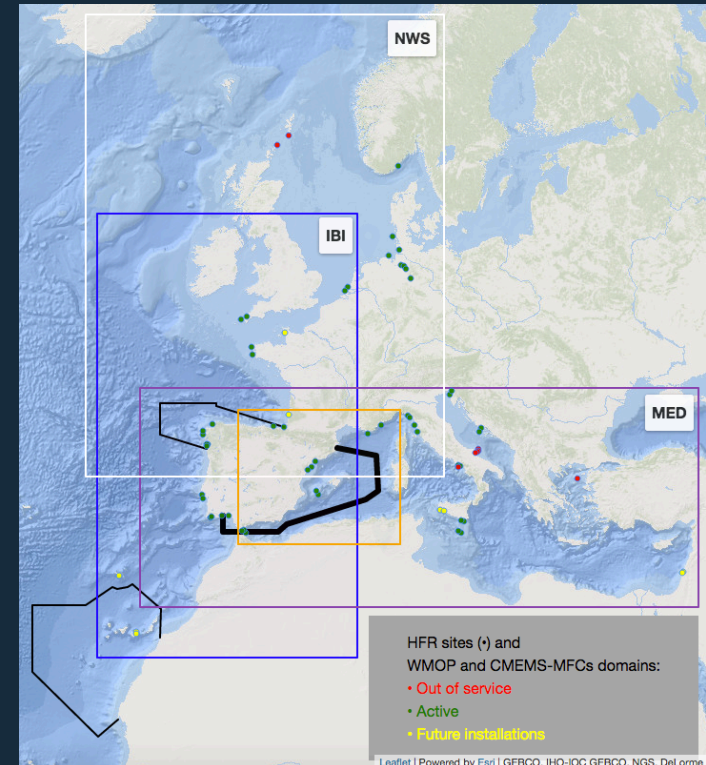
End-users overarching concern



Simulated trajectories from different models: drifting motorboat "Pedro II"

SAR operators needs data confidence

Copernicus Marine Service products are crucial...



Map showing CMEMS-MFC models overlapping in the IBI region and SAR areas

...to support Marine Safety & Environmental Protection

How can we improve emergency response at sea?

SOS!

SAR

How can we improve emergency response at sea?

End-users needs

Reliable current observations and forecasting are essential

Easily interpretable metrics

User-friendly automated skill assessment

02 IBISAR SERVICE OVERVIEW



GOBIERNO
DE ESPAÑA

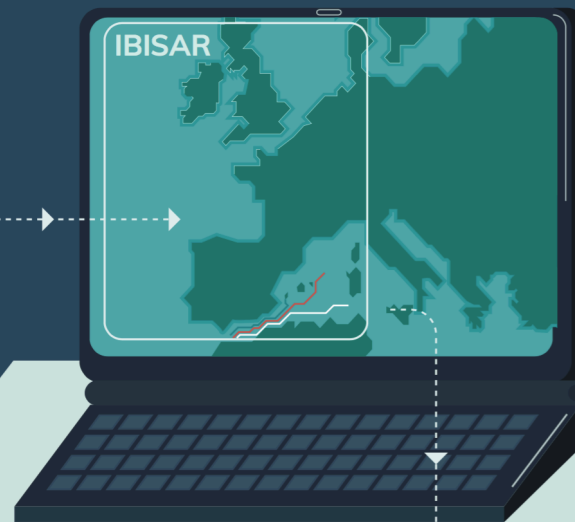
MINISTERIO
DE FOMENTO



Salvamento Marítimo

Puertos del Estado

Effective response
needs the most
accurate data



SOS!



How can we improve emergency
response at sea?

IBISAR service

Provides **real-time** information of the
most accurate ocean current **forecast**
in the **IBI** area

Facilitates **decision-making** to SAR
operators and emergency
responders

End-users needs

Reliable current observations and
forecasting are essential

Easily interpretable **metrics**

User-friendly automated skill
assessment

03 IBISAR: ACCURATE DATA IN 3 STEPS

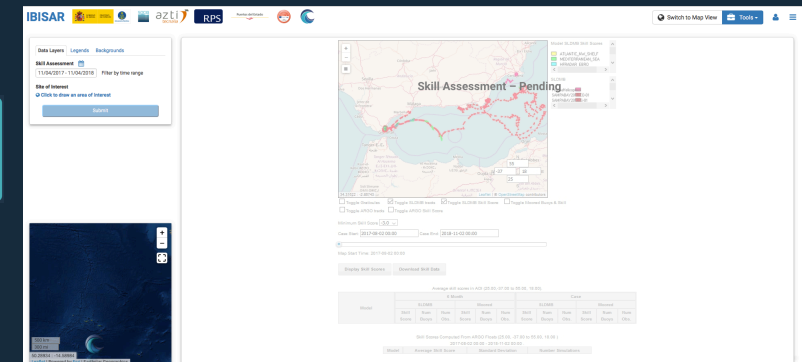
1.- Simulates trajectories using available forecast models



2.- Compares simulated trajectories vs. real drifters

3.- Ranks models based on their performance





Ocean models

What? Current forecast

How? Target sources



•Global Ocean

[GLOBAL ANALYSIS FORECAST PHYS 001 015](#)

[GLOBAL ANALYSIS FORECAST PHY 001 024](#)

•European North-West Shelf Seas

[NORTHWESTSHELF ANALYSIS FORECAST PHYS 004 001 b](#)

•Iberia-Biscay-Ireland Regional Seas

[IBI ANALYSIS FORECAST PHYS 005 001](#)

•Mediterranean Sea

[MEDSEA ANALYSIS FORECAST PHYS 006 013](#)

[MEDSEA REANALYSIS PHYS 006 004](#)

In-Situ Data

What? Current surface observations

How? Reference source



•Global Ocean

[INSITU GLO NRT OBSERVATIONS 013 030](#)

•Iberia-Biscay-Ireland Regional Seas

[INSITU IBI NRT OBSERVATIONS 013 033](#)

Satellite

What? Current surface observations

How? Model assessment and data assimilation



•European Seas

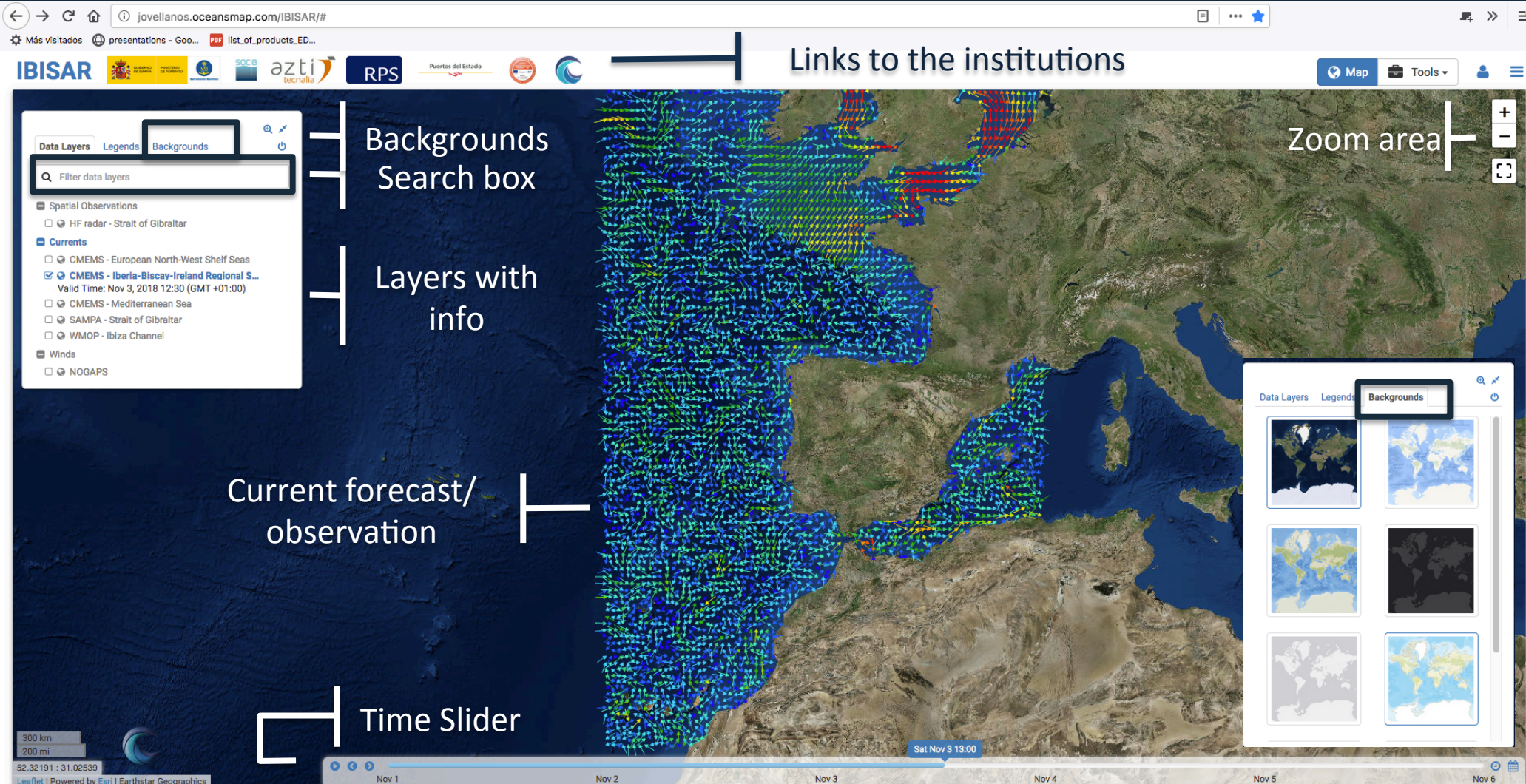
[SEALEVEL EUR PHY ASSIM L3 NRT OBSERVATIONS 008 043](#)

•Mediterranean Sea

[SEALEVEL MED PHY L3 REP OBSERVATIONS 008 049](#)

[SEALEVEL MED PHY L4 REP OBSERVATIONS 008 051](#)

<http://jovellanos.oceansmap.com/IBISAR/#>



<http://jovellanos.oceansmap.com/IBISAR/#>

IBISAR

Map Tools

Data Layers Legends Backgrounds

Q IBI

Currents

CMEMS - Iberia-Bisc...
Valid Time: Nov 2, 2018 12:00 / (GMT -1:00)
CMEMS - Iberia-Biscay-Ireland Regional Seas

Search your region

More info

Customize appearance

Find on map

300 km
200 mi

Leaflet | Powered by Esri | Earthstar Geographics

Nov 1 Nov 2 Nov 3 Nov 4 Nov 5 Nov 6

Sat Nov 3 13:00

<http://jovellanos.oceansmap.com/IBISAR/#>

IBISAR

Map Tools

Data Layers Legends Backgrounds

Filter data layers

Spatial Observations

- ☐ HF radar - Strait of Gibraltar

Currents

- ☐ CMEMS - European North-West Shelf Seas
- ☐ CMEMS - Iberia-Biscay-Ireland Regional Se...
- ☐ CMEMS - Mediterranean Sea
- ☐ SAMP - Strait of Gib...
- ☐ WMOP - Ibiza Channel

Winds

- ☐ NOGAPS

Find on map

Show region & zoom

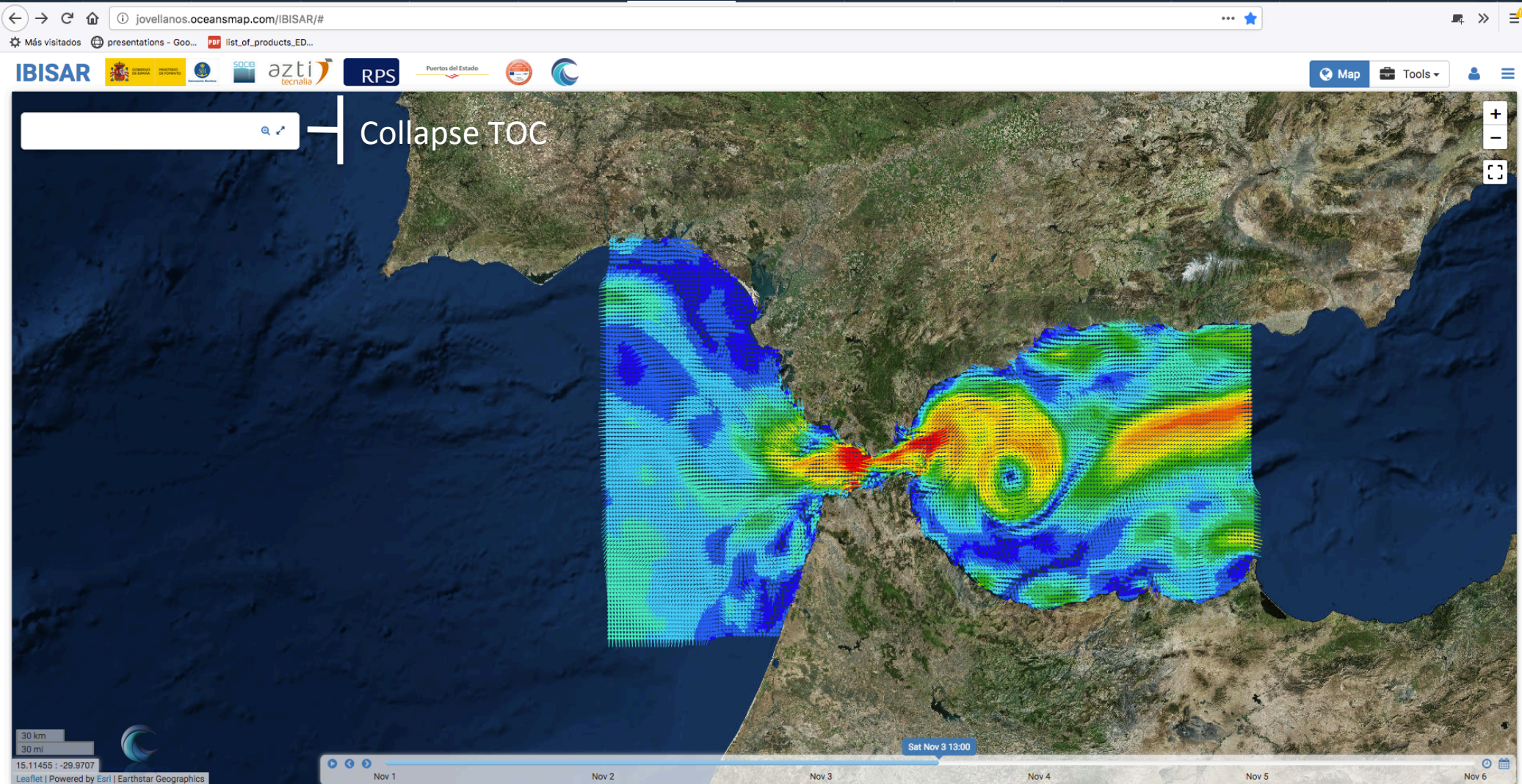
300 km
200 mi

Sat Nov 3 13:00

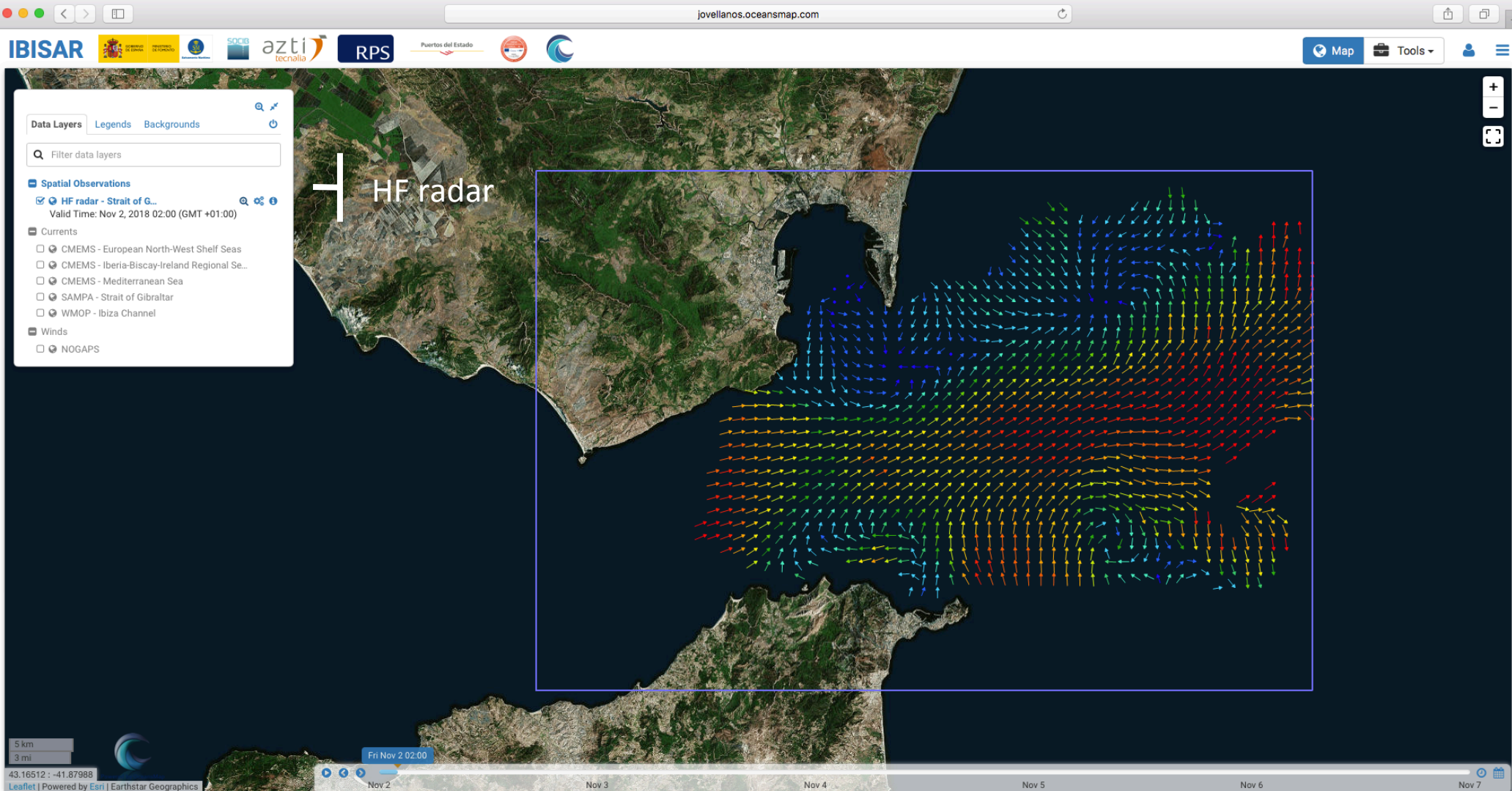
Nov 1 Nov 2 Nov 3 Nov 4 Nov 5 Nov 6

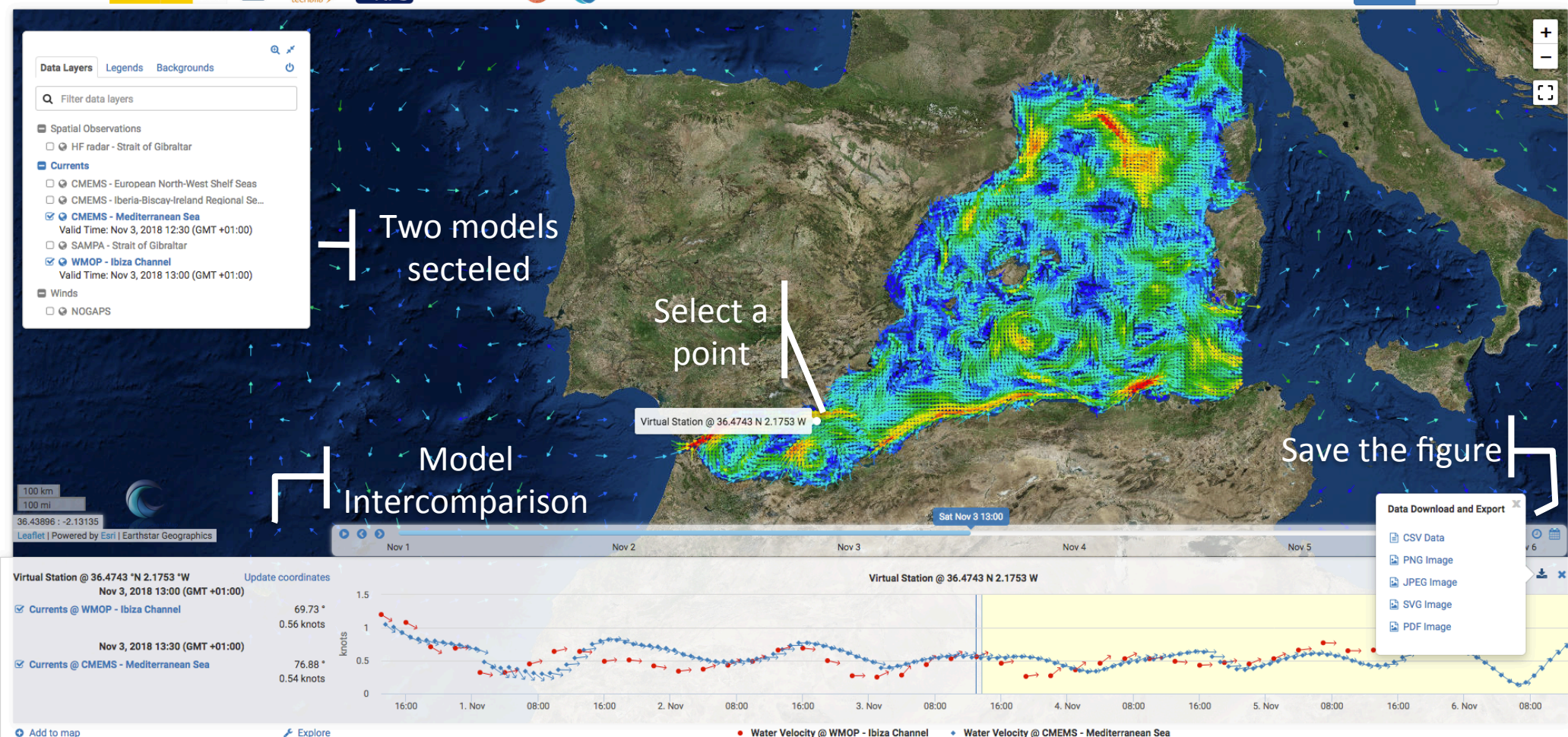
Leaflet | Powered by Esri | Earthstar Geographics

<http://jovellanos.oceansmap.com/IBISAR/#>



<http://jovellanos.oceansmap.com/IBISAR/#>





Skill Assessment

Switch to Map View

Skill Assessment

Select period

Select area of interest (AOI)

Target sources

Reference sources

Map showing real and simulated trajectories



☐ Toggle Graticules ☒ Toggle SLDMB tracks ☒ Toggle SLDMB Skill Score ☐ Toggle Moored Buoys & Skill ☐ Toggle ARGO tracks ☐ Toggle ARGO Skill Score

Minimum Skill Score: -3.0

Case Start: 2017-08-02 00:00

Case End: 2018-11-02 00:00

Map Start Time: 2017-08-02 00:00

Display Skill Scores

Download Skill Data

Download skill data

Display Skill Scores (SS)

Table presenting SS

COMING SOON

November 2019

Average skill scores in AOI (25.00, -37.00 to 55.00, 18.00).

Model	6 Month						Case					
	SLDMB			Moored			SLDMB			Moored		
	Skill Score	Num Buoys	Num Obs.	Skill Score	Num Buoys	Num Obs.	Skill Score	Num Buoys	Num Obs.	Skill Score	Num Buoys	Num Obs.

Skill Scores Computed From ARGO Floats (25.00, -37.00 to 55.00, 18.00)

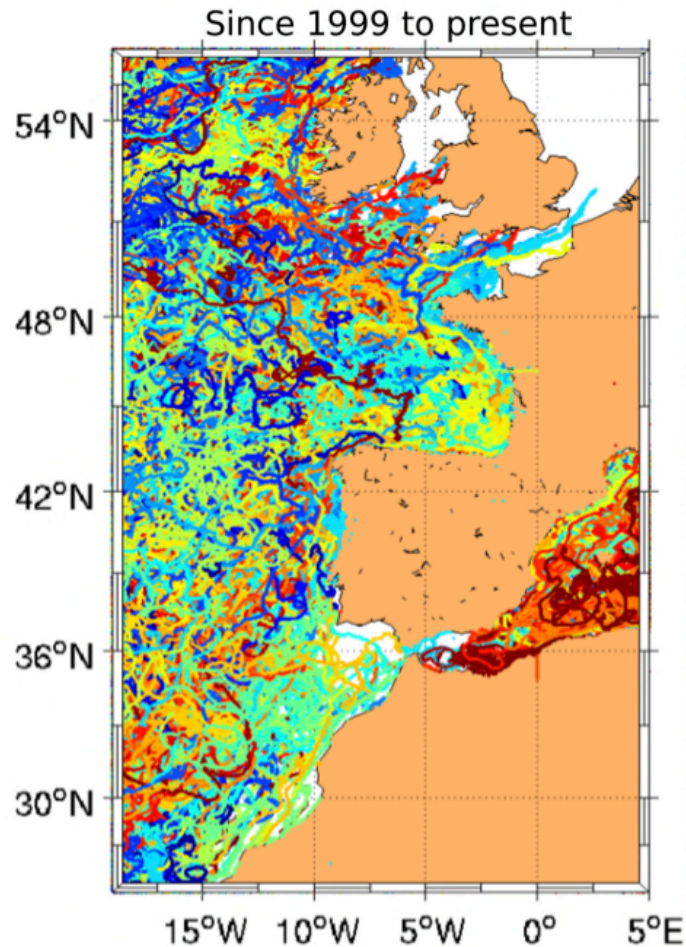
2017-08-02 00:00 - 2018-11-02 00:00

Model	Average Skill Score	Standard Deviation	Number Simulations
-------	---------------------	--------------------	--------------------

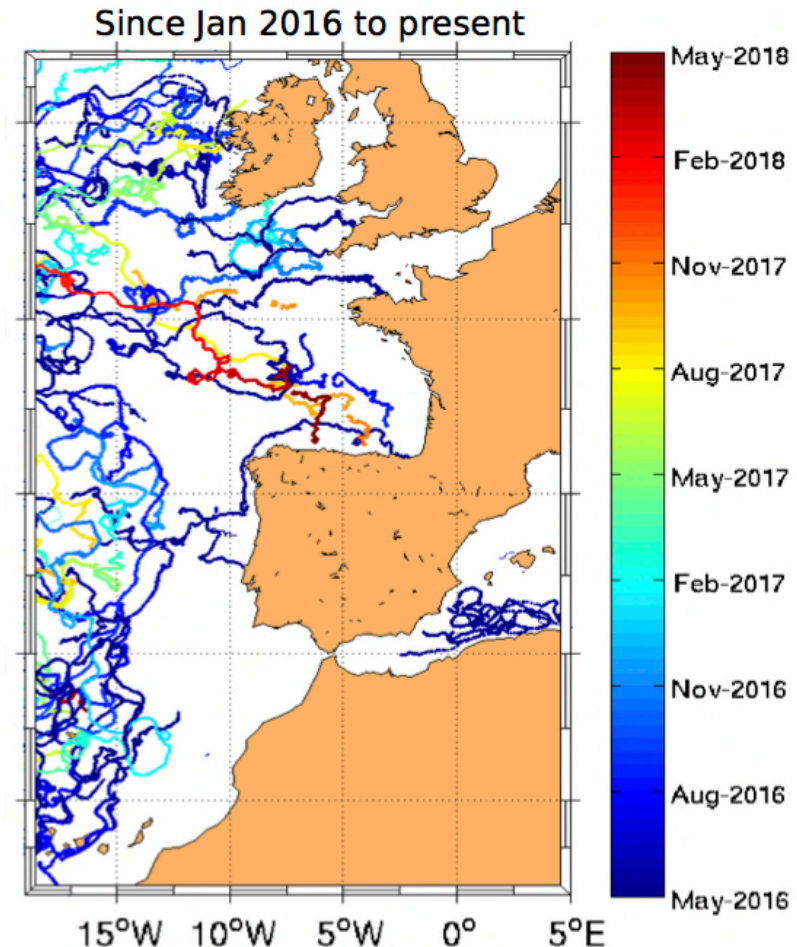


Drifter trajectories available in Copernicus Marine Service - INSTAC

Drifter trajectories provided by CMEMS in the IBI region



1999 - present

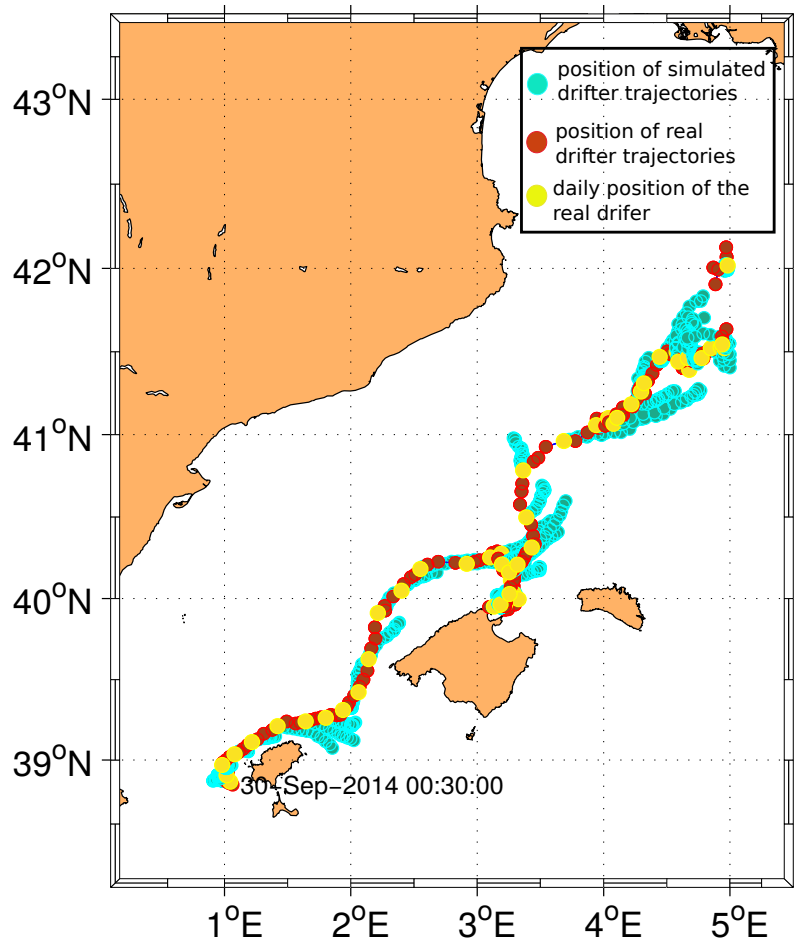


2016 - present

05 IBISAR: VALIDATION - IBIZA CHANNEL

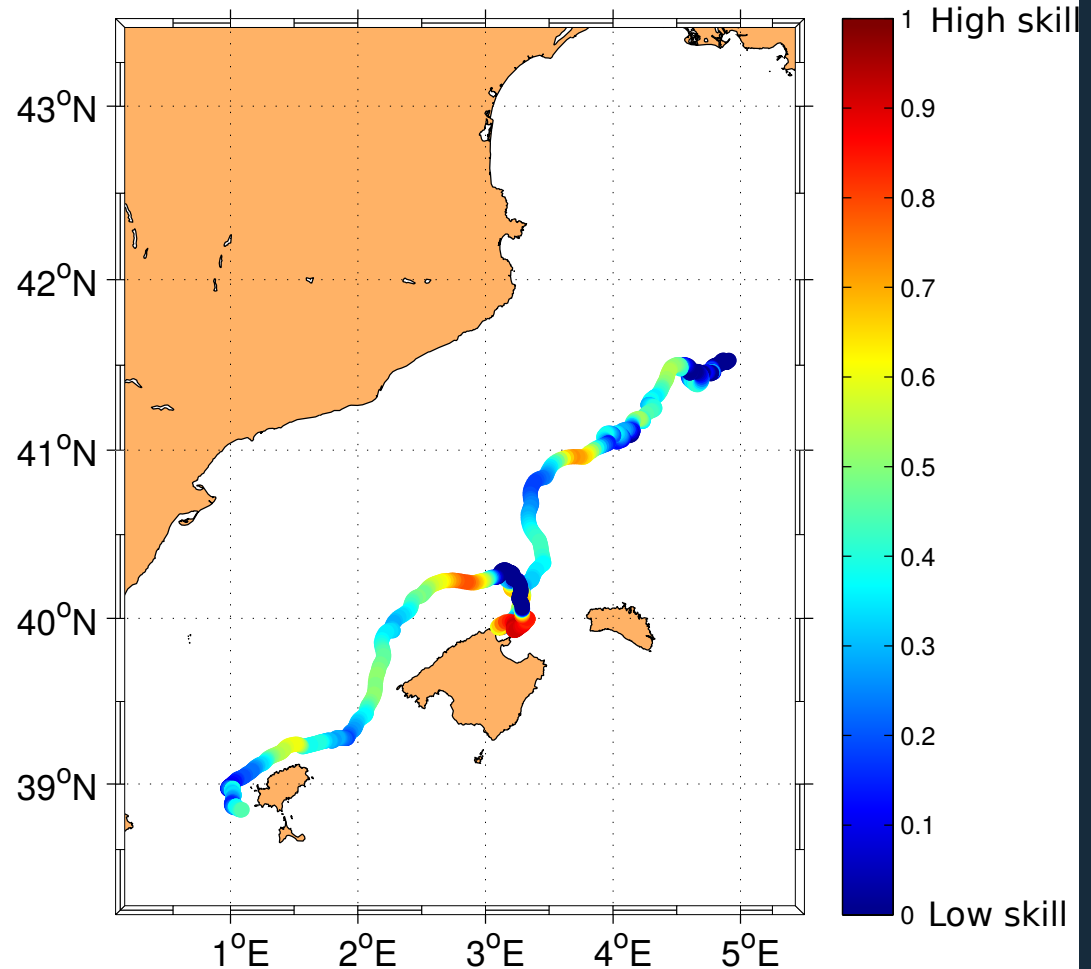
CMEMS-IBI simulated vs. CODE drifter trajectories

Comparison of virtual trajectories of particles advected with the IBI model velocity field with a real CODE drifter trajectory



IBI Skill Score after 72 hours

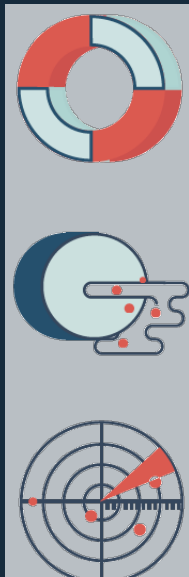
Model skill score after 72 hours of trajectory simulations



Allocate resources effectively

Users:

Government agencies & private companies



Search and rescue

Marine pollution control

Maritime traffic control

How to use it?



Online in
November 2019



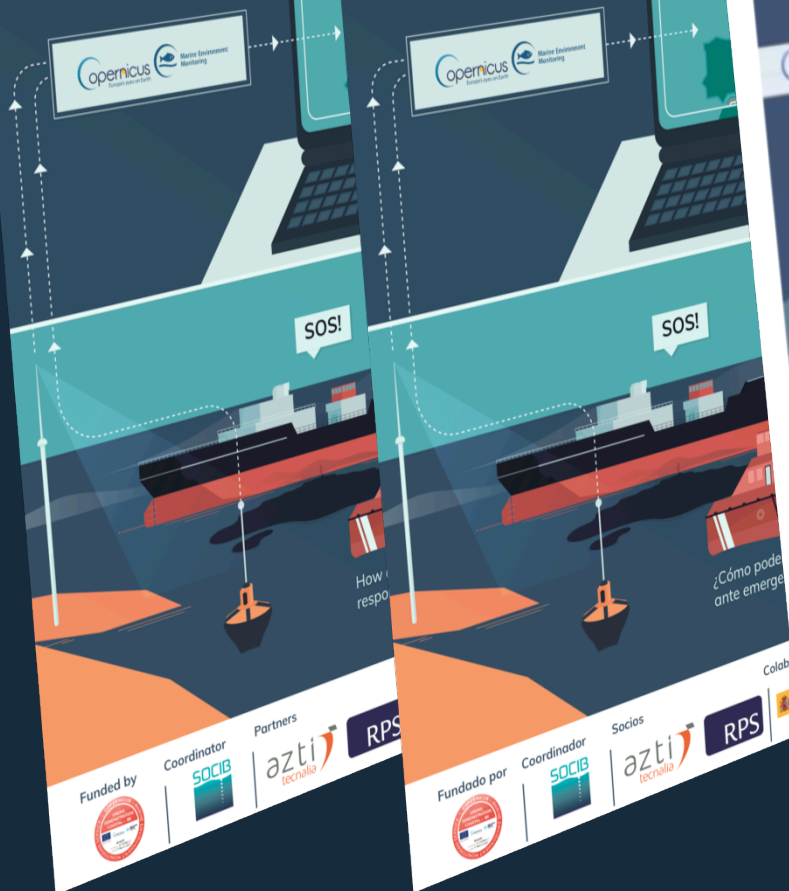
Visit www.ibisar.es
"Access IBISAR"



Select area &
period > display

IBISAR

Effective response needs the most accurate data



IBISAR

Una respuesta efectiva precisa datos más fiables



YouTube



Watch IBISAR service introduction

Buscar

Inicio Momentos Notificaciones Mensajes

JULY 4-6 TOULOUSE, FRANCE

4TH GEO BLUE PLANET SYMPOSIUM

Our Future is Blue: Linking Ocean and Coastal Information with Societal Needs

#GEOBLUEPLANET4
<https://symposium.geoblueplanet.org>

Late registration from 05 June

Mercator Ocean

French producer of ocean analyses & forecasts. Delegate of the European Union's Copernicus Marine Environment Monitoring Service (CMEMS_EU) since November 2014

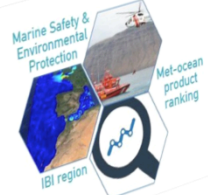
Toulouse area, France
mercator-ocean.fr/en
Se unió en enero de 2014

Twitter a Mercator Ocean

26 Seguidores que conoces

313 fotos y videos

Mercator Ocean retweeted
SOCIB @socib_jctc - 23 may.
Last week, we have organized the kick-off meeting of the IBISAR project. This project is funded by @MercatorOcean to improve the response capabilities and the efficiency of maritime operations. socib.es/index.php?seccion=ictnews
#ICTNews
Traductor Tweet



TU AZTI, Copernicus Marine y 8 más

5 7

A quién seguir

Copernicus EU @CopernicusEU

Copernicus ECOMF @ECOMF

EMODnet @EMODnet

Encuentra a personas que conoces

Importa tus contactos de Gmail

Conecta otras fuentes de direcciones

Tendencias para ti

#HurricaneUna historia de Star Wars. Ya en CNES.

#MisionDeCensura

Quedarse en casa una medida de emergencia

La vida en el planeta

- Multi-lingual (ES EN)
- Content:
 - Service Overview
 - CMEMS products used
 - Benefits for users
- Link to **IBISAR service** “Access Page”
- **Contact** details
- Link to active **social media** accounts
- “**News**” section or embedded Twitter timeline
- “**Other related services**” section
- **Promotional materials:** leaflets, posters, graphic-motions

Show me IBISAR!

Illustrations Video **News** Related Services Contact Us

IBISAR
contact

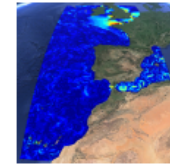
ibisar@socib.es



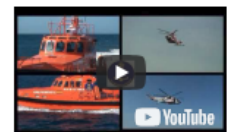
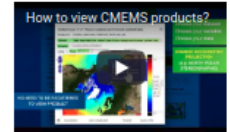
servicedesk.cmems@mercator-ocean.eu



IBISAR: a real-time met-ocean product ranking for emergency & SAR operators.



- **Service overview.** A Environmental Data Server dashboard skill assesment service for real-time met-ocean product ranking in the IBI region for emergency responders & SAR operators.
- **CMEMS products used:**
 - CMEMS MFCs current velocity forecast available in the IBI region: [GLOBAL](#) [NWS](#) [IBI](#) [MED](#)
 - CMEMS TACs NRT current velocity & satellite sea level products in the IBI region: [GLOBAL](#) [NWS](#) [IBI](#) [MED](#)
 - Upcoming High-Frequency Radar Ocean surface currents
- **Benefits for users:**
 - get information instead of data
 - get user-friendly access to met-ocean products at 3 clicks
 - get support to select the best met-ocean product available
 - get access to easily interpretable & understandable information metrics
 - support planning for effective resource allocation & search effort



Show me IBISAR!

Illustrations Video **News** Related Services Contact Us

Tweets about @socib_icts+AND+#IBISAR

pt-PROTECMA
@ptprotecma
Ya está en marcha el #IBISAR project coordinado por el SOCIB @socib_icts y financiado por @MercatorOcean El objetivo general es mejorar las capacidades de respuesta y la eficiencia de las operaciones marítimas. Buena proa para todos!

SOCIB
@socib_icts
Last week, we have organized the kick-off meeting of the #IBISAR project

Embed

View on Twitter

ACKNOWLEDGEMENTS



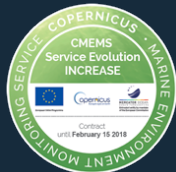
Spanish Maritime Safety and Rescue Agency



Spanish Port System



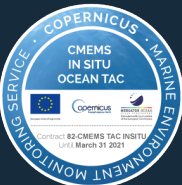
COSMO Project (CSIC-ICM)



INCREASE (Copernicus Marine Service – Service Evolution)



IBISAR (Copernicus Marine Service – User Uptake)



Copernicus Marine Service – INSTAC –phase2



SOCIB

Balearic Islands
Coastal Observing
and Forecasting
System

THANKS FOR YOUR ATTENTION



Visit www.ibisar.es

Effective response needs the most accurate data



@socib_icts #IBISAR