



# PAN-EUROPEAN INFRASTRUCTURE FOR OCEAN & MARINE DATA MANAGEMENT



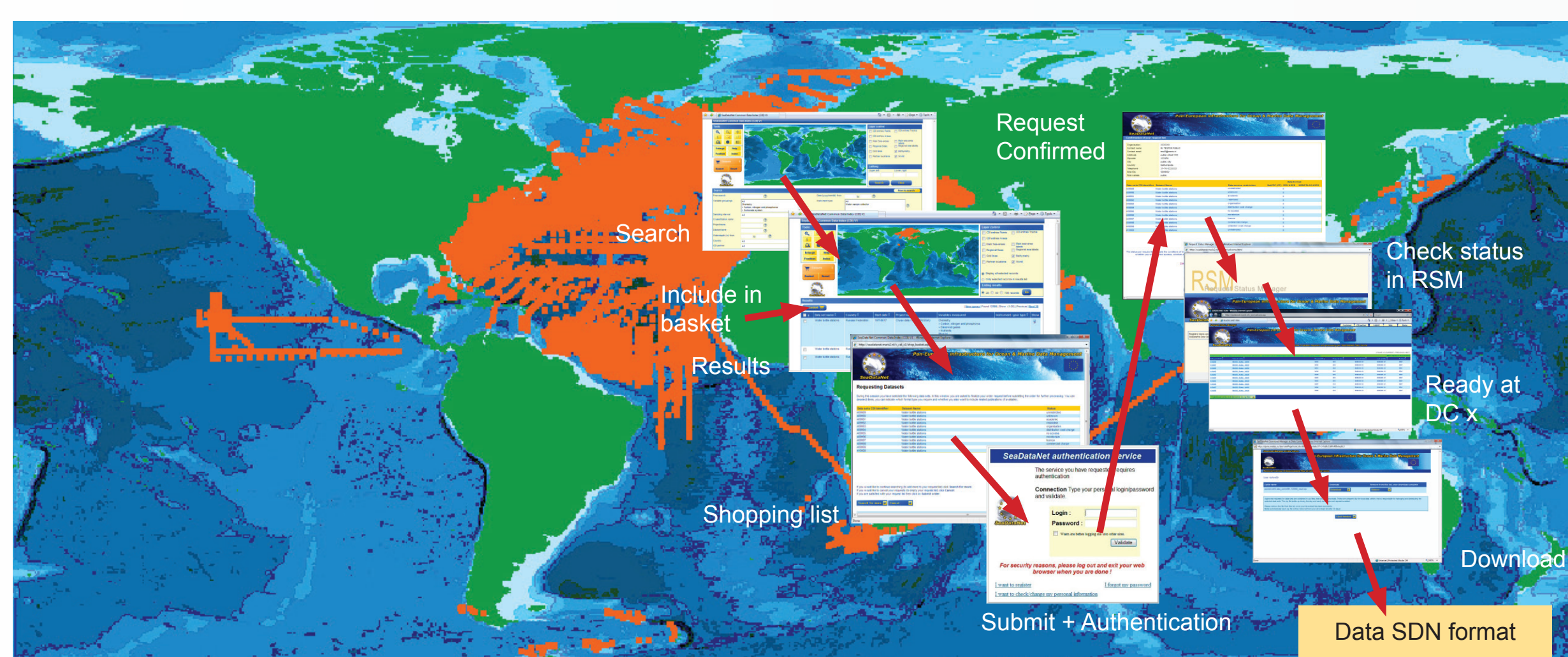
SeaDataNet is actively operating and further developing a Pan-European infrastructure for managing, indexing and providing access to ocean and marine environmental data sets and data products (e.g. physical, chemical, geological, bathymetric and biological properties) and for safeguarding a long term archival and stewardship of these data sets. Data are derived from many different sensors installed on board of research vessels, satellites and in-situ platforms, that are part of the various ocean and marine observing systems. Data resources are quality controlled and managed at distributed data centres, that are interconnected by SeaDataNet infrastructure and accessible for users through a central portal.

## DISCOVERY AND VIEWING SERVICES

- SeaDataNet maintains pan-European discovery services with overviews of marine organisations in Europe and their engagement in marine research projects, managing large datasets, and data acquisition by research vessels and monitoring programmes for the European seas and global oceans:
  - European Directory of Marine Organisations (EDMO)
  - European Directory of Marine Environmental Data (EDMED)
  - European Directory of Marine Environmental Research Projects (EDMERP)
  - Cruise Summary Reports (CSR)
  - European Directory of Oceanographic Observing Systems (EDIOS)
  - Common Data Index (CDI)
- SeaDataNet develops data products and aggregated data sets on five regions, Mediterranean Sea, Black Sea, Baltic Sea, North Atlantic, and Arctic and North Seas, that can be explored and downloaded by geographical viewing services.

## STANDARDS AND TOOLS

- Common metadata standards and XML schemas, based on ISO 19115 / 19139
- Standard data transport formats such as ODV ASCII and NetCDF (CF)
- Common QC methods and quality flag scale
- Common Vocabulary Web services, used to mark up metadata and data, covering a broad spectrum of disciplines. Governed by an international board (SeaVox)
- Unified user interfaces for querying Discovery services
- Use of OGC, ISO, and INSPIRE standards
- Versatile Ocean Data View (ODV) data analysis and visualisation software package, for seamless use of SeaDataNet data sets
- Sophisticated statistical DIVA tool for making comparable gridded data products at regional and global scale from merged in-situ and satellite datasets
- Software tools and services for interconnecting the portal and distributed data centres:
  - Flexible entry & edit tools for updating the Discovery services
  - Tools for converting various data formats to SeaDataNet standards
  - Shopping mechanism for tracking and processing user data requests
  - Central user register and AAA services
  - Multiple platform support
  - SOAP Web services for various communication tasks



## SEADATANET DATA POLICY

- SeaDataNet has adopted a common data policy, striving for free, but controlled access to all datasets. Users can browse freely in all Discovery services, and need to register and agree with the SeaDataNet licence for data access.

The initiative for developing a Pan-European infrastructure for ocean and marine data management started as Sea-Search project under FP5 (2002 - 2005) with a focus on metadata and was continued under FP6 (2006 - 2011) as SeaDataNet with a wider focus including harmonised access to data. It is continued under FP7 (2011 - 2015) as SeaDataNet II. It is undertaken by the National Oceanographic Data Centres (NODCs), and marine information services of major research institutes, from 31 coastal states bordering the European seas, and also includes Satellite Data Centres, expert modelling centres and the international organisations IOC, ICES and EU-JRC in its network. Its 40 data centres are highly skilled and have been actively engaged in data management for many years and have the essential capabilities and facilities for data quality control, long term stewardship, retrieval and distribution. SeaDataNet II is undertaking activities to achieve data access and data products services that meet requirements of end-users and intermediate user communities, such as GMES Marine Core Services (e.g. MyOcean), establishing SeaDataNet as the core data management component of the EMODNet infrastructure and contributing on behalf of Europe to global portal initiatives, such as the IOC/IODE – Ocean Data Portal (ODP), and GEOSS. Moreover it aims to achieve INSPIRE compliance and to contribute to the INSPIRE process for developing implementing rules for oceanography.

## UNIFIED ACCESS TO DISTRIBUTED DATASETS

- SeaDataNet provides unified on-line access via its portal website to the vast resources of marine and ocean datasets, that are managed by the distributed data centres. The Common Data Index (CDI) is the key Discovery and Delivery service. It gives users a highly detailed insight in the geographical coverage, and other metadata features of data across the different data centres. Users can request access to identified datasets in a harmonised way, using a shopping basket. They can follow the processing of requests via an on-line transaction register and can download datasets in the SeaDataNet standard formats.



## TRAINING, EDUCATION AND CAPACITY BUILDING

- Training workshops are organised for transfer of practices and tools and for overall data management capacity building at IOC-IODE's training centre

## COOPERATION WITH INTER ALIA

- EuroGOOS for the EDIOS directory and improving access to real-time data
- GMES Marine Core Services for streamlining the provision of long-term archives for optimising marine forecast services
- POGO for information on ocean-going research vessels, and their operators, planned and completed cruises

## ADOPTION OF SEADATANET STANDARDS & TOOLS AND EXPANSION OF THE SEADATANET INFRASTRUCTURE IN THE FOLLOWING PROJECTS

- FP7 Geo-Seas for improving overview and access to geological and geophysical data sets, involving 24 geological and geophysical data centres from 16 European countries
- FP7 Upgrade Black Sea SCENE involving 6 NODCs and 35 other data holding institutes from the 6 Black Sea countries, to provide metadata and data access and to strengthen their national NODC networks
- EMODNet pilots: initiative in the frame of the EU Marine Directive for an overarching European Marine Observation and Data Network (EMODNet), for improving availability of high quality data
- FP7 EUROFLEETS, involving 24 research institutes and data centres from 17 European countries, to optimise the management of research vessels and to streamline the flow of data from the research cruises to the data centre infrastructure
- FP7 JERICO for optimising the design and implementation of coastal monitoring networks including streamlining the flow of monitoring data from the sites to the data centre infrastructure

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Supported by EU FP7

[www.seadatanet.org](http://www.seadatanet.org)