



EMODNET Preparatory Actions Hydrographic and Seabed Mapping

**Service Contracts MARE/2008/03 S12.531515 and
MARE/2009/07 S12.563144**

**By
Dick M.A. Schaap – Coordinator**



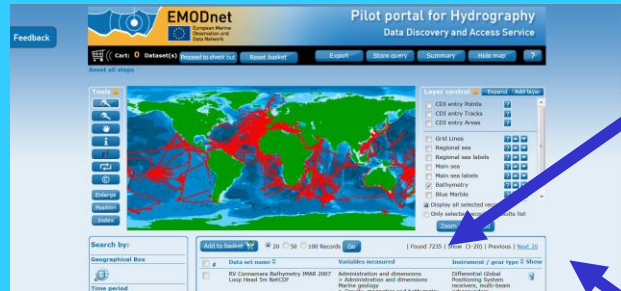
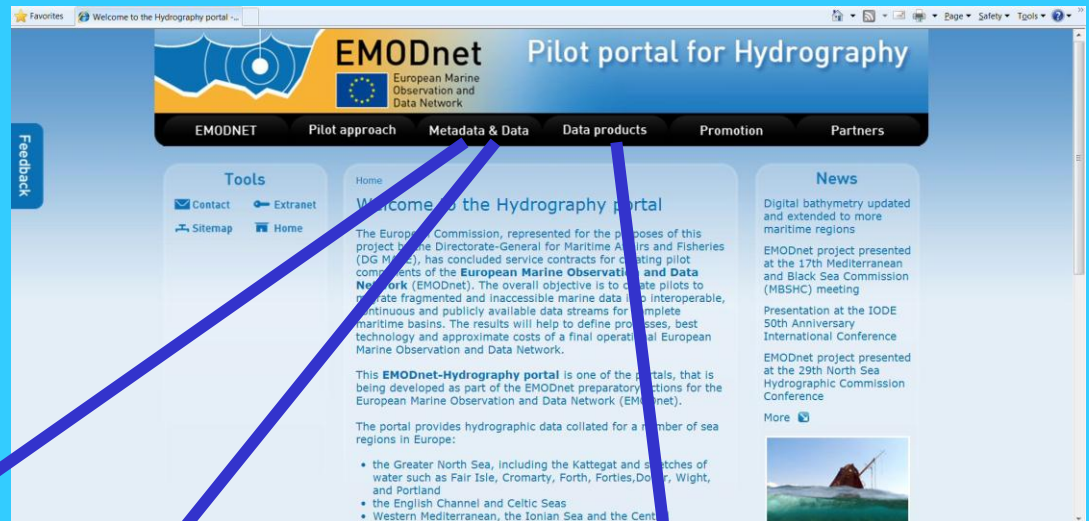
Hydrographic and Seabed Mapping – partnership

- Members of the **SeaDataNet** consortium together with other organisations from marine science, the hydrographic survey community, and industry:
 - **MARIS – NL** (Management, DM and IT expertise)
 - **IFREMER – FR** (Research institute)
 - **GGSGC – NL** (IT expertise, DM hydrography)
 - **IEO – ES** (Research institute)
 - **NERC-NOC – UK** (Research institute)
 - **GSI – IE** (HO – Ireland)
 - **SHOM – FR** (HO – France)
 - **UNEP-GRID Arendal – NO** (International Organisation)
 - **OGS – Oceanography department (IT)** (Research Institute)
 - **HCMR (GR)** (Research Institute)
- Plus Data provider agreements with **HO's from Germany, Norway, Denmark, Netherlands and Belgium**
- Plus Associate partners: **ISMAR-CNR –IT, OGS-RIMA – IT, LNEG – PT, UTM-CSIC – ES, NIOZ - NL** (Research Institutes) + **IHPT – PT** (HO) + **OceanWise (UK)** + **Israeli Government, Ministry of National Infrastructures (Israel)**

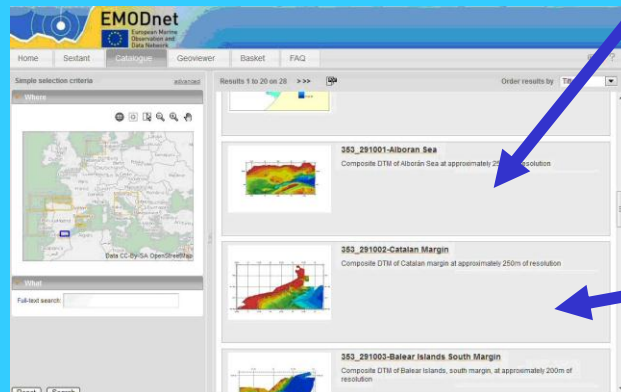
EMODNet Hydrography and Seabed Mapping

- It aims at compiling an inventory of available bathymetric surveys (plummets, single and multibeam surveys), adopting the SeaDataNet Common Data Index (CDI) infrastructure.
- Also survey data are gathered and processed as input for producing a higher resolution digital bathymetry of 0,25 minute by 0,25 minute for the following sea regions in Europe:
 - the Greater North Sea, including the Kattegat and stretches of water such as Fair Isle, Cromarty, Forth, Forties, Dover, Wight, and Portland
 - the English Channel and Celtic Seas
 - Western Mediterranean, the Ionian Sea and the Central Mediterranean Sea
 - Iberian Coast and Bay of Biscay (Atlantic Ocean)
 - Adriatic Sea (Mediterranean)
 - Aegean - Levantine Sea (Mediterranean).

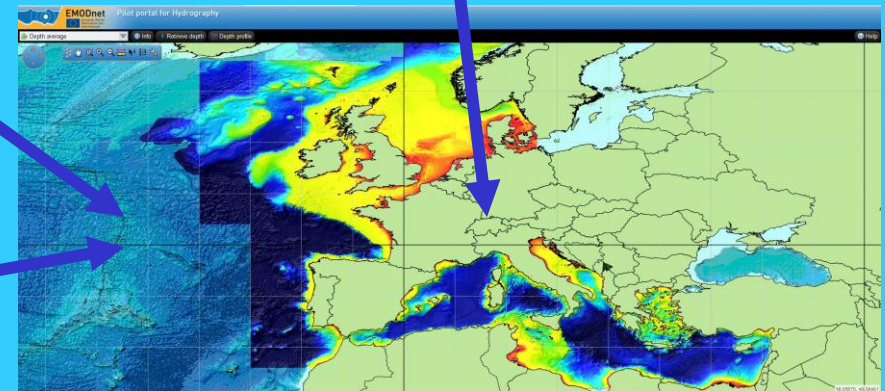
Hydrographic portal



CDI metadata service



Sextant metadata service




Data products service

Progress


- Up till today, 8400 survey CDI metadata records from 14 data centres and 114 data originators have been collated and imported into a dedicated EMODnet Hydrography CDI data discovery and access service. This service was launched in May 2010 and has been upgraded over time with extra functionality
- These survey data and other gathered composite DTMs have been collated into regional EMODNet DTM's that are available for viewing and downloading in several formats via the Hydrography Products portal service.
- The dedicated EMODnet Hydrography products portal has been launched in May 2010. It sits atop of the central DTM database and interacts with the CDI service and with OGC WMS services
- Later also the Sextant Data Products service has been added to give metadata about the composite DTMs that have been used next to survey data sets.

CDI Data Discovery and Access Service










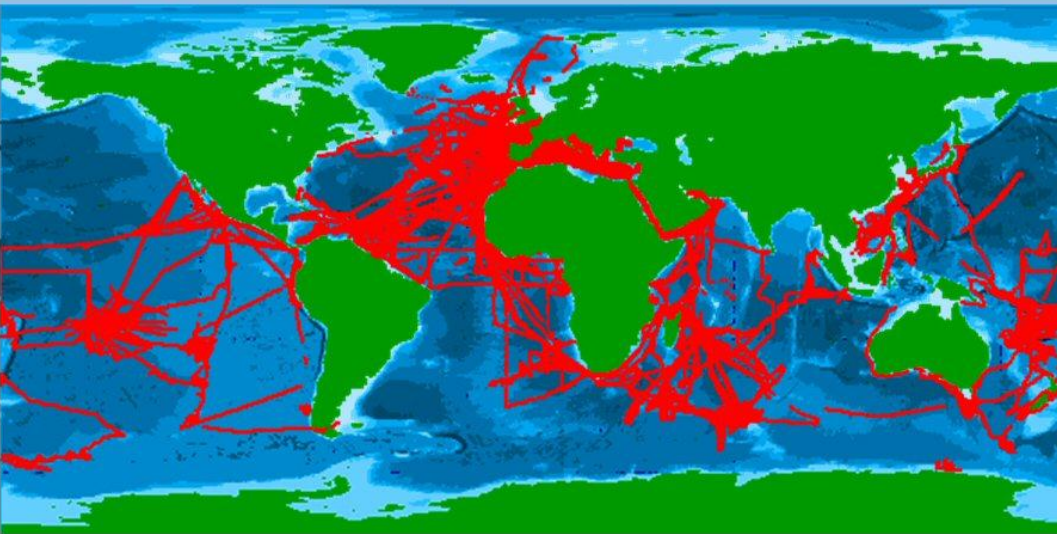
EMODnet
European Marine
Observation and
Data Network

Pilot portal for Hydrography
Data Discovery and Access Service

 Cart: **0** Dataset(s) [Proceed to check out](#) [Reset basket](#) [Export](#) [Store query](#) [Summary](#) [Hide map](#) [?](#)

[Reset all steps](#)

Tools ?







[Enlarge](#)
[Position](#)
[Index](#)



Layer control ? [Expand](#) [Add layer](#)


☐ CDI entry Points ?
☐ CDI entry Tracks ?
☐ CDI entry Areas ?

☐ Grid Lines ?
☐ Regional sea ?
☐ Regional sea labels ?
☐ Main sea ?
☐ Main sea labels ?
☒ Bathymetry ?
☐ Blue Marble ?


☒ Display all selected records
☐ Only selected records in results list

[Zoom to selected](#)


Search by:

Geographical Box


Time period

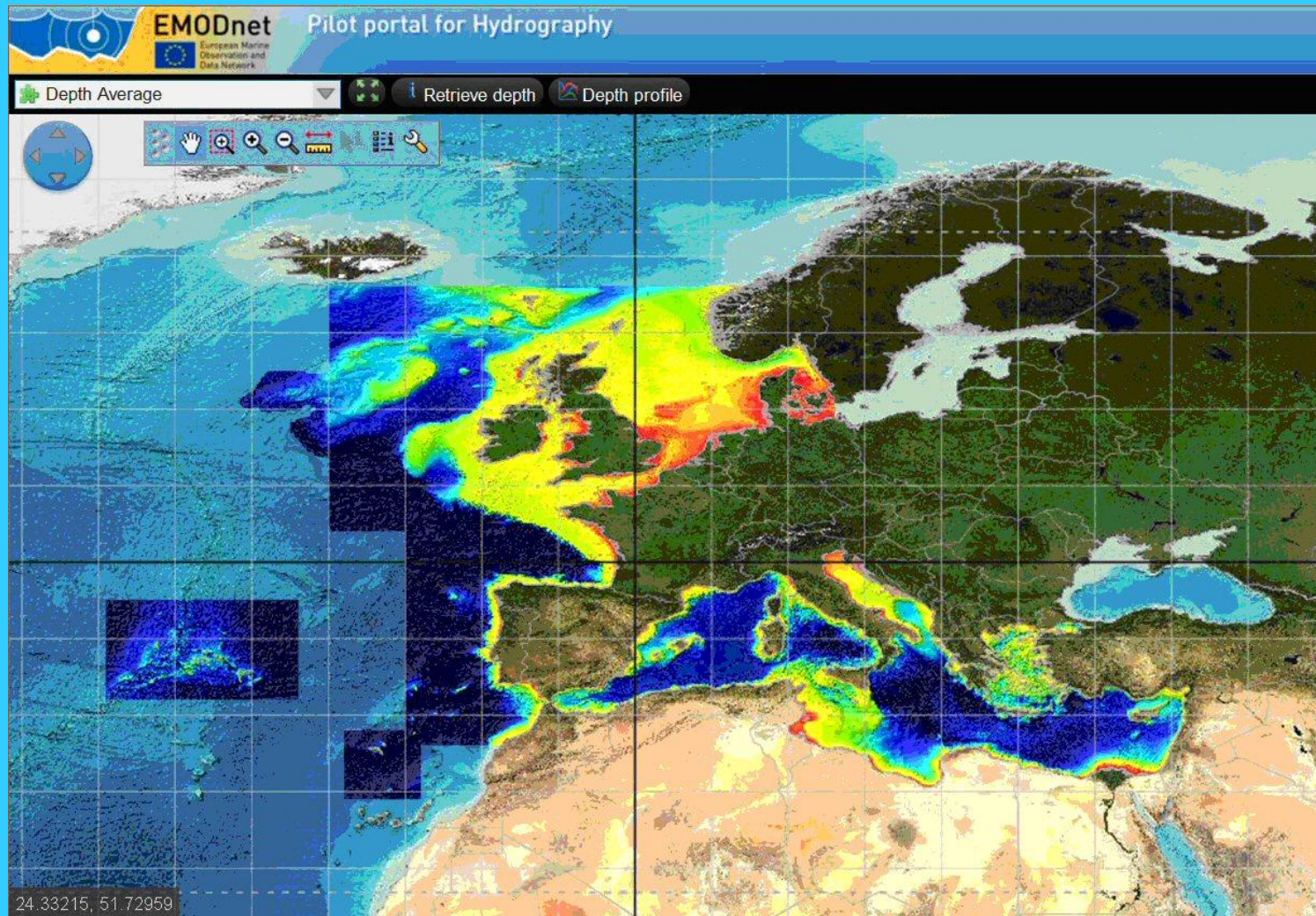
Add to basket  ☒ 20 ☐ 50 ☐ 100 Records [Go](#)

| Found 7235 | Show (1-20) | Previous | [Next 20](#)

<input type="checkbox"/> #	Data set name	Variables measured	Instrument / gear type Show
<input type="checkbox"/>	RV Connamara Bathymetry IMAR 2007 Loop Head 5m NetCDF	Administration and dimensions > Administration and dimensions Marine geology > Gravity, magnetics and bathymetry	Differential Global Positioning System receivers, multi-beam echosounders 

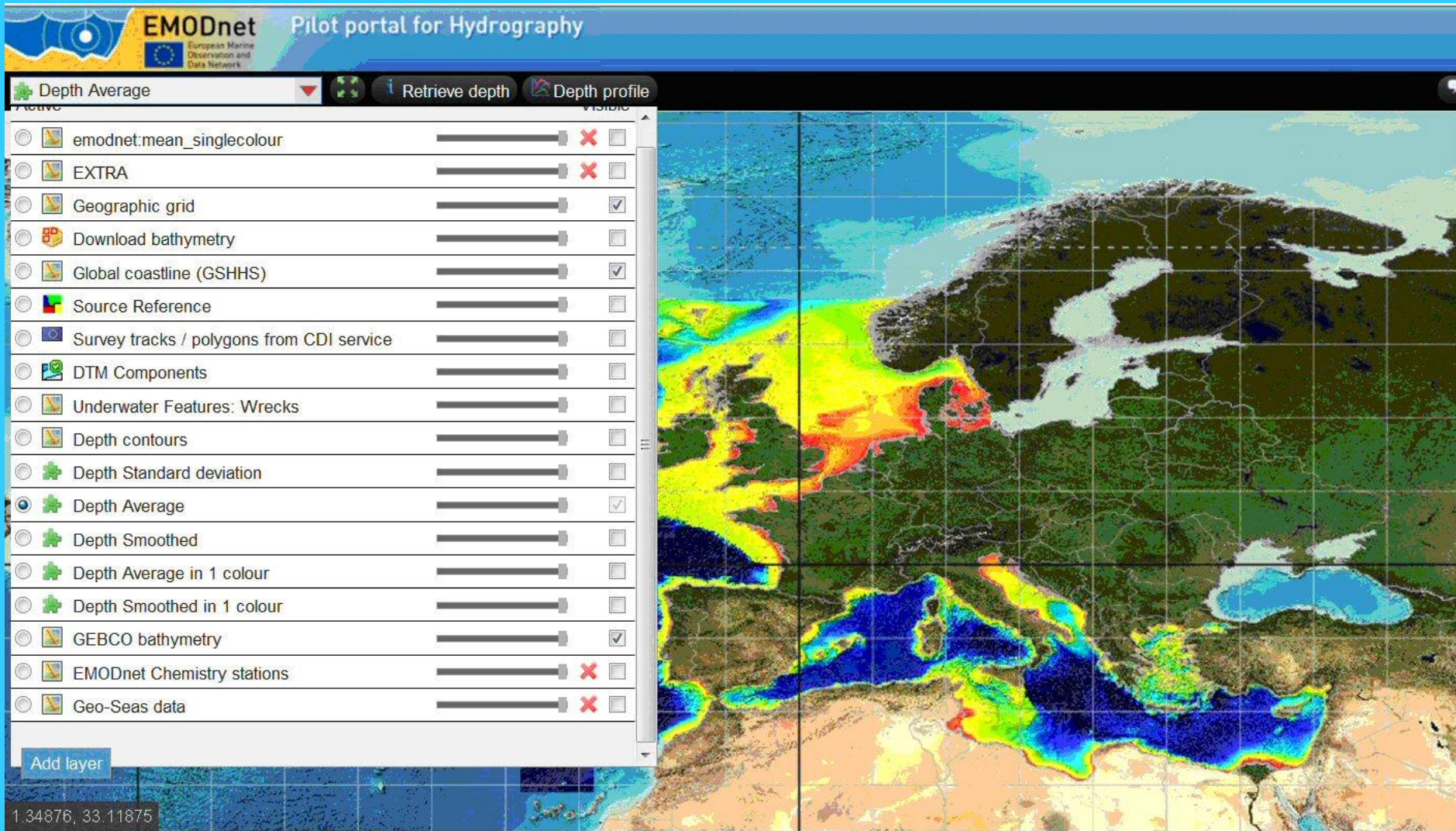
Discovering and requesting access to bathymetric survey data sets (single and multibeam

Hydrographic Data Products viewing service



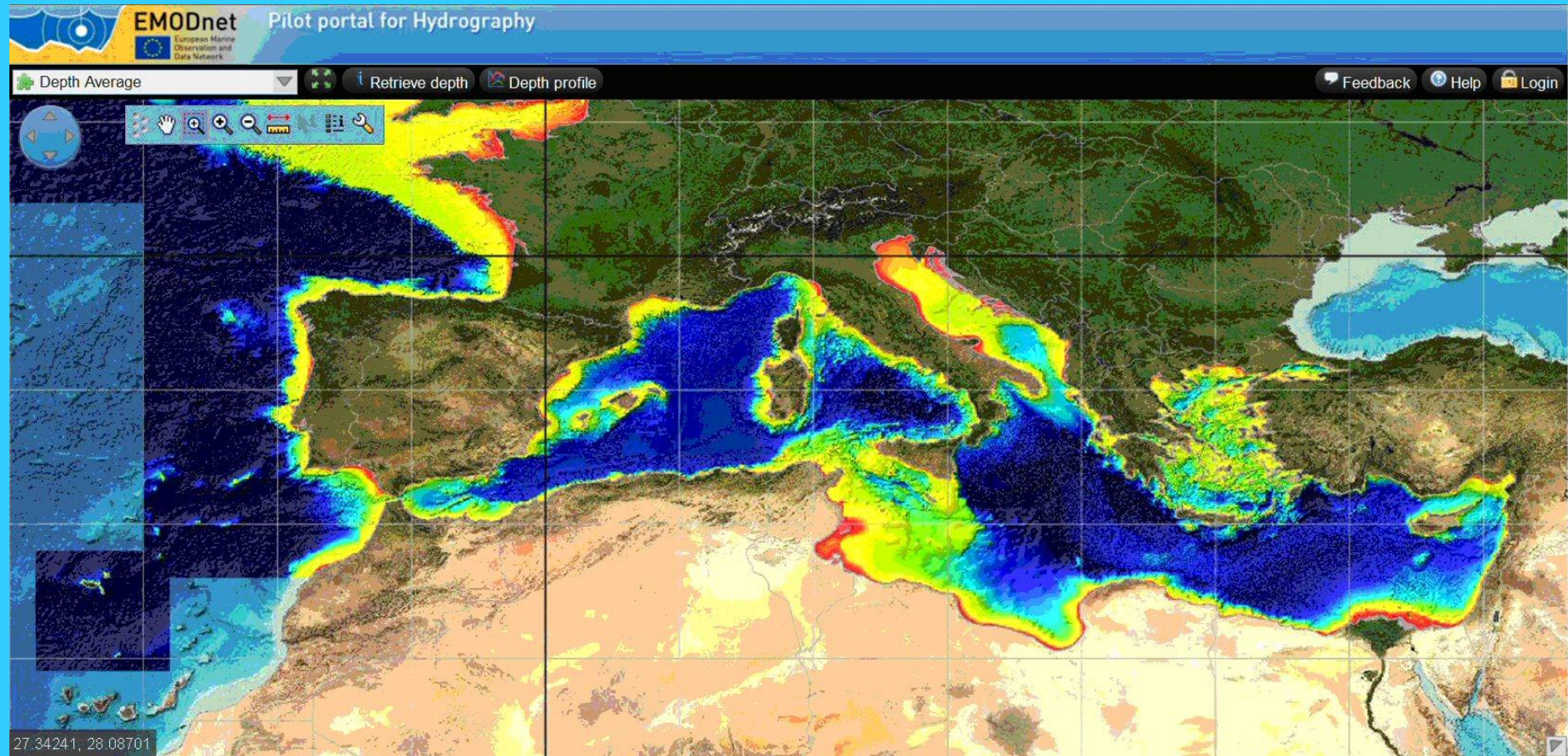
New DTM for European sea basins

Hydrographic Data Products viewing service



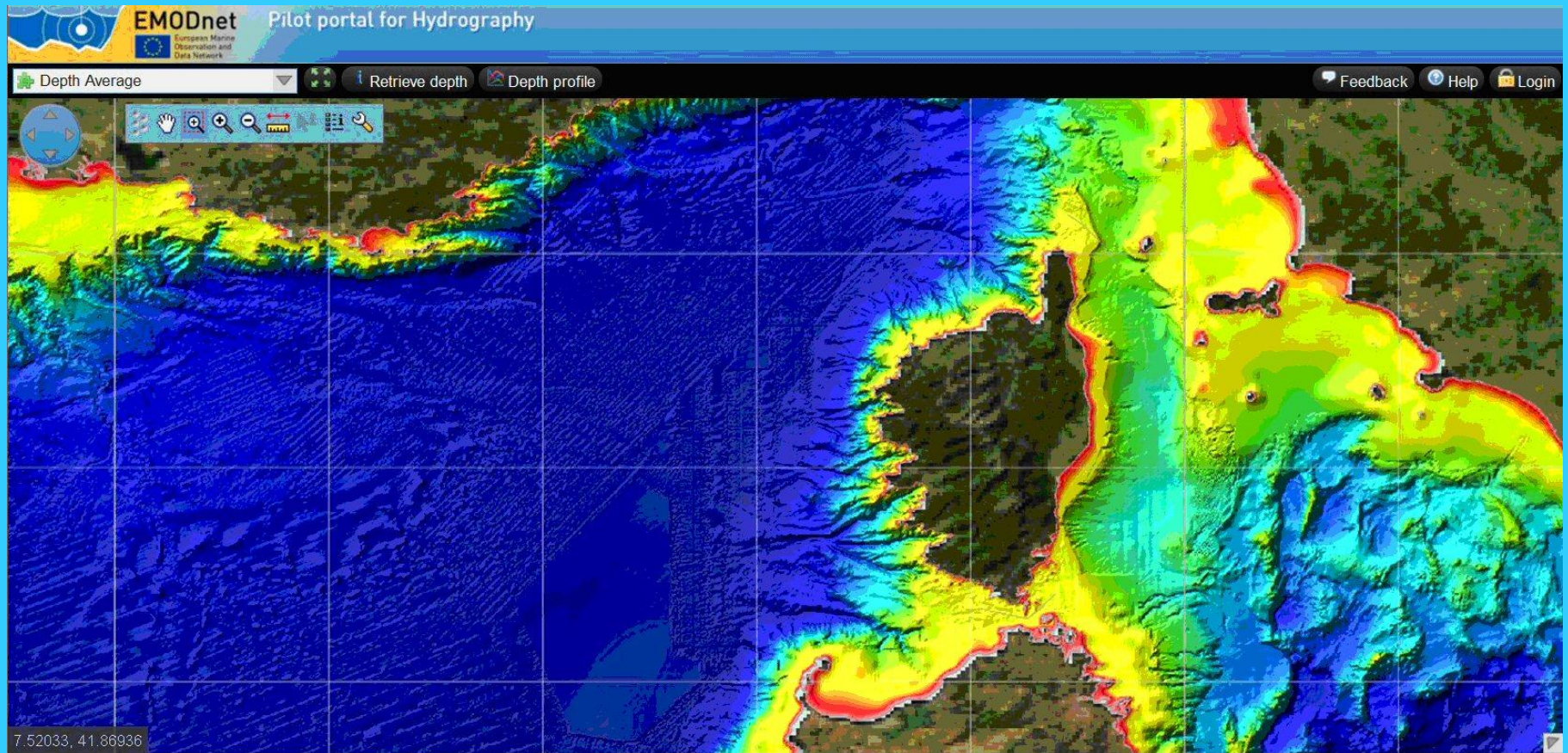
New DTM for European sea basins with layer menu

Hydrographic Data Products viewing service



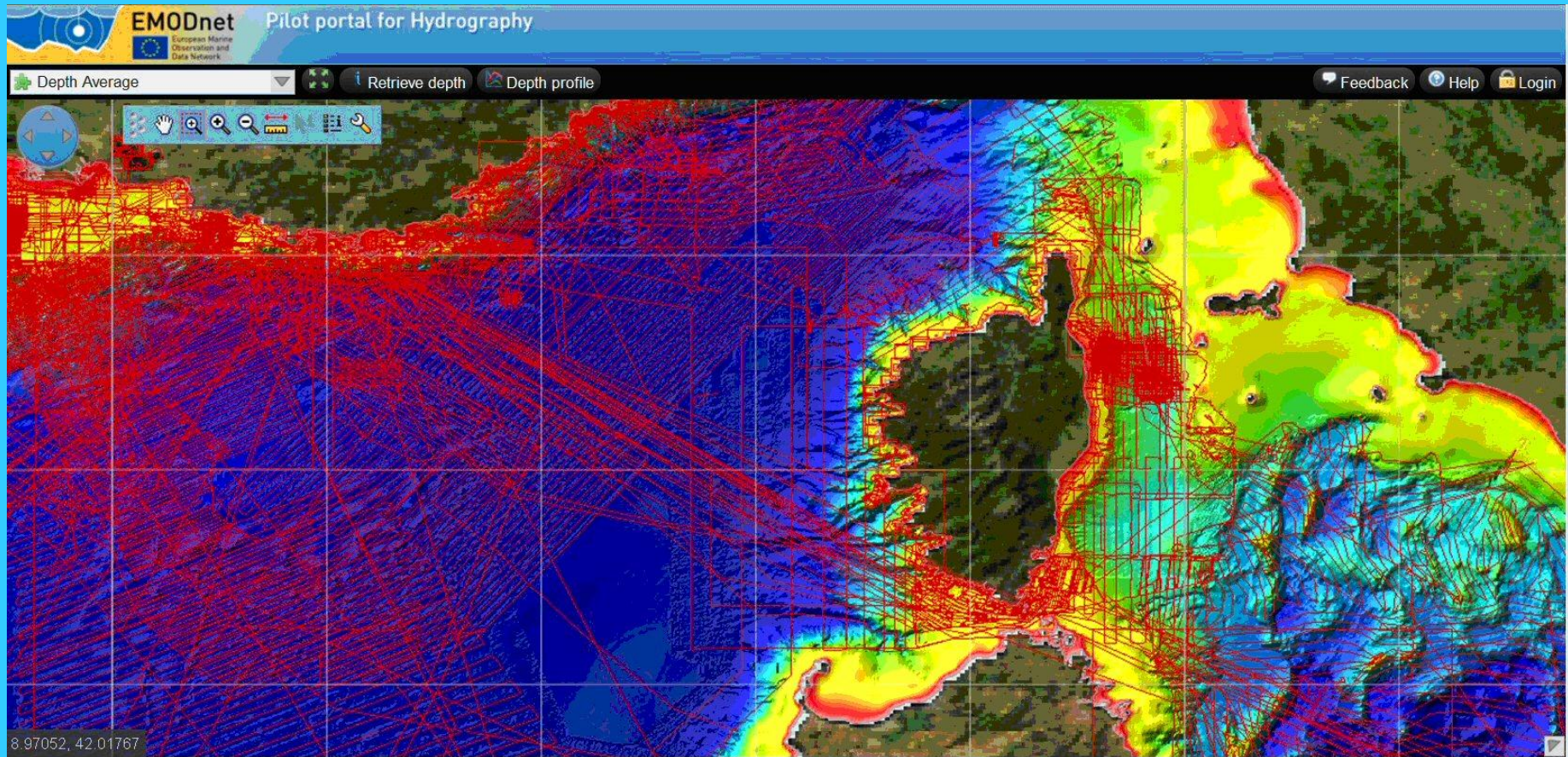
New DTM for European sea basins

Hydrographic Data Products viewing service



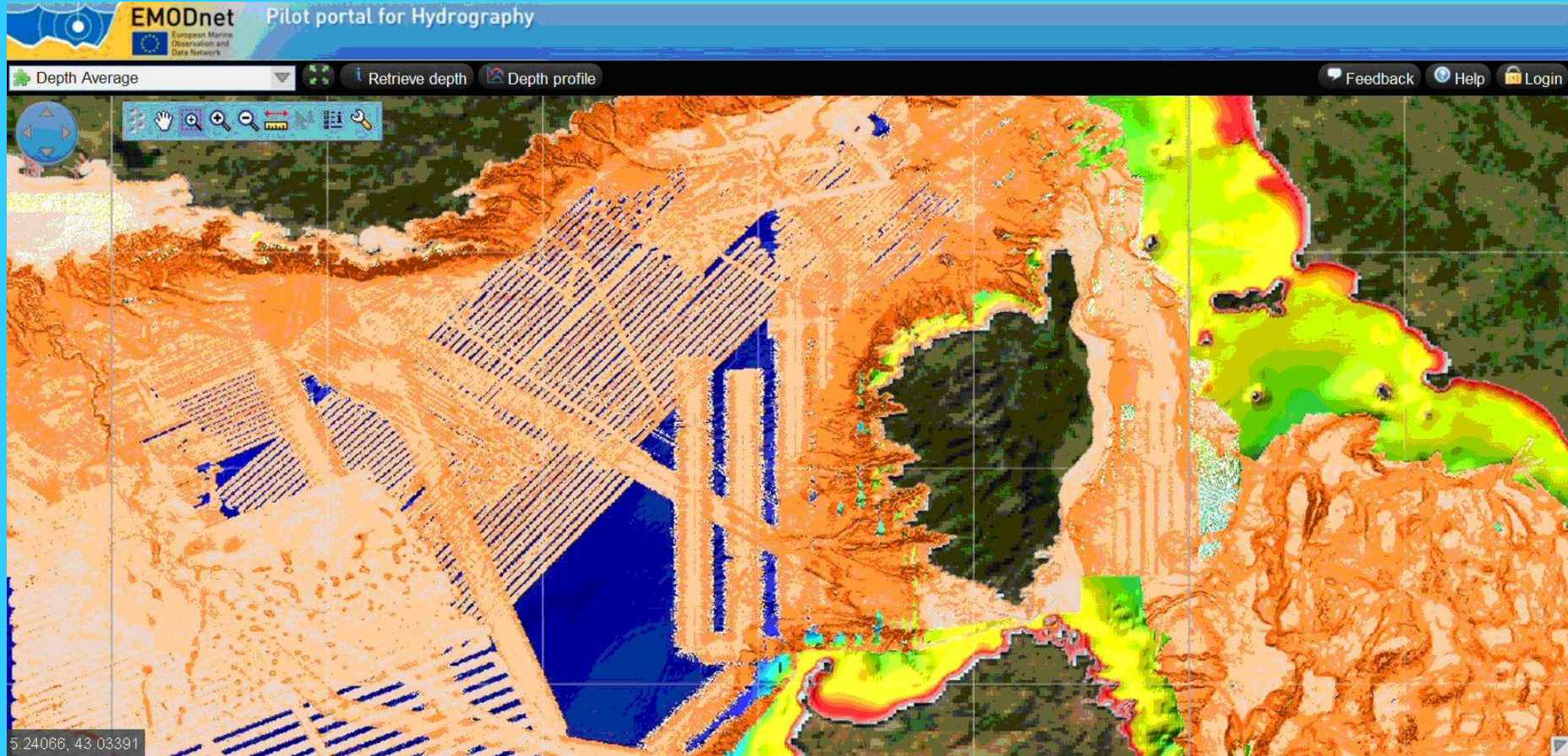
New DTM for European sea basins

Hydrographic Data Products viewing service



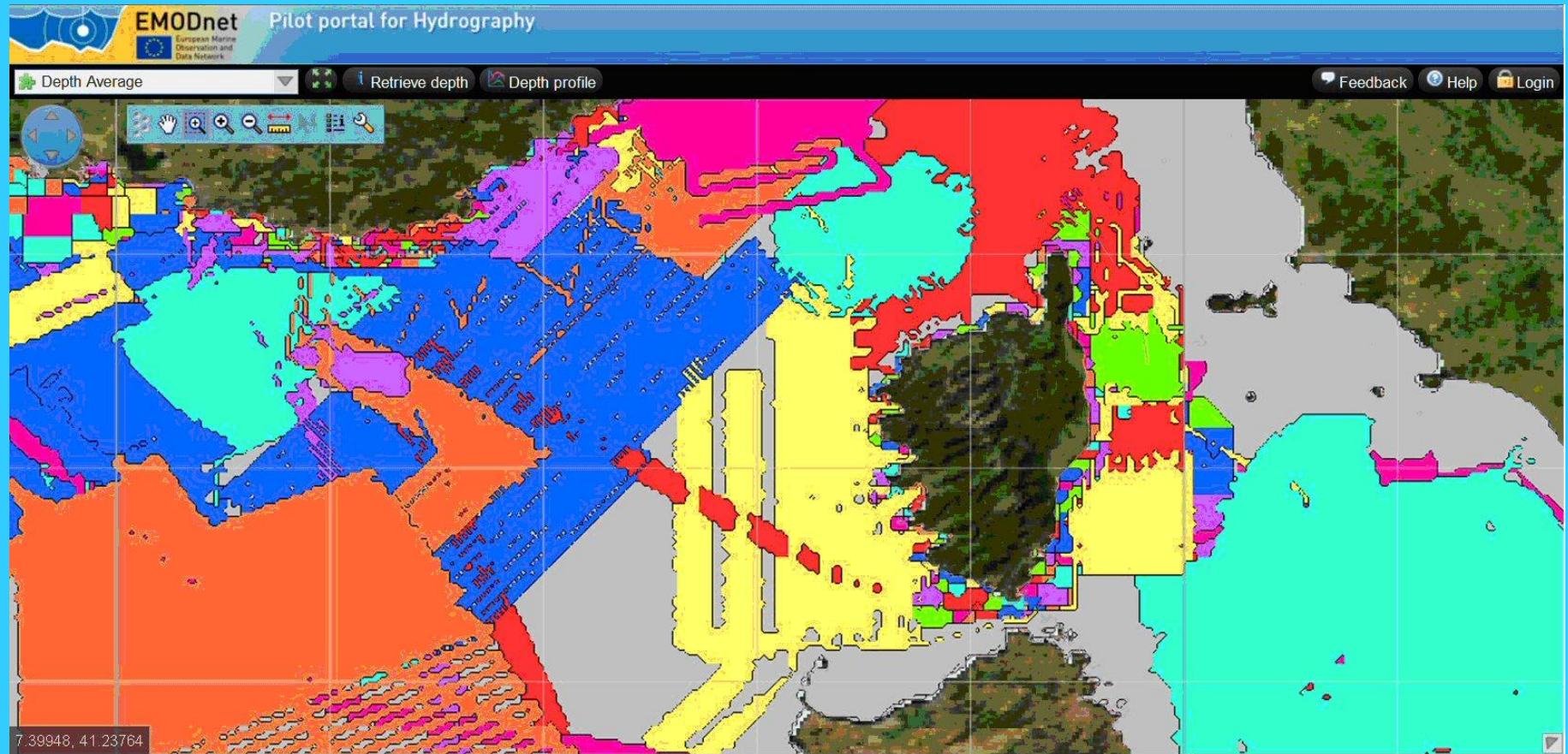
New DTM for European sea basins with CDI overlay to indicate surveys

Hydrographic Data Products viewing service



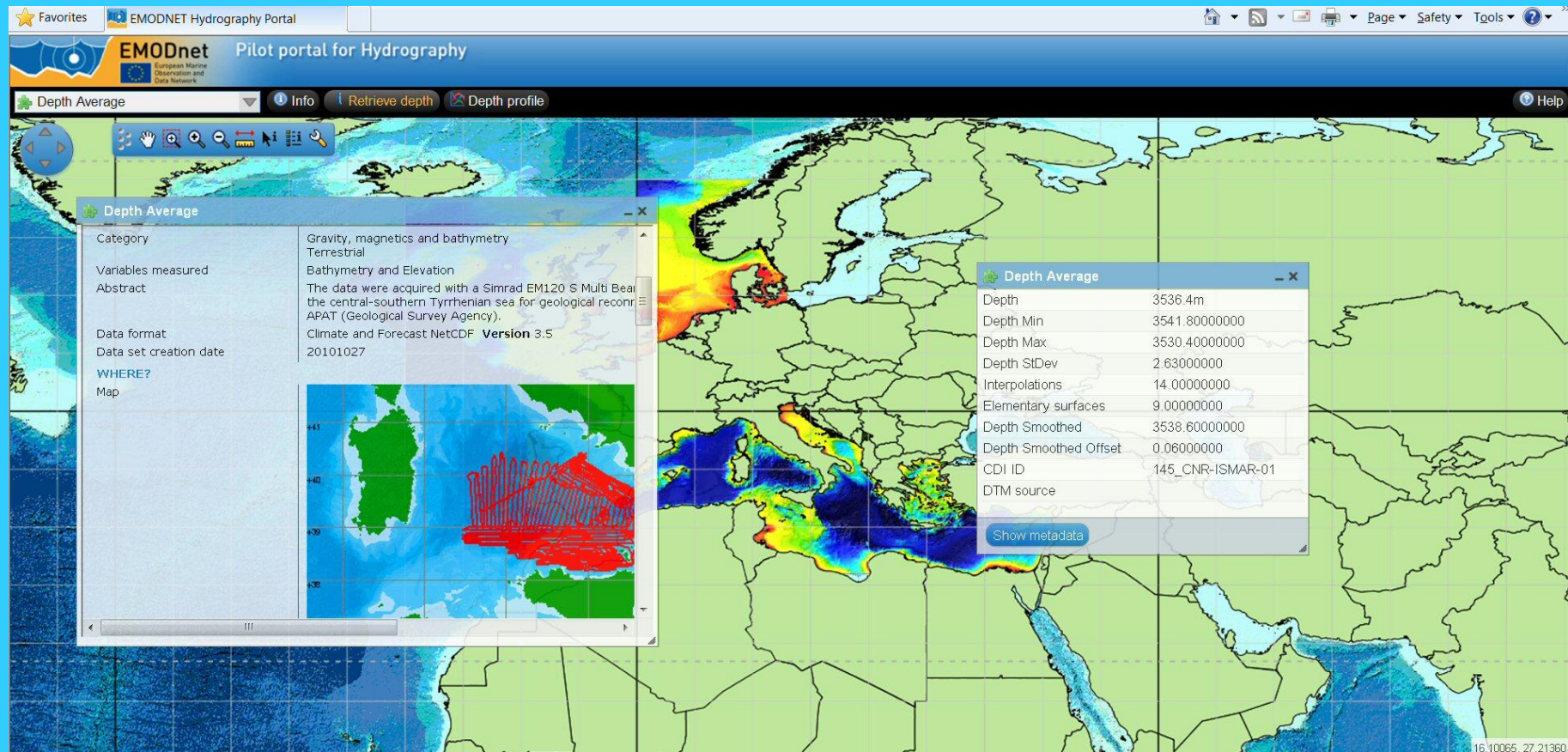
New DTM for European sea basins with waterdepth standard deviation layer

Hydrographic Data Products viewing service



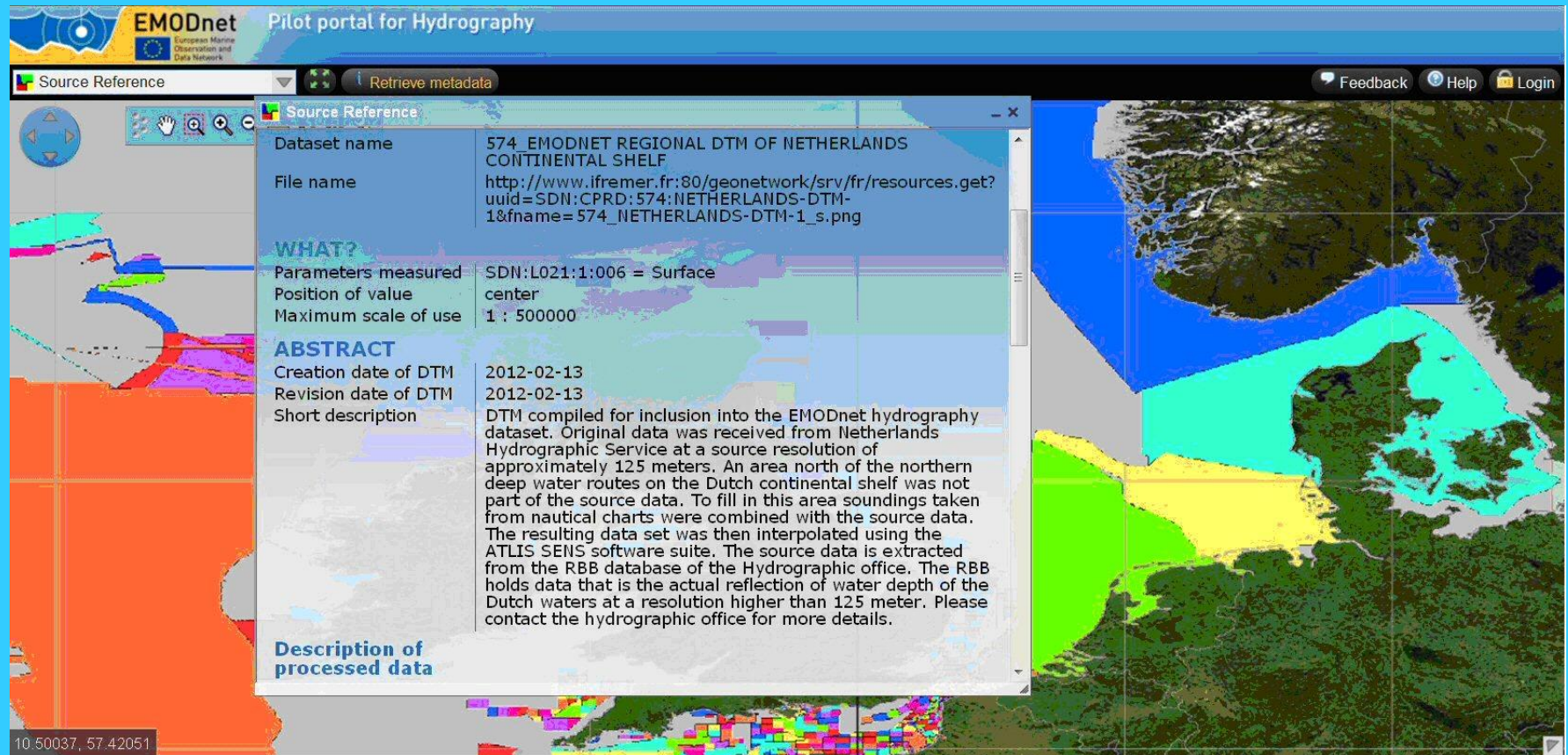
New DTM for European sea basins with sources layer (surveys and composite DTMs)

Hydrographic Data Products viewing service



Retrieving parameters of an individual grid cell and retrieving CDI metadata of associated prevailing survey

Hydrographic Data Products viewing service



The screenshot displays the EMODnet Pilot portal for Hydrography. A 'Source Reference' window is open, showing metadata for a dataset. The window includes a map on the left and a detailed metadata panel on the right. The metadata panel is divided into sections: 'WHAT?', 'ABSTRACT', and 'Description of processed data'. The 'WHAT?' section lists parameters measured, position of value, and maximum scale of use. The 'ABSTRACT' section provides a detailed description of the dataset, including its creation and revision dates, and a short description of the data processing. The 'Description of processed data' section is also visible. The background map shows a coastal area with various colored regions representing different data layers.

EMODnet Pilot portal for Hydrography

Source Reference

Retrieve metadata

Feedback Help Login

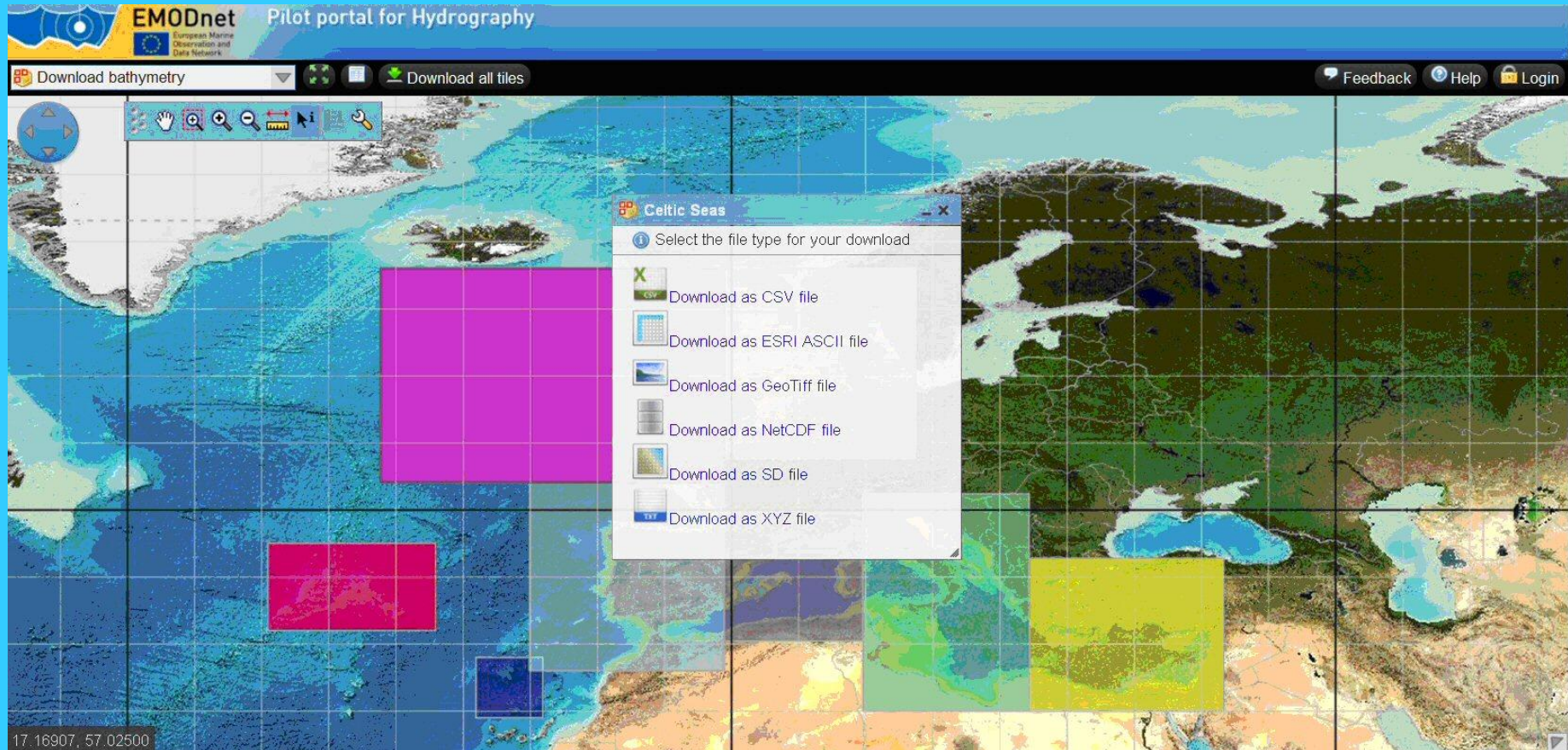
Source Reference

Dataset name	574_EMODNET REGIONAL DTM OF NETHERLANDS CONTINENTAL SHELF
File name	http://www.ifremer.fr:80/geonetwork/srv/fr/resources.get?uuid=SDN:CPRD:574:NETHERLANDS-DTM-1&fname=574_NETHERLANDS-DTM-1_s.png
WHAT?	
Parameters measured	SDN:L021:1:006 = Surface center
Position of value	
Maximum scale of use	1 : 500000
ABSTRACT	
Creation date of DTM	2012-02-13
Revision date of DTM	2012-02-13
Short description	DTM compiled for inclusion into the EMODnet hydrography dataset. Original data was received from Netherlands Hydrographic Service at a source resolution of approximately 125 meters. An area north of the northern deep water routes on the Dutch continental shelf was not part of the source data. To fill in this area soundings taken from nautical charts were combined with the source data. The resulting data set was then interpolated using the ATLIS SENS software suite. The source data is extracted from the RBB database of the Hydrographic office. The RBB holds data that is the actual reflection of water depth of the Dutch waters at a resolution higher than 125 meter. Please contact the hydrographic office for more details.
Description of processed data	

10.50037, 57.42051

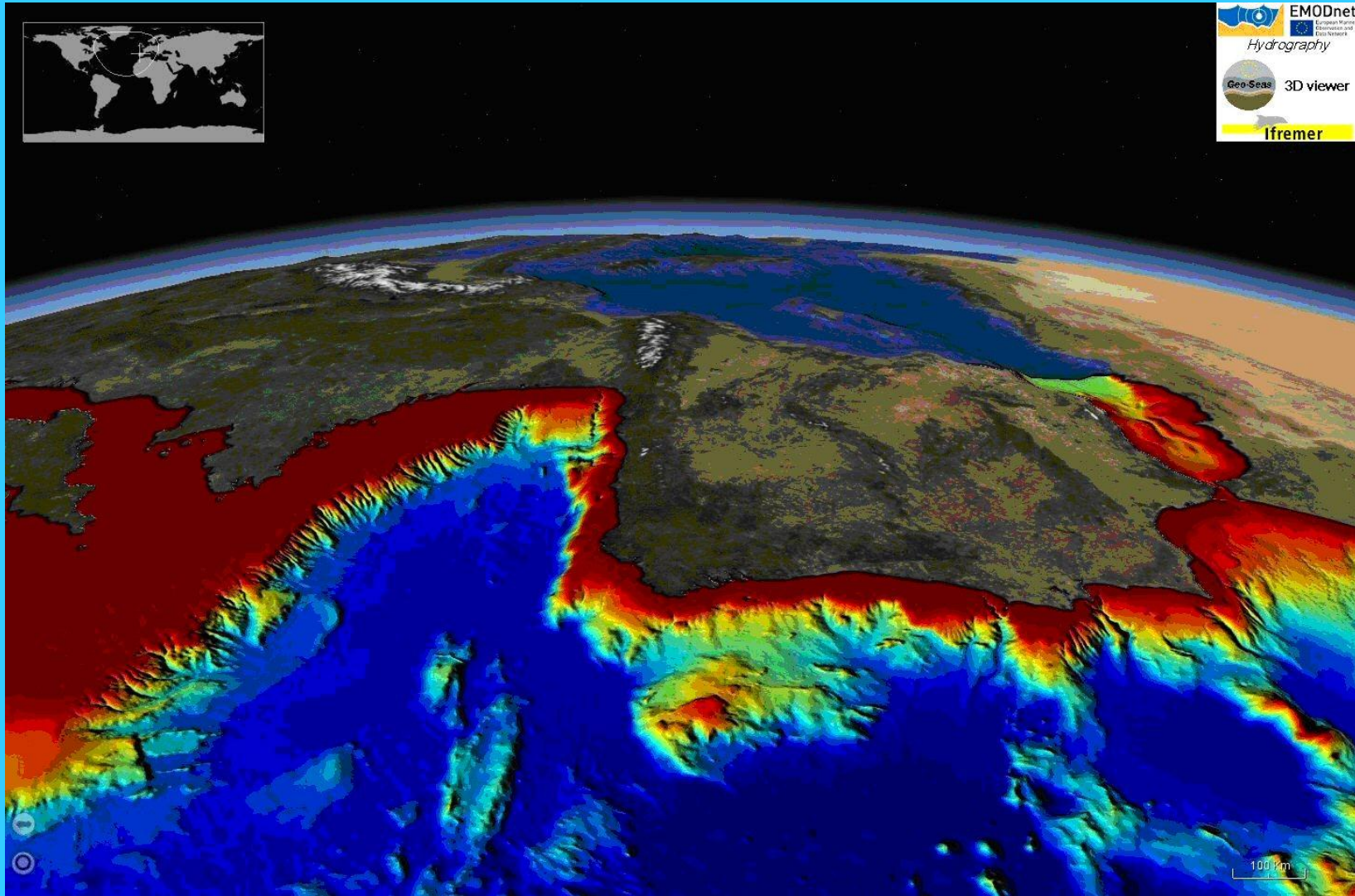
Retrieving Sextant metadata of associated composite DTM

Hydrographic Data Products viewing service



Downloading DTM tiles in a range of formats

Hydrographic DTM – 3D-Viewer



DTM loaded into 3D-Viewer as developed in Geo-Seas

Successful approach

- Providers of bathymetric data sets understand and are welcoming the applied approach:
- Data sets are gathered for internal use by regional consortium groups to compile the DTM product which can be downloaded without any registration
- Data sets are described and included in the CDI Data Discovery and Access Service and composite DTMs in the Sextant Data Products Service.
- Each cell in the DTM product gives information about the data sets used and leads to the CDI / Sextant service for more information about the data provider and options for requesting the data itself
- This works as a shop window and results in more data providers coming forward

EMODNet Bathymetry – new tender

- Increasing the resolution of the DTM from $\frac{1}{4}$ to $\frac{1}{8}$ of a minute of lat – lon (ca 225 m* 225 m)
- Covering missing sea basins:
 - Black Sea
 - Baltic Sea
 - Norwegian + Icelandic Sea
- Including new data sets from existing partners
- Consortium expanded with new partners and associate partners, including GEBCO
- Expected start, if successful, early 2013



www.emodnet-hydrography.eu