



# **EMODnet – Bathymetry (HRSM)**

**By**

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**SeaDataCloud Plenary meeting – October 2017 – Athens - Greece**

# Process flow and services

**Adoption of SeaDataNet standards and services**

**Common method and software (Globe) used by all data providers and regional sea coordinators**

## Survey data sets

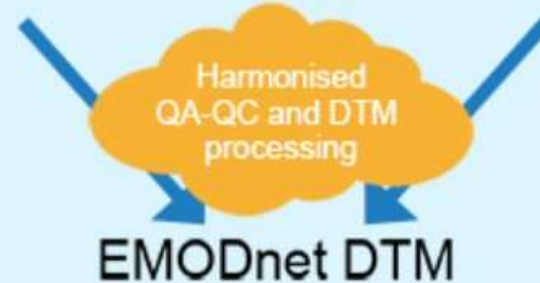


**Go TO: CDI Data Discovery and Access service**

## Composite DTM's



**GO TO: Sextant Catalogue service**



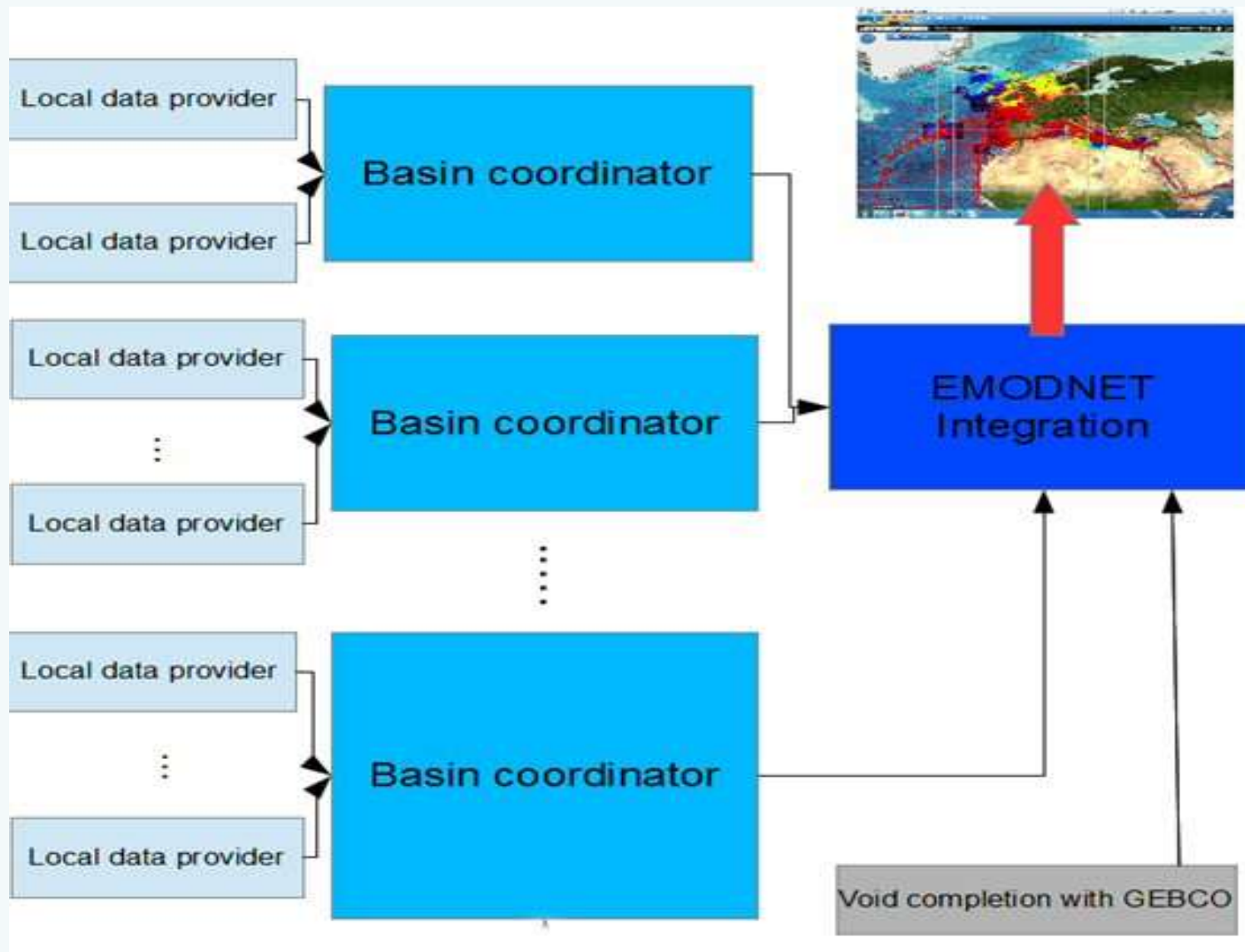
**EMODnet DTM**



**GO TO: Bathymetry Viewing and Download service**

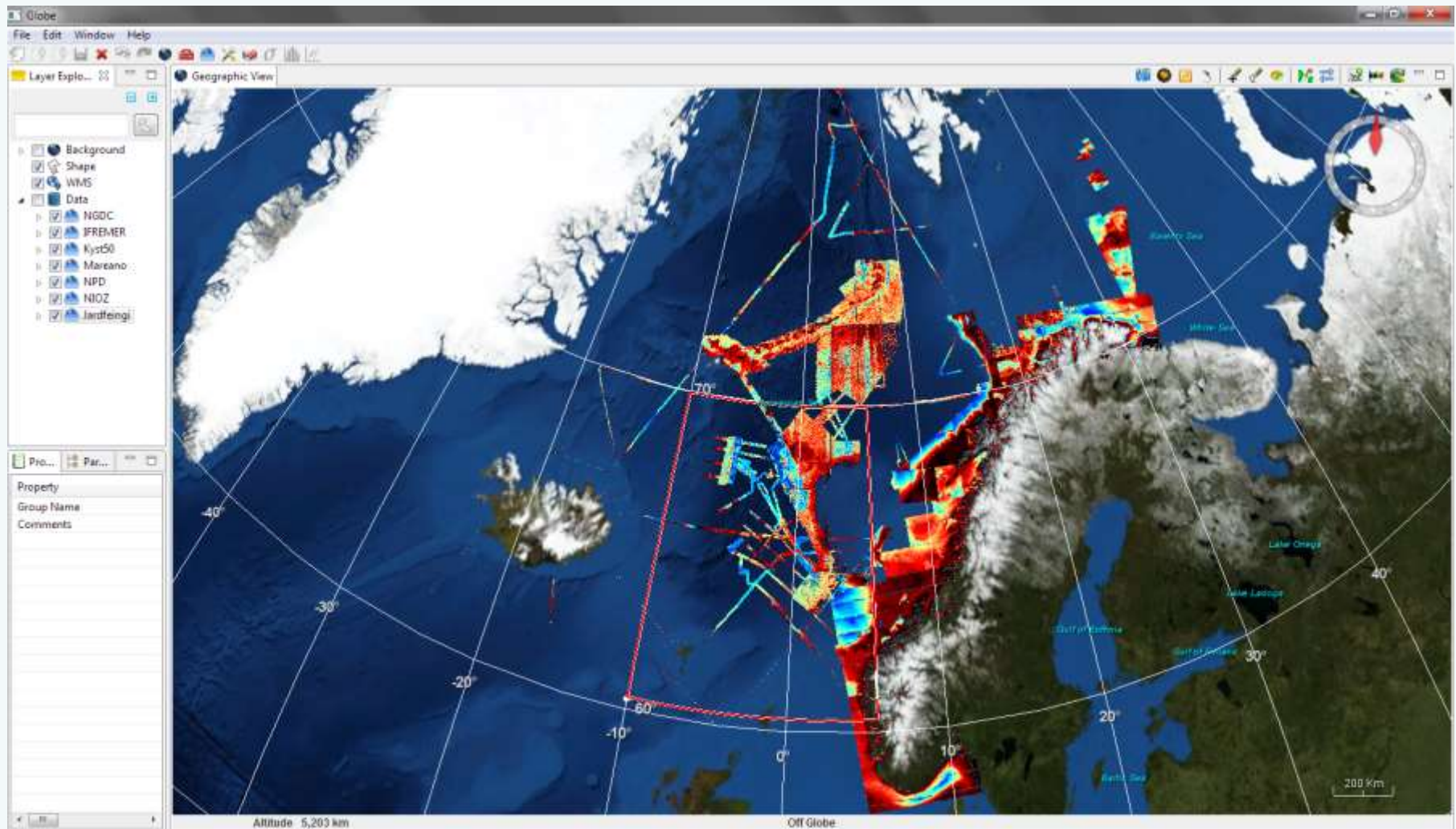
# Common Methodology

October 2016



From local data to regional DTMs to EMODnet DTM

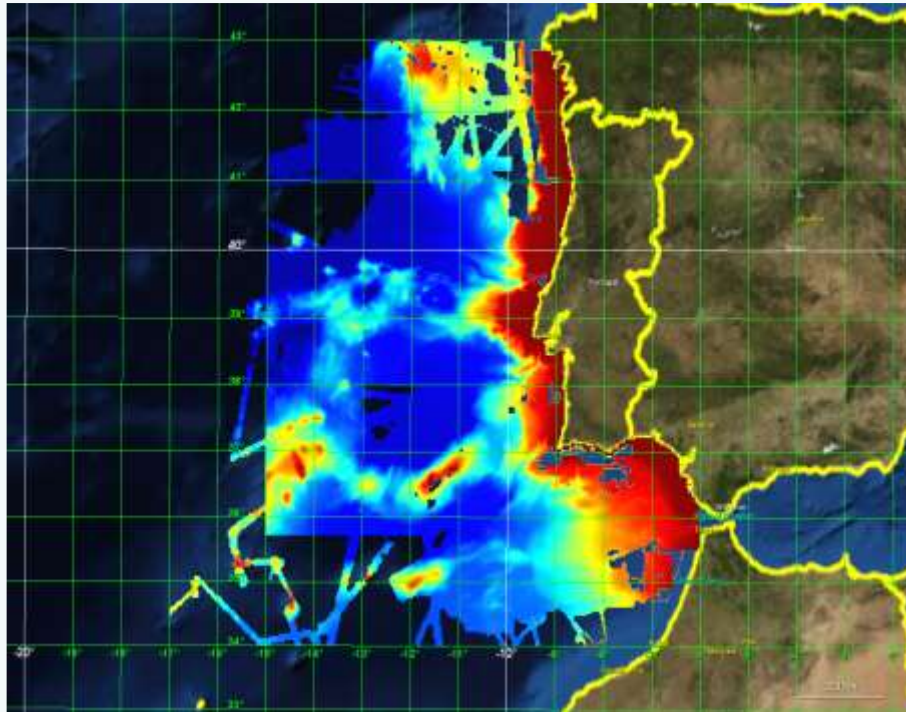
# Use of GLOBE software



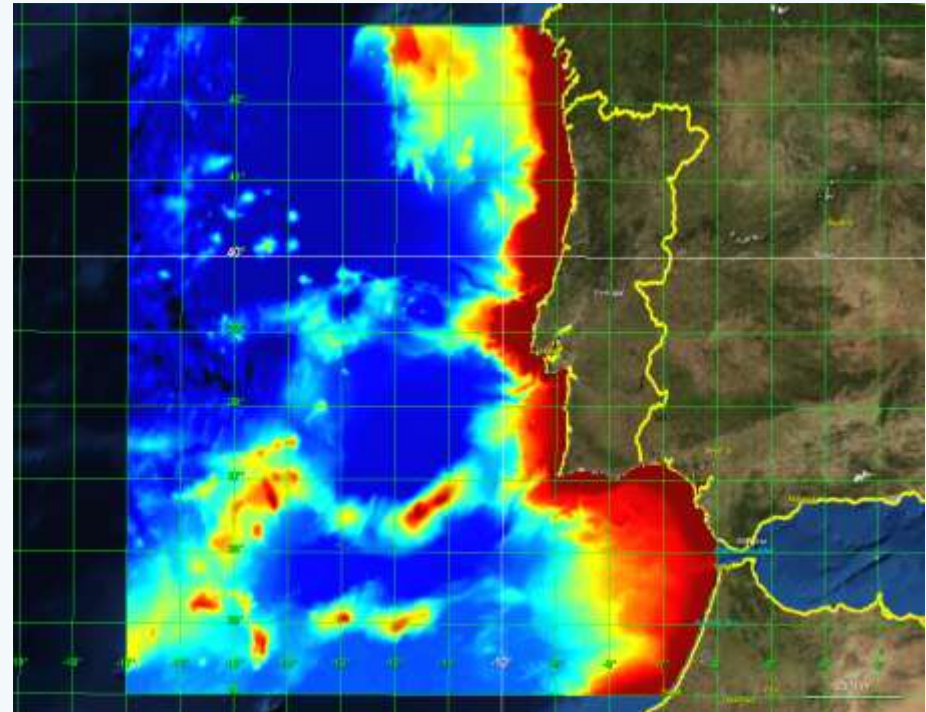
Norwegian and Icelandic seas – Arctic – example



## *Regional DTM production, including GEBCO for gaps – example Atlantic near Iberian peninsula*



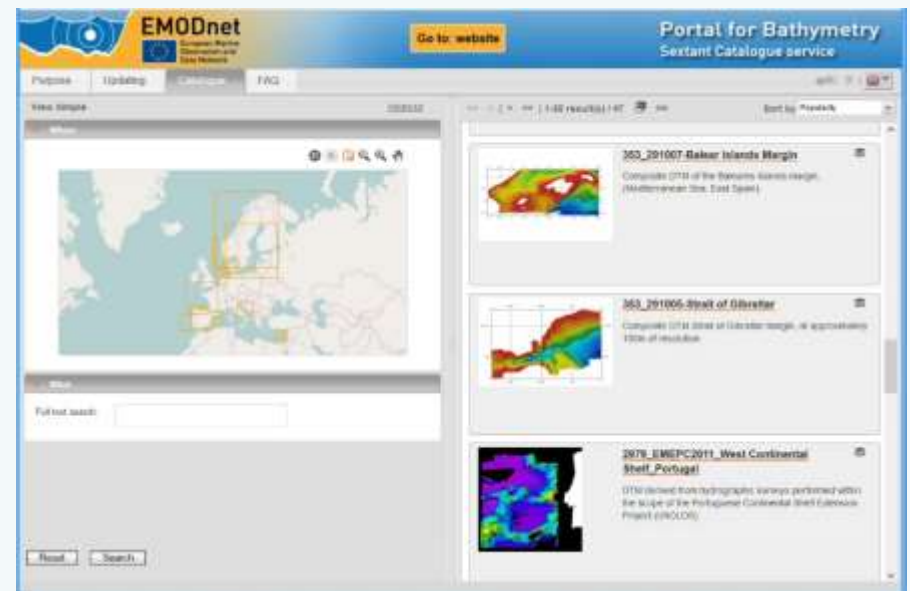
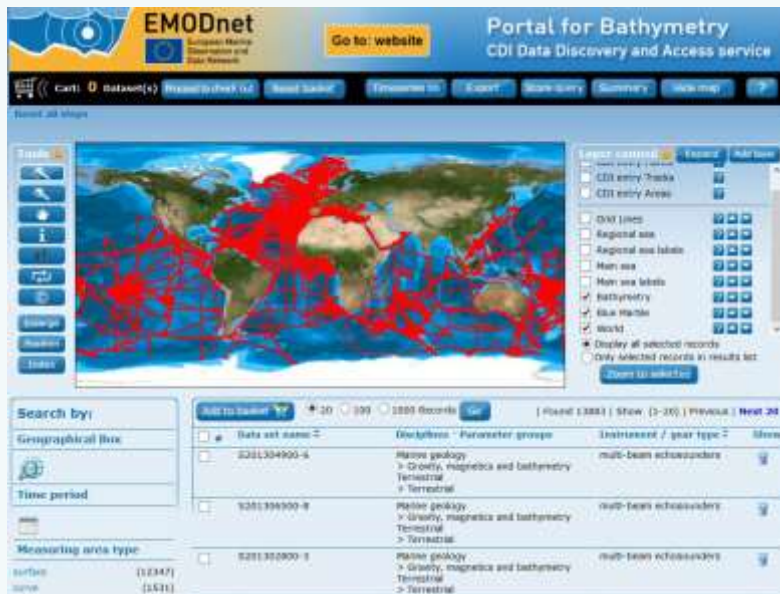
Average depth for the  
interpolated DTM  
(using survey data &  
CDTM's)



Resulting DTM with  
average depth after  
GEBCO integration and  
smoothing

# Data gathering results

- Up till today, **20740** survey CDI metadata records from **30** data centres and **221** data originators **from 1816 to 2017** have been collated and imported into the dedicated EMODnet Bathymetry CDI data discovery and access service.
- The SeaDataNet Data Products Catalogue service (Sextant) gives **79** metadata records about composite DTMs that have been used next to survey data sets





# Bathymetry Viewing and Download service with EMODnet DTM



<http://www.emodnet-bathymetry.eu>



# EMODnet

European Marine  
Observation and  
Data Network

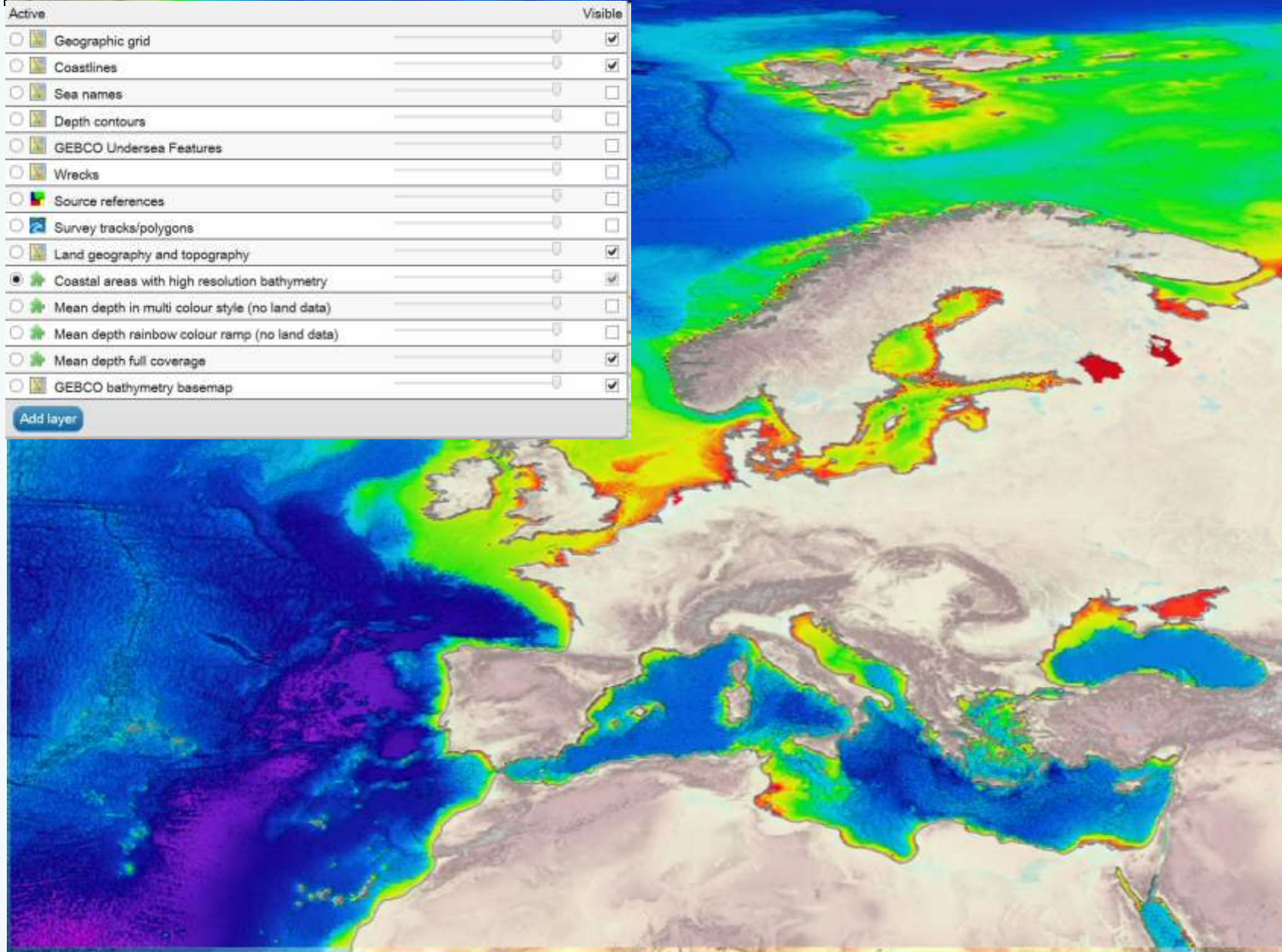
[Go to: website](#)

## Portal for Bathymetry

Bathymetry Viewing and Download service

Mean depth rainbow colour ramp (▼) Retrieve depth Depth profile Legend Download products Measure distance Settings Help Personal layer Login

Active		Visible	
<input type="checkbox"/>	Geographic grid	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	Coastlines	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	Sea names	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	Depth contours	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	GEBCO Undersea Features	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	Wrecks	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	Source references	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	Survey tracks/polygons	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	Land geography and topography	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="radio"/>	Coastal areas with high resolution bathymetry	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	Mean depth in multi colour style (no land data)	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	Mean depth rainbow colour ramp (no land data)	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	Mean depth full coverage	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	GEBCO bathymetry basemap	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<a href="#">Add layer</a>			





EMODnet



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Go to: website

Portal for Bathymetry

Bathymetry Viewing and Download service

Survey tracks/polygons



Retrieve metadata



Order survey data

Download products



Measure distance



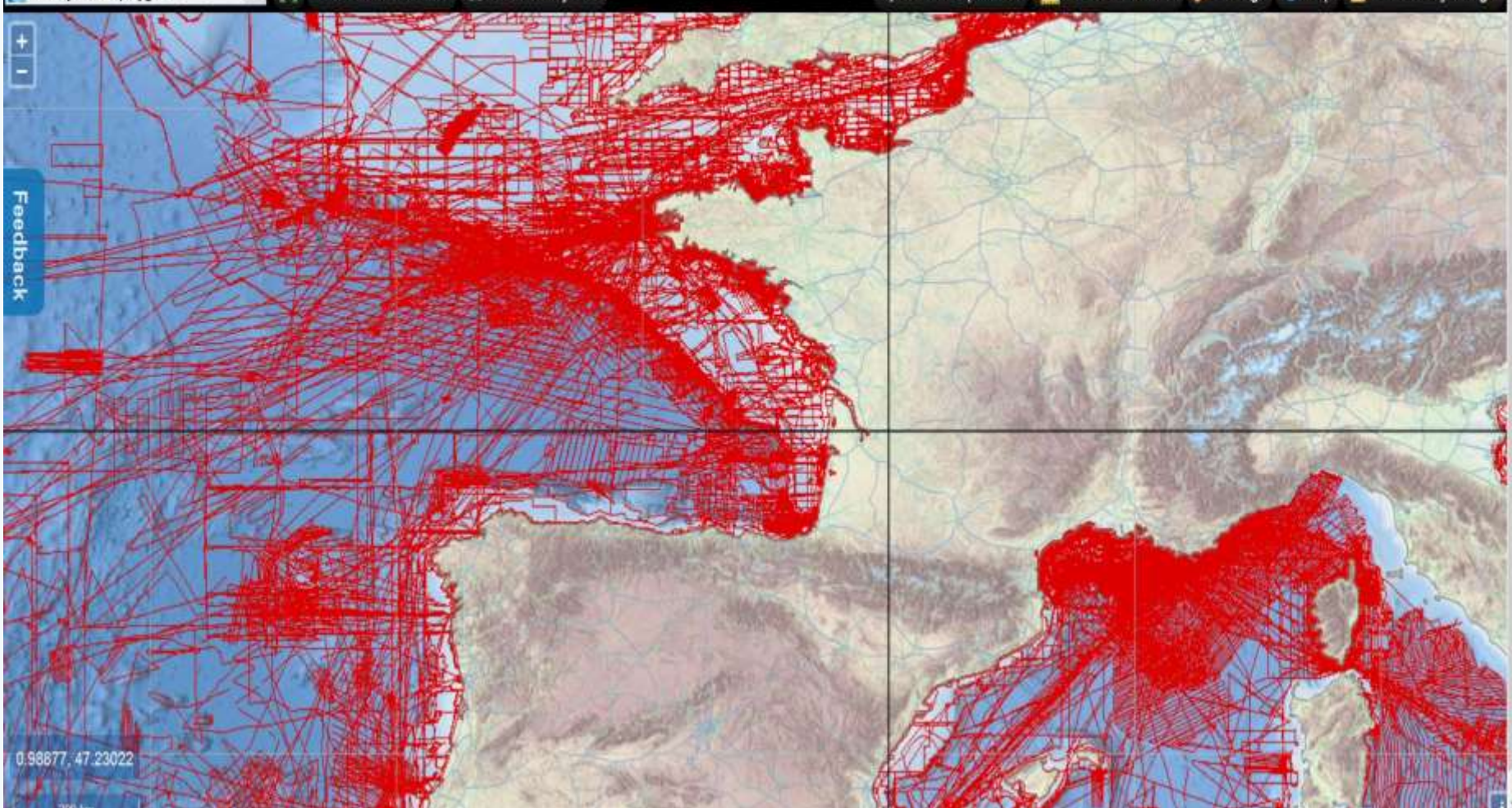
Settings



Help



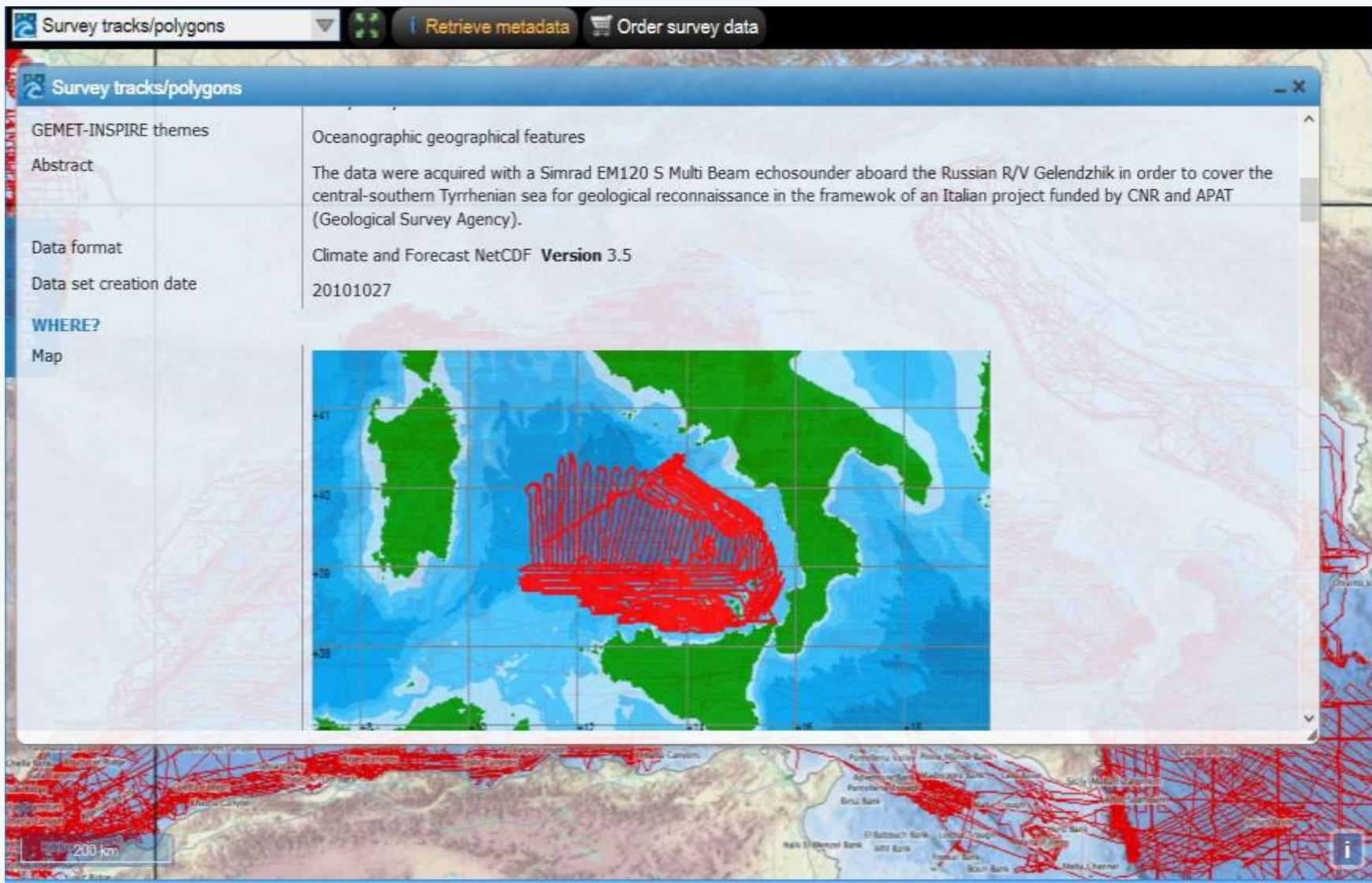
Personal layer Login



Layer with CDI data references

[sdn-userdesk@seadatanet.org](mailto:sdn-userdesk@seadatanet.org) – [www.seadatanet.org](http://www.seadatanet.org)

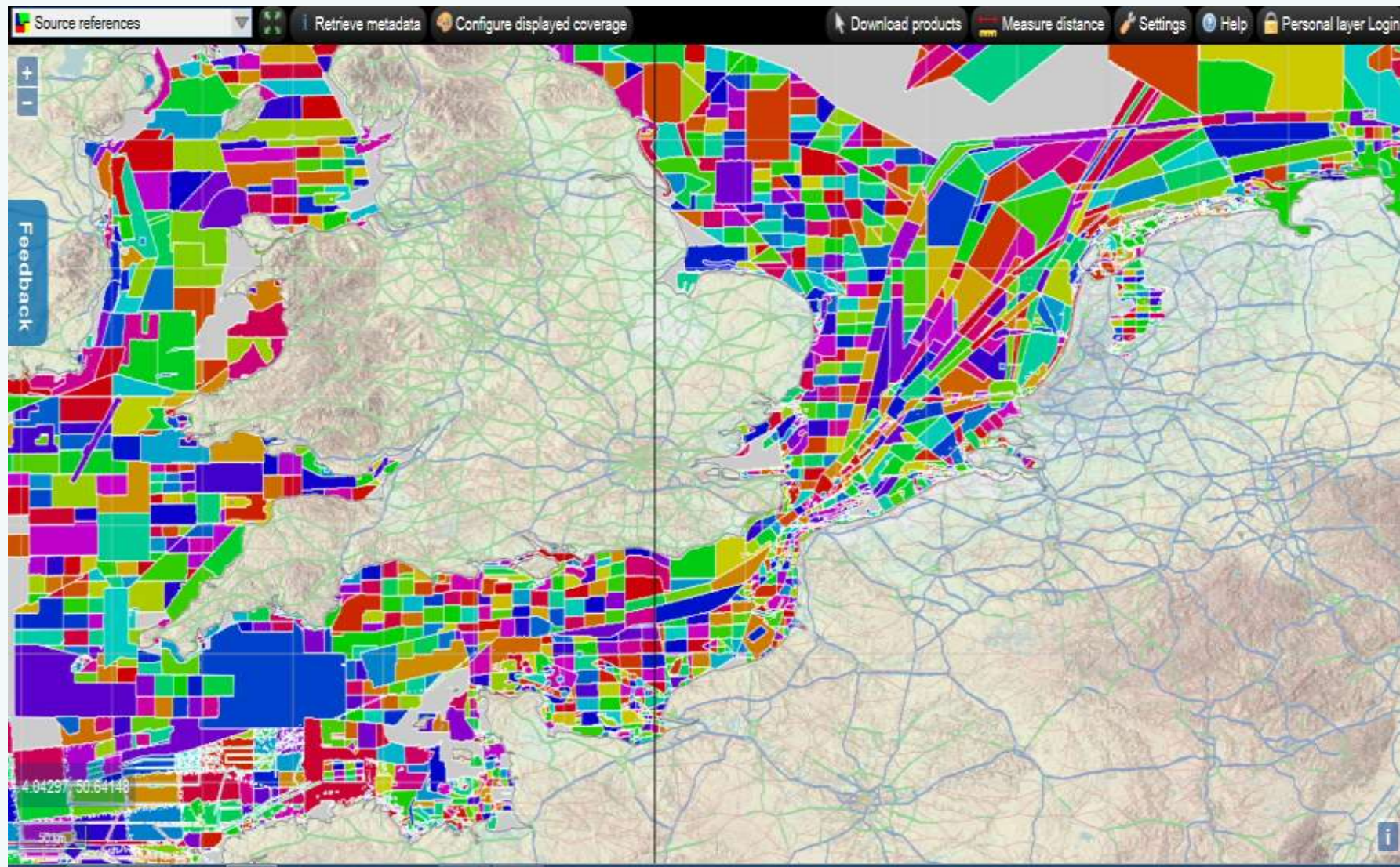




Layer with CDI data references and retrieving details

[sdn-userdesk@seadatanet.org](mailto:sdn-userdesk@seadatanet.org) – [www.seadatanet.org](http://www.seadatanet.org)





Layer with source references of used data sets and their coverage

[sdn-userdesk@seadatanet.org](mailto:sdn-userdesk@seadatanet.org) – [www.seadatanet.org](http://www.seadatanet.org)



The image is a screenshot of the EMODnet web application. At the top, the header includes the EMODnet logo (European Marine Observation and Data Network) and a 'Go to: website' button. The main title is 'Portal for Bathymetry' with the subtitle 'Bathymetry Viewing and Download service'. Below the header is a navigation bar with a dropdown menu set to 'Mean depth full coverage' and buttons for 'Retrieve depth', 'Depth profile', 'Legend', 'Download products', 'Measure distance', 'Settings', 'Help', and 'Personal layer Login'. The main content area displays a bathymetric map of the North Atlantic region, with a grid overlay. A 'Feedback' button is on the left. A download menu is open, showing options for downloading data in various formats: EMO file, EMO (without GEBCO data) file, ESRI ASCII file, GeoTiff file, NetCDF file, NetCDF (without GEBCO data) file, SD file, and XYZ file. The coordinates '-27.75332, 20.72090' are shown at the bottom left.

EMODnet  
European Marine Observation and Data Network

Go to: website

Portal for Bathymetry  
Bathymetry Viewing and Download service

Mean depth full coverage

Retrieve depth Depth profile Legend

Download products Measure distance Settings Help Personal layer Login

Feedback

B4

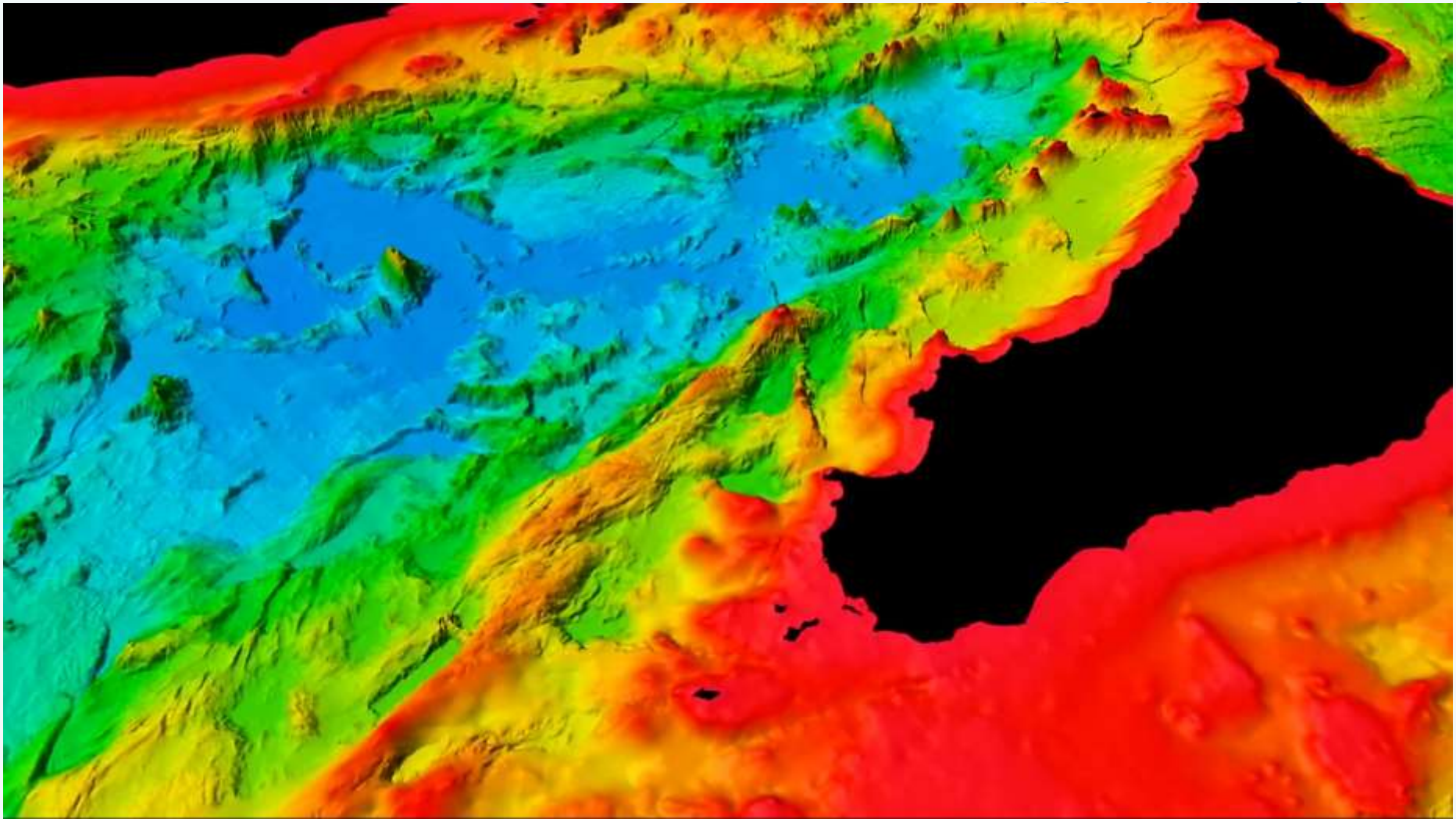
- Download as EMO file
- Download as EMO (without GEBCO data) file
- Download as ESRI ASCII file
- Download as GeoTiff file
- Download as NetCDF file
- Download as NetCDF (without GEBCO data) file
- Download as SD file
- Download as XYZ file

-27.75332, 20.72090

Download DTM in tiles in various formats

[sdn-userdesk@seadatanet.org](mailto:sdn-userdesk@seadatanet.org) – [www.seadatanet.org](http://www.seadatanet.org)

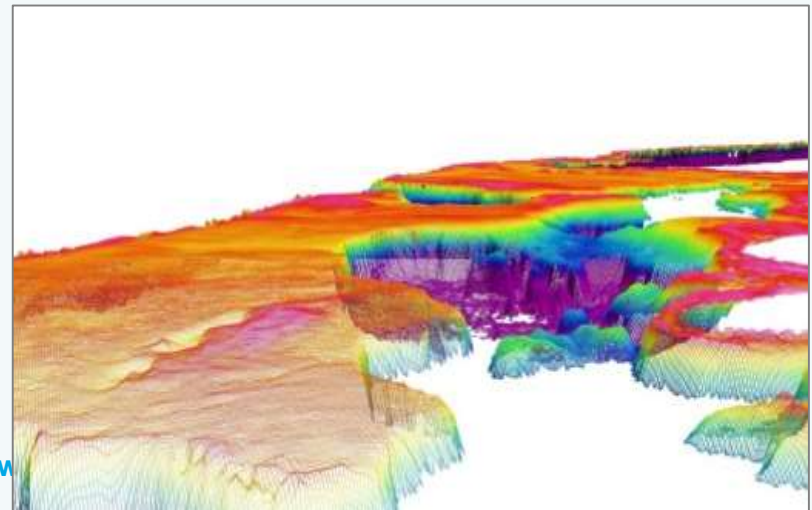
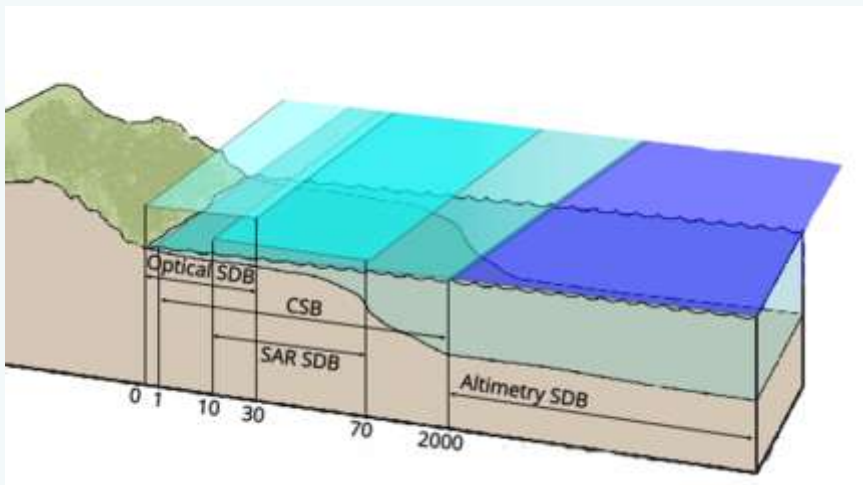
# *Bathymetric DTM – 3D-Viewer*



DTM near Sicily loaded in 3D-viewer

# EMODnet HRSM

- Expanding consortium
- Expanding North to polar area, including the Barents Sea and synergy with IBCAO
- Expanding DTM including coastal areas
- Increasing overall resolution to 1/16 arc minute and inserts of higher resolution where possible and provided
- Including alternative data sources (Satellite Derived Bathymetry)





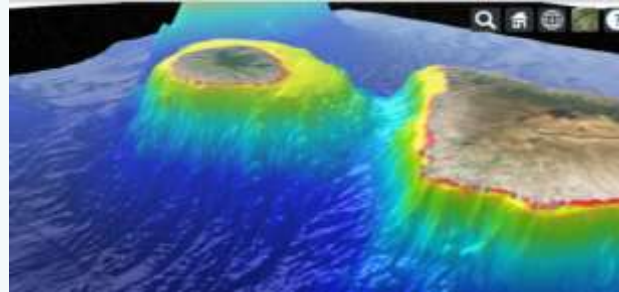
# EMODnet HRSM

## Innovation:

- Upgrading of the portal and adding extra functionalities to the viewing portal such as more delivery options, 3D viewing in the browser,



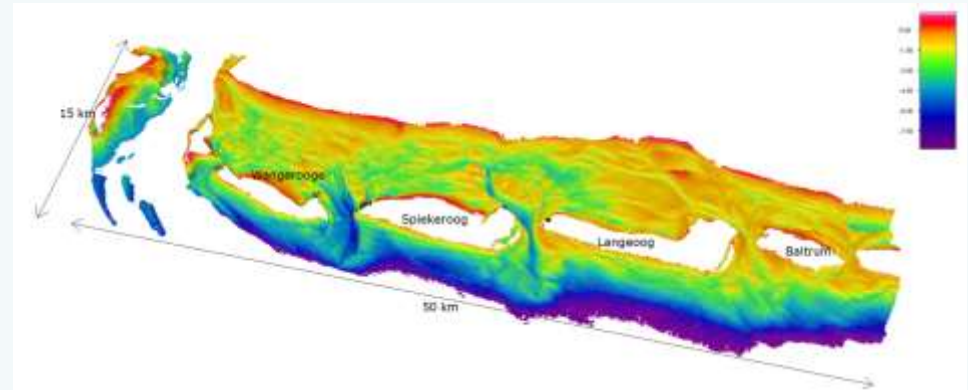
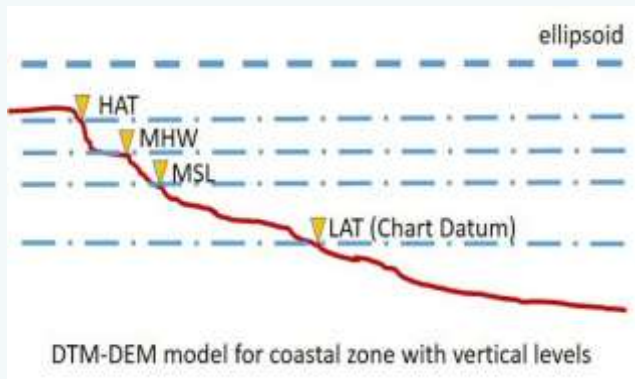
versioning of DTMs with DOIs



- Latest DTM uses > 7.700 survey data sets and composite DTMs from 31 data providers from 18 countries and GEBCO\_2015
  - Latest DTM contains 1.092.115.678 data points (28.799 rows x 37.922 columns)
- ⇒ Big data issues => developing cloud process and VRE around GLOBE for higher performance of computations and improved quality by more interaction between regions and extra viewing and qc services

# EMODnet HRSM

- Determining best European coastline, also using European tidal model for vertical referencing



- International cooperation with GEBCO, IBCAO, IHO, NOAA and others





The screenshot shows the homepage of the EMODnet Bathymetry website. The header features the EMODnet logo with the text 'European Marine Observation and Data Network' and a navigation menu with links: Home, Approach, Metadata & Data, Data products, News, Promotion, Partners, and Helpdesk. A search bar is also present. The main banner image shows a yellow autonomous underwater vehicle (AUV) on the ocean surface, with the text 'Bathymetry' in large orange letters and 'providing services for discovery and requesting access to bathymetric data' below it. Below the banner are three service tiles: 'SURVEY DATA SETS' with a magnifying glass icon, 'EMODnet DTM' with a bathymetric map icon, and 'COMPOSITE DTM' with a globe icon. Each tile includes a 'READ MORE' button.

**EMODnet**  
European Marine Observation and Data Network

Free search 

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## Bathymetry

providing services for discovery and requesting access to bathymetric data

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### SURVEY DATA SETS

CDI Data Discovery and Access service

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### EMODnet DTM

Bathymetry Viewing and Download service

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### COMPOSITE DTM

Sextant Catalogue service

[READ MORE](#)