



SeaDataNet

The contribution of the SeaDataNet
infrastructure in the extreme weather
events study

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EGU Conference, Vienna, Austria, 8-13^o April 2018

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SeaDataNet is a comprehensive Pan-European semi-distributed marine data infrastructure, providing access to multidisciplinary, integrated marine and ocean data and products of standardised quality, services, as well as an overview of marine organisations, research and monitoring activities related to the sea.

Physical oceanography

Chemistry

Geophysics

Marine Geology

Biology

Bathymetry

Meteorology



Selection of data along tracks

sdn-userdesk@seadatanet.org – www.seadatanet.org



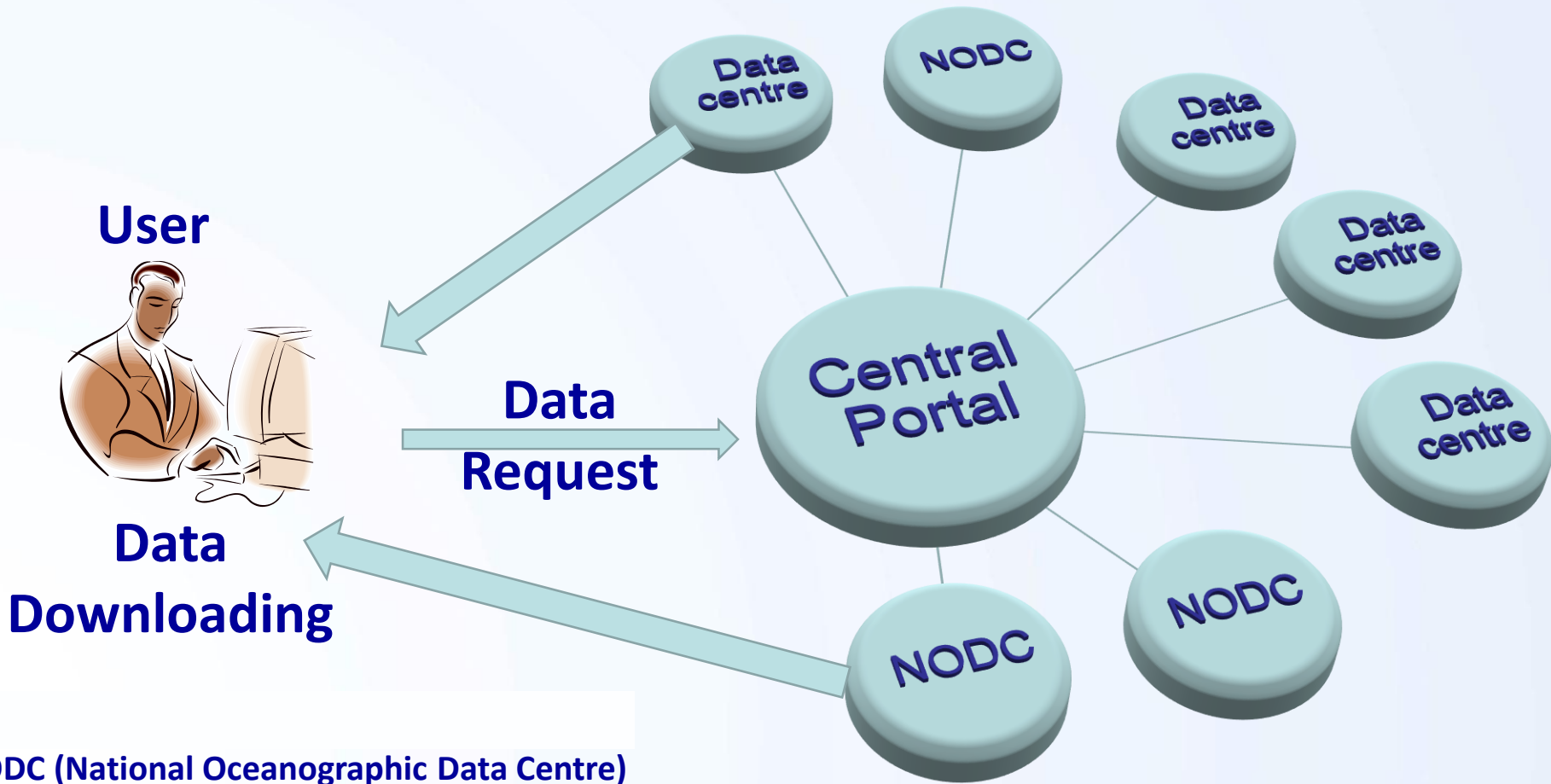
- **Origins**
- **Architecture**
- **Data services (visualisation, quality check)**
- **Metadata services**
- **Data products**
- **Vocabulary services**
- **Software tools**
- **Main on going activity**
- **Challenges for extreme weather events**
- **How SeaDataNet supports extreme weather events study**
- **The highlights**
- **SeaDataNet standards and tools in other EU projects**
- **IMDIS conference**



SeaDataNet started in 1990s and has been developing over the years thanks to EU funded projects:

90	Metadata directories Medar/MedAtlas
2002-2005	Sea-Search (FP5)
2006-2011	SeaDataNet (FP6)
2011-2015	SeaDataNet II (FP7)
2016-2020	SeaDataCloud (H2020)

→ a single access for a wide range of data of different types





Discovery, visualization, access and download







PAN-EUROPEAN INFRASTRUCTURE FOR
OCEAN & MARINE DATA MANAGEMENT

SEADATANET COMMON DATA INDEX (CDI) V3

TOOLS


  

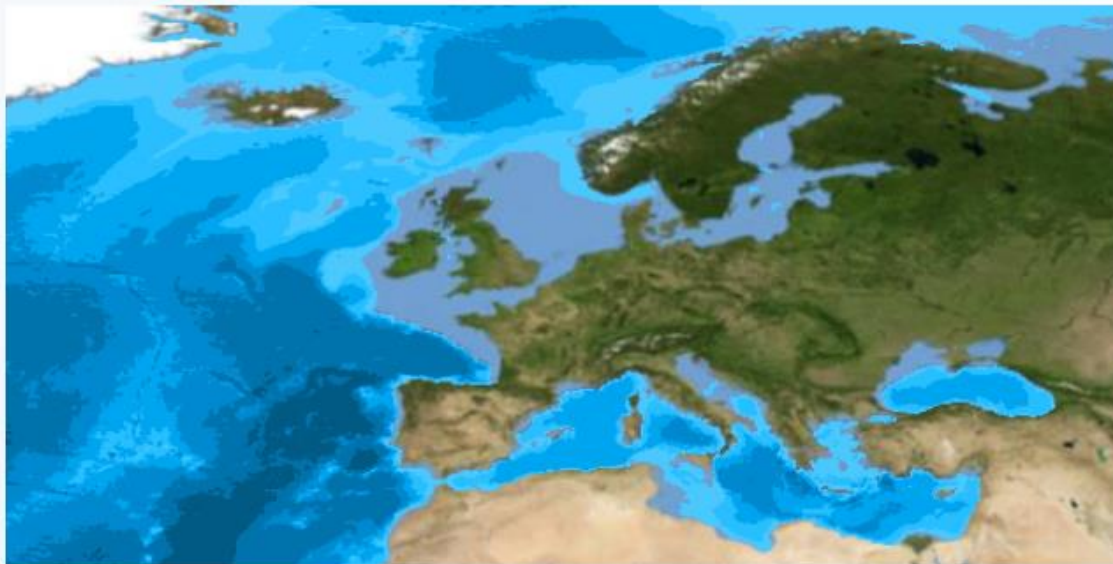
  

ENLARGE **HELP**

POSITION **INDEX**

 Datasets **0**

BASKET **RESET**



LAYER CONTROL

Grid Lines

Regional sea

Regional sea labels

Main sea

Main sea labels

Bathymetry

Blue Marble

World

LAT/LONG

Upper-left Lower-right

SEARCH

Free search

SEARCH **CLEAR** **?**

<http://www.seadatanet.org>

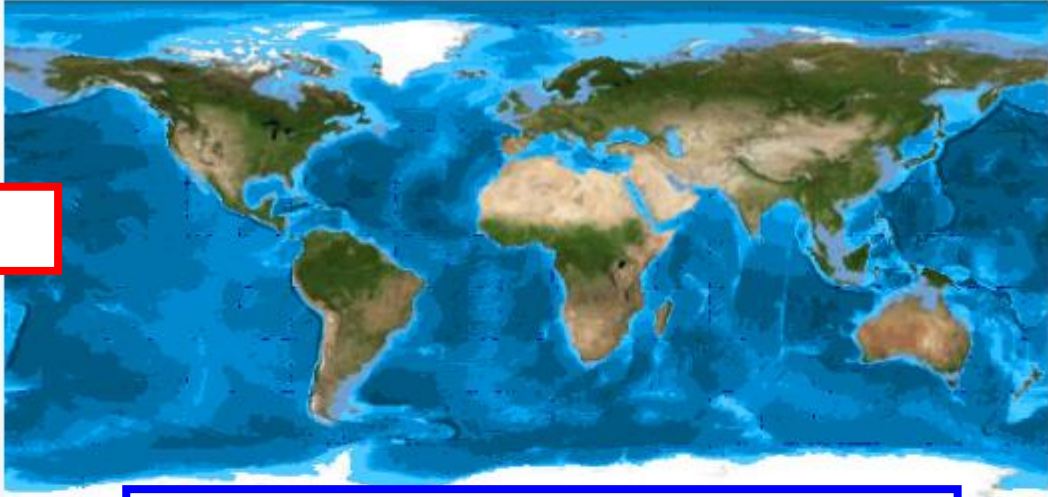
TOOLS



Map tools

POSITION INDEX

Datasets 0
BASKET RESET



Data discovery interface

LAYER CONTROL

- Grid Lines
- Regional sea
- Regional sea labels
- Main sea
- Main sea labels
- Bathymetry
- Blue Marble
- World

LAT/LONG

Upper-left Lower-right

SEARCH

Free search

Disciplines - Topics

Discipline

Cruise

Parameter

Country

Instrument

Platform

.....

Discovery parameters

- Acoustic noise in the water column
- Air pressure
- Air temperature



SDN provides useful information to know which organisations operate in marine environment, what they do and where → chances for future collaborations in research or in the private sector





EGU Conference, Vienna, Austria, 8-13 April 2018

Metadata Services

EDMO Organisations

SeaDataNet PAN-EUROPEAN INFRASTRUCTURE FOR OCEAN & MARINE DATA MANAGEMENT

European Directory of Marine Organisations (EDMO)

Organisation details

DETAILS

Name: IFREMER - CENTRE DE BREST/CHER
 Address: Avenue de l'Europe 10, Brest
 Zipcode: 29200
 City: BREST
 Country: France
 Phone: +33 (0)2 98 22 45 48
 Fax: +33 (0)2 98 22 45 45
 Color Website: <http://www.ifremer.fr/edmo/>

ORGANISATION PROFILE

The Center IFREMER is first the usual recipient of the data IFREMER. It gathers approximately 100 projects across all the topics of oceanography:

- Marine resources (aquaculture and fisheries)
- Marine research (oceanography, physical oceanography, space)
- Coastal environment (the center administrative resources, water & marine engineering technology)
- Global environment (the center administrative resources, water & marine engineering technology)
- Scientific research (the center administrative resources, water & marine engineering technology)

RESULTS BY OTHER SERVICES

LIVING METADATA

1,100 metadata

IFREMER / CDI / SUMER Scientific Information System for the Sea (SIS) of the INM (1.1.2017 / 02/08/17)

COMPLIANT

ISO INSPIRE

SET OF RESULTS

Platform Name	Cruise Name	From	To
ALBA	ALBA_001	07.08.2015	28.08.2015
ALBA	ALBA_002	13.10.2015	08.11.2015
ALBA	ALBA_003	20.09.2015	16.10.2015
ALBA	ALBA_004	01.08.2015	09.07.2015
ALBA	ALBA_005	08.05.2015	29.05.2015
ALBA	ALBA_006	24.04.2015	30.05.2015
ALBA	ALBA_007	15.03.2015	17.04.2015
ALBA	ALBA_008	04.03.2015	16.03.2015
ALBA	ALBA_009	21.02.2015	16.03.2015
ALBA	ALBA_010	05.02.2015	16.02.2015

EDMERP Projects

SeaDataNet PAN-EUROPEAN INFRASTRUCTURE FOR OCEAN & MARINE DATA MANAGEMENT

European Directory of Marine Environmental Research Projects (EDMERP)

SEARCH

Sea search: [input]
 Data search: [input]
 Coordinates: [input]
 Country: [input]

EDMERP RESULTS

ID	Project Name	Start Date	End Date	Status
1001	Coastal and Shelf Hydrographic Observation System (OSHO)	2007-01-01	2007-12-31	Completed
1002	Sea-Viewing Wide Field-of-View Satellite (SeaWiFS)	2002-01-01	2002-12-31	Completed
1003	SeaWiFS	2002-01-01	2002-12-31	Completed
1004	SeaWiFS	2002-01-01	2002-12-31	Completed
1005	SeaWiFS	2002-01-01	2002-12-31	Completed
1006	SeaWiFS	2002-01-01	2002-12-31	Completed
1007	SeaWiFS	2002-01-01	2002-12-31	Completed
1008	SeaWiFS	2002-01-01	2002-12-31	Completed
1009	SeaWiFS	2002-01-01	2002-12-31	Completed
1010	SeaWiFS	2002-01-01	2002-12-31	Completed

CSR Research cruises

SeaDataNet PAN-EUROPEAN INFRASTRUCTURE FOR OCEAN & MARINE DATA MANAGEMENT

European Directory of Marine Environmental Data (EDMED)

SEARCH

Major search: [input]
 Location: [input]
 Data search: [input]

EDMED RESULTS

ID	Data Set Name	From	To
1001	ACQUISITION OF ENVIRONMENTAL DATA COLLECTED DURING ACRIS	2007-01-01	2007-12-31
1002	ACQUISITION OF ENVIRONMENTAL DATA COLLECTED DURING ACRIS	2007-01-01	2007-12-31
1003	ACQUISITION OF ENVIRONMENTAL DATA COLLECTED DURING ACRIS	2007-01-01	2007-12-31
1004	ACQUISITION OF ENVIRONMENTAL DATA COLLECTED DURING ACRIS	2007-01-01	2007-12-31
1005	ACQUISITION OF ENVIRONMENTAL DATA COLLECTED DURING ACRIS	2007-01-01	2007-12-31
1006	ACQUISITION OF ENVIRONMENTAL DATA COLLECTED DURING ACRIS	2007-01-01	2007-12-31
1007	ACQUISITION OF ENVIRONMENTAL DATA COLLECTED DURING ACRIS	2007-01-01	2007-12-31
1008	ACQUISITION OF ENVIRONMENTAL DATA COLLECTED DURING ACRIS	2007-01-01	2007-12-31
1009	ACQUISITION OF ENVIRONMENTAL DATA COLLECTED DURING ACRIS	2007-01-01	2007-12-31
1010	ACQUISITION OF ENVIRONMENTAL DATA COLLECTED DURING ACRIS	2007-01-01	2007-12-31

EDMED Data sets

SeaDataNet PAN-EUROPEAN INFRASTRUCTURE FOR OCEAN & MARINE DATA MANAGEMENT

European Directory of Observing Information Systems (EDIOS)

SEARCH

Major search: [input]
 Location: [input]
 Data search: [input]

EDIOS Observing programmes

SeaDataNet PAN-EUROPEAN INFRASTRUCTURE FOR OCEAN & MARINE DATA MANAGEMENT

Common Data Index (CDI)

SEARCH

Major search: [input]
 Location: [input]
 Data search: [input]

CDI Data index

SERVICES

ACCESS PRODUCTS

Download the SeaDataNet aggregated datasets : ODV collections of all SeaDataNet measurements of temperature and salinity by sea basins, or the SeaDataNet climatologies : regional gridded field products based on the aggregated datasets



SEARCH DATA



BROWSE DATA



DOWNLOAD SOFTWARE



LOOK-UP VOCABULARIES



ACCESS PRODUCTS



ACCESS METADATA CATALOGUES



HOW TO CONTRIBUTE?

PRODUCTS

SeaDataNet provides aggregated datasets (ODV collections of all SeaDataNet measurements of temperature and salinity by sea basins) and climatologies (regional gridded field products based on the aggregated datasets) for all the European sea basins.

[Read more](#)

Aggregated datasets

Climatologies

Documentation

Catalogue

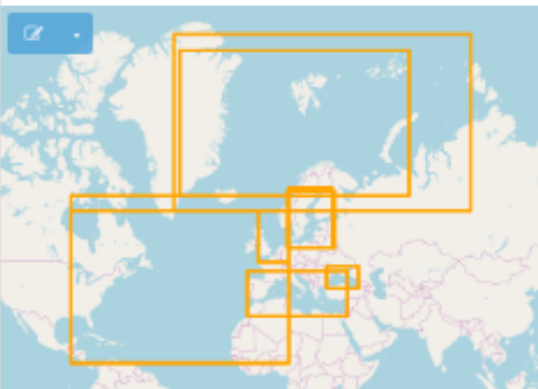
Historical data
collections of all T
and S measurements
within SeaDataNet
covering all EU sea
basins (DOI)

gridded
climatologies
(DOI)

reports describing
products'
characteristics and
quality (DOI)

Product Catalogue

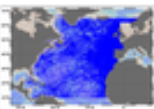
Search ... Q



Reset filters

CATALOG MY DOWNLOADS
Results 1 to 17 on 17 : 20 by page -
Sort by : Popularity -

NORTH ATLANTIC OCEAN - TEMPERATURE AND SALINITY OBSERVATION COLLECTION V1.1

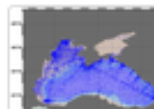


SeaDataNet Temperature and Salinity historical data collection, including revised quality flags after quality control with ODV. For data access please register at <http://www.marine-id.org>. The dataset format is ODV binary collections. You can read, analyse and...

Source: Seadatanet

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🔄
📄

BLACK SEA - TEMPERATURE AND SALINITY OBSERVATION COLLECTION V2

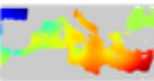


The Black Sea historical dataset includes all open access temperature and salinity in situ data from the Black Sea and Sea of Azov for period 1868-2014. The data were retrieved from the SeaDataNet infrastructure in the mid of 2015. Data quality has been analysed and checked...

Source: Seadatanet

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MEDITERRANEAN SEA - TEMPERATURE AND SALINITY CLIMATOLOGY V1.1

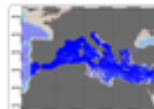


Mediterranean Sea Climatology computed from the SeaDataNet V1.1 aggregated dataset. The version used for the DIVA software is the 4.6.9. The period covers 1900-2013. For data access please register at <http://www.marine-id.org> ...

Source: Seadatanet

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MEDITERRANEAN SEA - TEMPERATURE AND SALINITY OBSERVATION COLLECTION V1.1



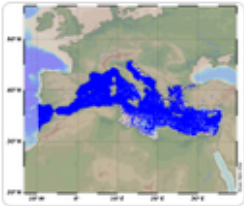
SeaDataNet Temperature and Salinity historical data collection contains all open access temperature and salinity in situ data retrieved from SeaDataNet infrastructure at the end of 2013. The data span between -9.25 and 37 degrees of longitude, thus including an Atlantic ...

Source: Seadatanet

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🔄
📄




Product Catalogue

MEDITERRANEAN SEA - TEMPERATURE AND SALINITY OBSERVATION COLLECTION V2



SeaDataNet Temperature and Salinity historical data collection for the Mediterranean Sea contains all open access temperature and salinity in situ data retrieved from SeaDataNet infrastructure at the end of 2014. The data span between -9.25 and 37 ...


Source: Seadatanet

↑
↑
↑
Download
Viewing tools **Ocean Browser**
and **Oceanotron**
Metadata record (DOI)

Controlled vocabularies used in all metadatabases and data formats (interoperability) organised with international governance, user interfaces and web services

BODC WEBSERVICES V2 (LIBRARIES) CL12

Library	Thesaurus	Title	Alt Title	Version	Members	Modified
C16		SeaDataNet sea areas	SDN sea areas	9	127	11/7/2012 2:00:06 AM
C17		ICES Platform Codes	ICES Platforms	709	5571	3/13/2018 2:00:03 AM
C19		SeaVoX salt and fresh water body gazetteer	SeaVoX water bodies	17	263	2/21/2018 2:00:03 AM
C32		International Standards Organisation countries	ISO countries	7	251	1/14/2016 2:00:02 AM
C34		Activity purpose categories	Purpose categories	4	22	8/27/2011 3:00:05 AM
C35		European Nature Information System Level 3 Habitats	EUNIS3 Habitats	1	56	2/19/2010 2:01:37 AM
C36		Monitoring activity legislative drivers	Monitoring drivers	8	91	6/21/2017 3:00:03 AM
C37		Ten-degree Marsden Squares	Marsden-10	3	612	1/9/2009 2:00:05 AM
C38		SeaDataNet Ports Gazetteer	SeaDataNet Ports	61	4912	12/5/2017 2:00:02 AM
C39		World Meteorological Organisation sea	WMO sea states	1	10	9/30/2009 3:01:08 AM

Software Tools

To create metadata CDI,
CSR, EDMO, EDIOS,
EDMERP

To convert data file

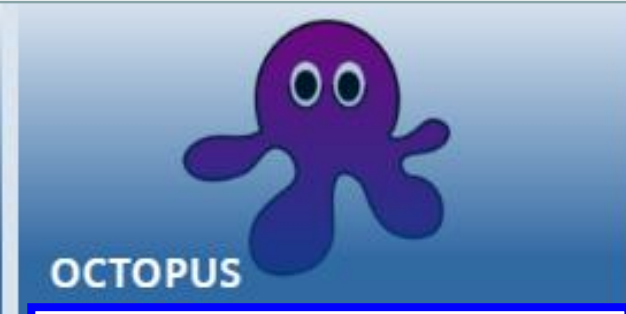
To convert to the
internal formats



MIKADO



NEMO



OCTOPUS

To present and analyse data

To make available data in
data centres



ODV



DIVA



DOWNLOAD MANAGER

To generate the spatial
objects for CDI files



ENDSANDBENDS



SeaDataCloud project activities

This project has received funding from the European Union's Horizon 2020 Research Infrastructures programme, under the grant agreement No 730960".

Upgrading and innovating existing services for users and data providers:

- Advancing the CDI service by adopting cloud
- Introducing 'Linked Data principle' to catalogues for semantic web
- Adding transformation facility for INSPIRE compliance



Developing new services for users and data providers:

- SWE Ingestion service for Real Time data streams
- Brokerage service for mutual exchange with international data networks
- Virtual Research Environment (VRE) with advanced services: subsetting, online ODV, DIVA, and visualisation

Challenges for extreme weather events



EGU Conference, Vienna, Austria, 8-13 April 2018

How the ocean drives extreme weather events?

- To improve the understanding of variability and climate change and the link between the latter and extreme events
- To improve the knowledge of global climate pattern
- To predict human influence on climate change

Carrying out research in this field of sea sciences can help the humanity. The availability of great amount of high quality ocean data allows hazard vulnerability assessment and gives the possibility to plan the risk mitigation strategies and the adaptation measures.



High tide in Venice (01dic2008)

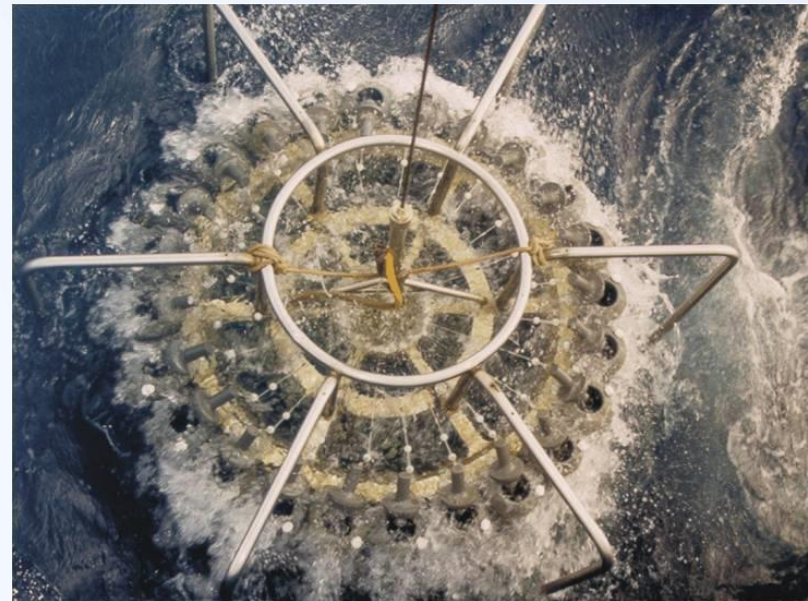
Credit: Consorzio Venezia Nuova

How SeaDataNet supports extreme weather events study

In the SeaDataNet infrastructure are available more than 2 M of data sets comprising bathymetry data as well as temperature, salinity, currents, etc. In situ data is used mainly for validation activity of climate-hazard modelling data and satellite data.

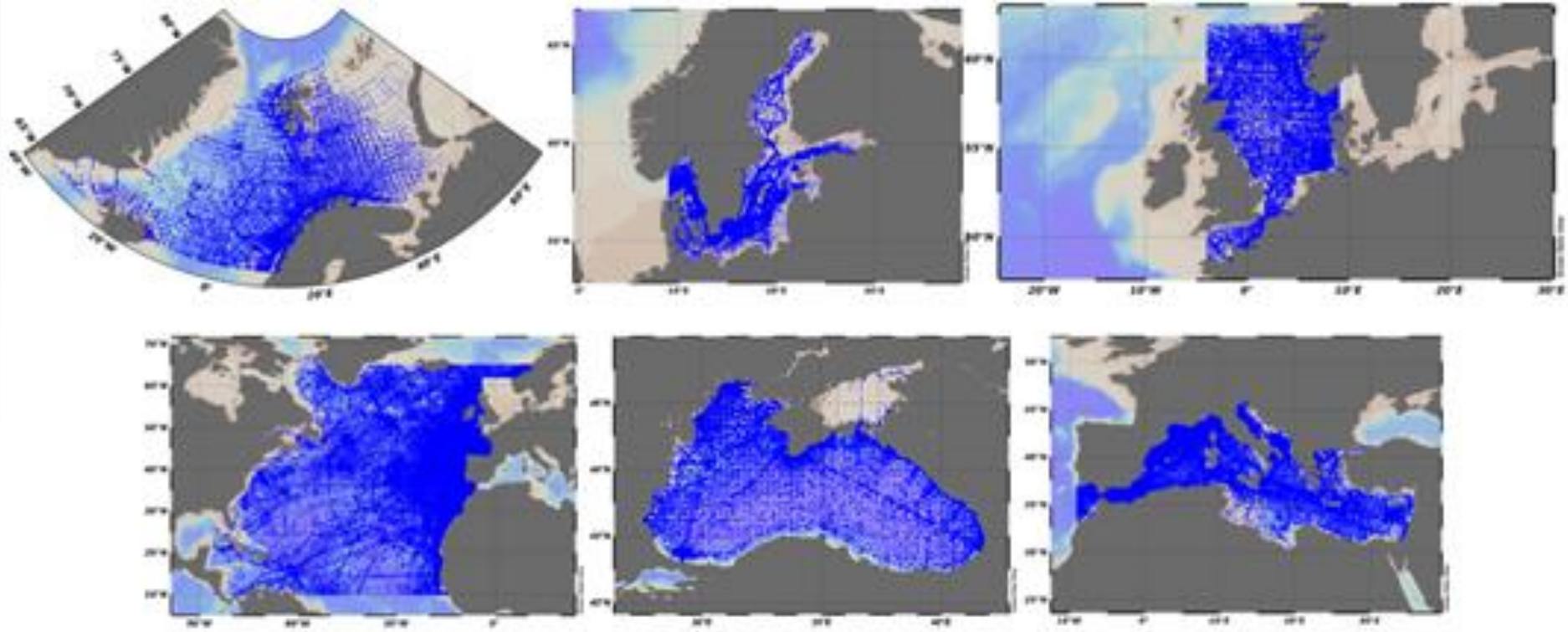
Improved models are used to better forecast and to predict areas that are likely to be very high exposure to climate hazards.

SDN released qualified temperature and salinity historical data collections in the European regional seas as well as climatological maps.

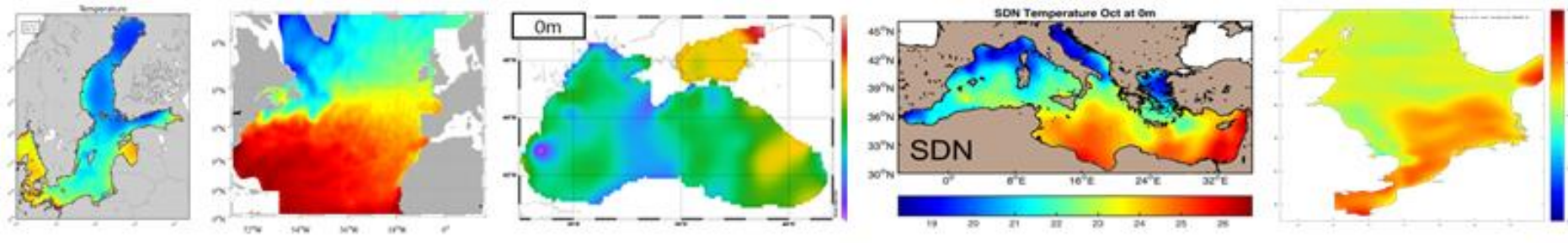


Rosette sampler

Availability of aggregated dataset 1900-2014



OceanBrowser



SDN provides temperature and salinity climatologies, based on the aggregated datasets, for all the European sea basins produced using DIVA software

The highlights

- Easy to use for end-users and data providers
- 110 Data centres providing data and metadata
- More than 2.100.000 ocean data sets available
- Vocabulary governance and services
- Standard QA-QC procedures, method for checking possible duplicates
- Standards and interoperability solutions widely recognized by the international community, beyond European borders.

SeaDataNet is present in the ODIP project and it collaborates with the existing global infrastructures such as the IOC-IODE – Ocean Data Portal (ODP), GEOSS and the International Council for Science World Data System (ICSUWDS).



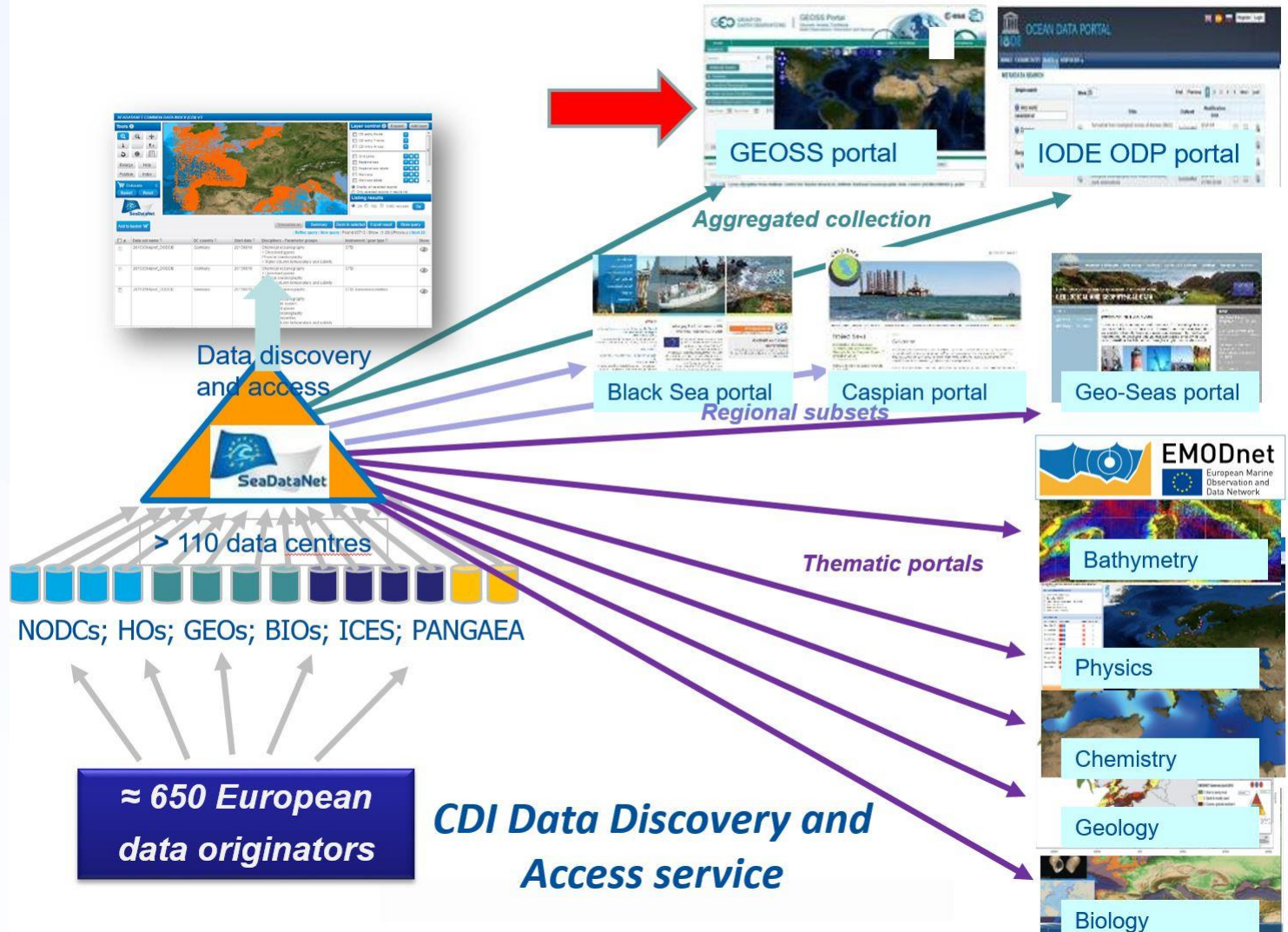
Australian Government



Cooperation and involvement

- **Copernicus Marine Environmental Monitoring Services (CMEMS):** providing long-term archives and standards
- **Marine Strategy Framework Directive (MSFD):** providing infrastructure, standards and data collections for several indicators
- **Large ocean monitoring systems (EuroGOOS, AtlantOS, Euro-ARGO, JERICO-Next, EuroFleets, ..):** providing standards and validation + long-term archiving services
- **Ocean Data Interoperability Platform (ODIP):** exploring and demonstrating common standards and interoperability with leading data management infrastructures in USA and Australia
- **GEOSS - EuroGEOSS:** feeding GEOSS portal with SeaDataNet in-situ data collections from large community of European data holders (> 100 data centres; >600 data originators)
- **European Open Science Cloud (EOSC):** shaping the pilot Blue Cloud
- **European Marine Observation and Data Network (EMODnet):** driving and serving many EMODnet thematic portals

CDI service driving and serving many portals and communities



Barcelona, 5-7 November, 2018

imdis.seadatanet.org

Organised in the frame of SeaDataCloud project funded by the EU Horizon 2020 Research Infrastructures programme

4 plenary sessions :

1. Data services and tools in ocean science
2. Technical developments for marine information and data management
3. Marine environmental infrastructures for observation data (data management and access)
4. Data products, information and knowledge

Submit your abstract before **30th April 2018**