



Istituto Nazionale
di Oceanografia e di Geofisica Sperimentale



FAIR and Open Data per i dati marini

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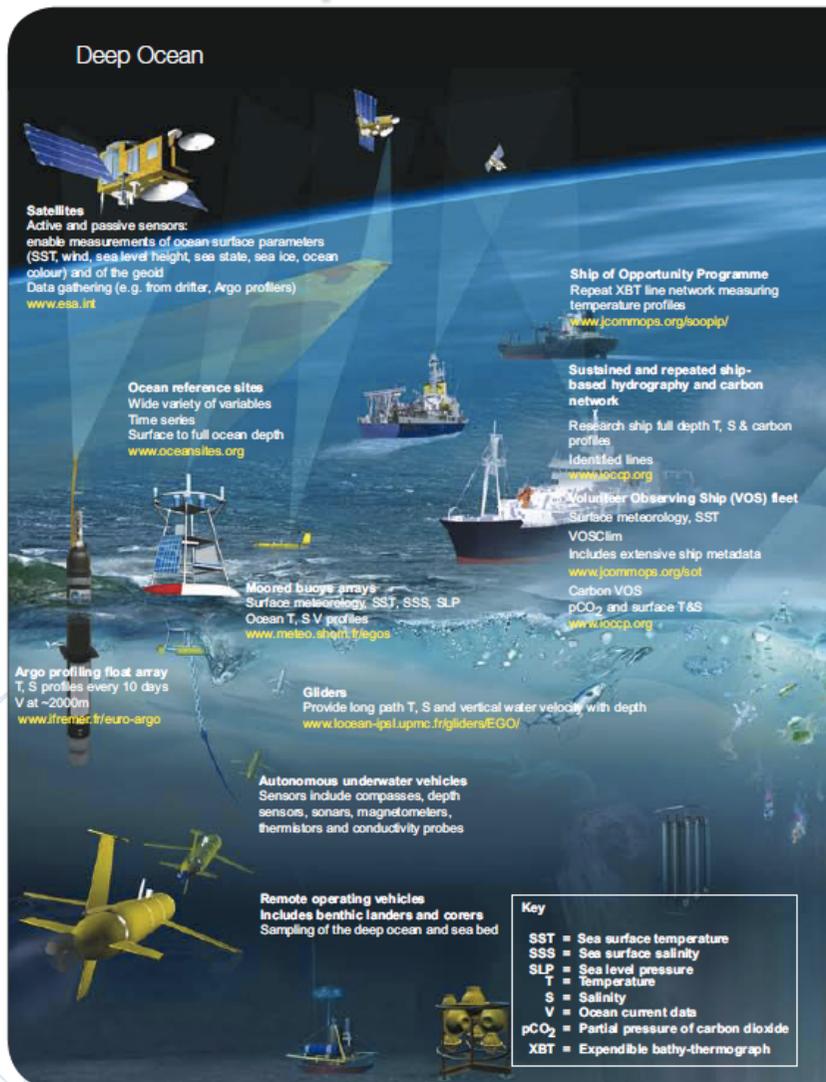
Dati marini in-situ e remoti



- di diverse **discipline**
- su diverse matrici
- acquisiti con strumenti e **metodologie** diverse
- a diversa **risoluzione** spaziale e temporale

Procedure specifiche sono sviluppate per trattare, salvaguardare e distribuire i dati in modo integrato.

Marine data acquisition



EU cost – benefit analysis: cost of marine observation in Europe is circa 400 Million Euro per year for space data and another 1 Billion Euro per year for in-situ data



Iniziative europee per gestione integrata dei dati marini

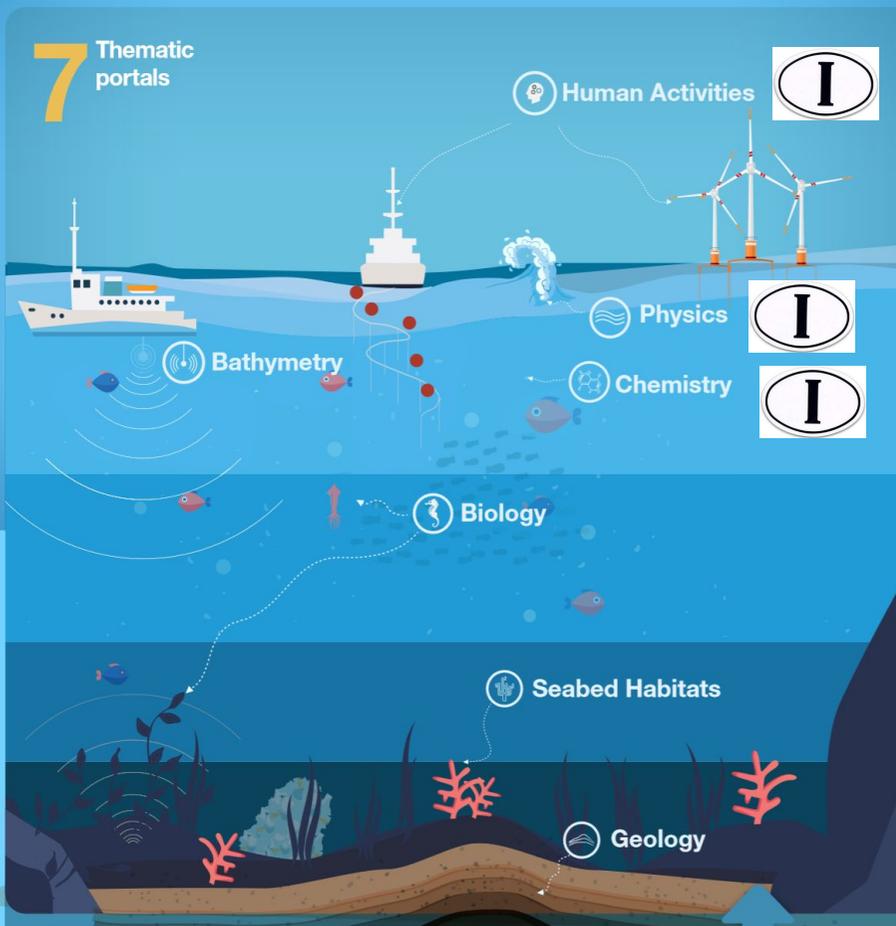


EMODnet
European Marine
Observation and
Data Network

**THE EUROPEAN MARINE OBSERVATION
AND DATA NETWORK - AT A GLANCE**

Over **150 organisations** assembling and making available
marine data, metadata & products

7 Thematic portals

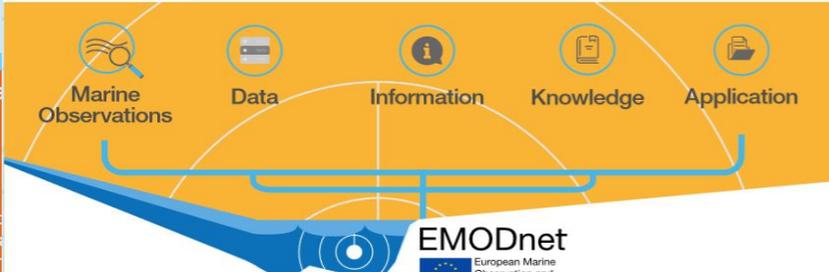


1 Central Portal (www.emodnet.eu)
Gateway to all EMODnet data resources and tools allowing users to retrieve data layers from multiple themes

EMODnet Secretariat

6 Sea basins
Check of marine basins

From raw data to real-life applications



EMODnet
European Marine
Observation and
Data Network

EMODnet Timeline



- 2009
- Phase I
 - ⊙ Limited sea basins
 - ⊙ 59 institutes
 - ⊙ budget: 6.45 M€
- 2013
- Phase II
 - ⊙ Low resolution all basins
 - ⊙ 120 institutes
 - ⊙ budget: 16.3 M€
- 2017
- Phase III
 - ← "We are here"
 - ⊙ Multi-resolution
 - ⊙ over 150 institutes
- 2020

1 Ingestion Portal
facilitating submission of new datasets

Iniziative europee per gestione integrata dei dati marini



90s

EU EDMED

EU Euronodim

EU MEDATLAS

EU EDIOS

2002-2005

EU Sea-Search

2006-2011

EU SeaDataNet

2011-2015

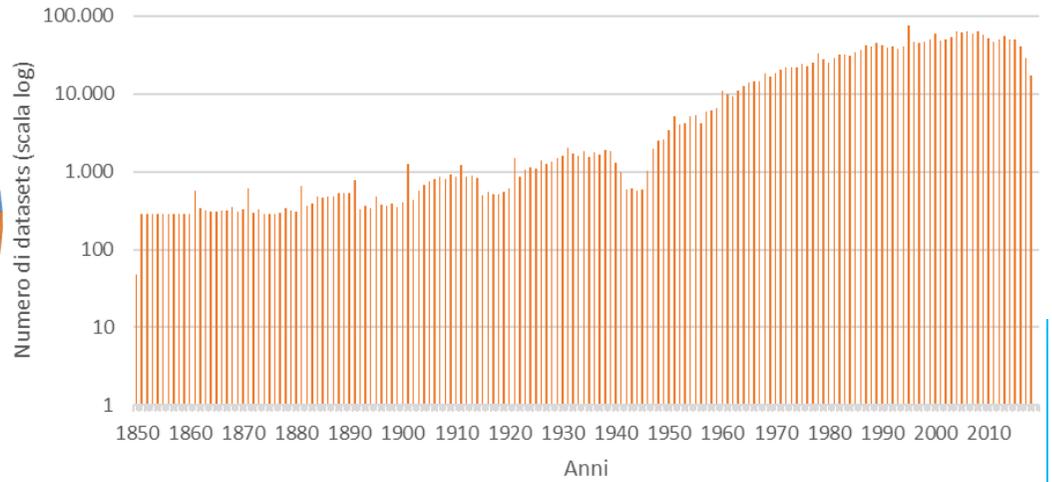
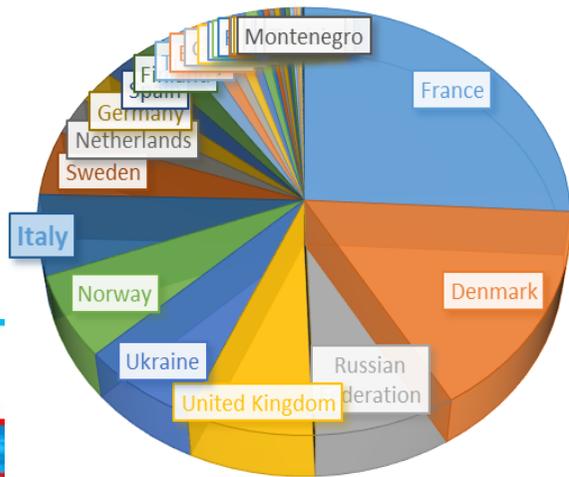
Eu SeaDataNet II

2016-2020

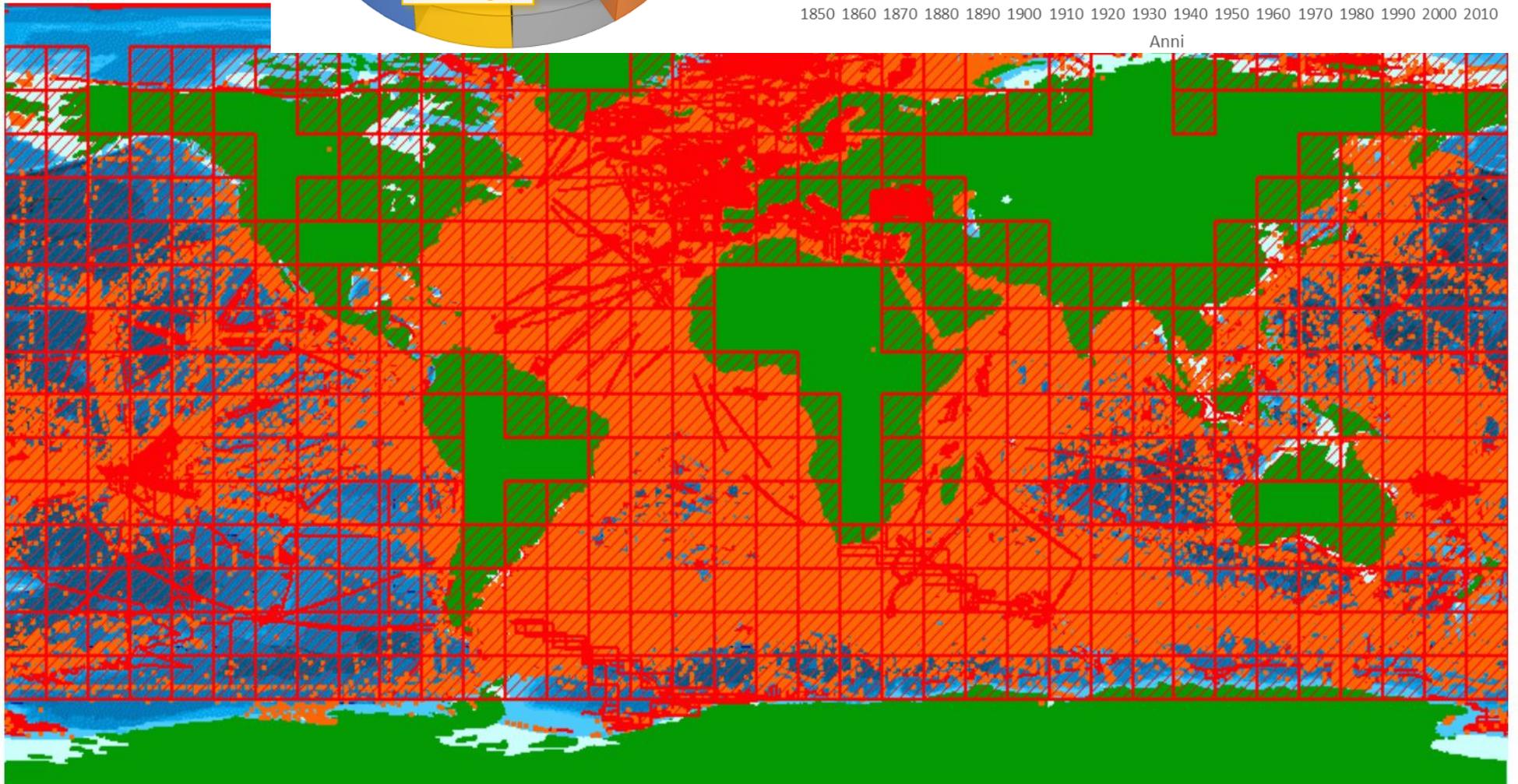
Eu SeaDataCloud



Quali dati?



CDI ENLARGED MAP



Principi FAIR per Open Data

- To be **F**indable -> data are described with rich and standardized metadata

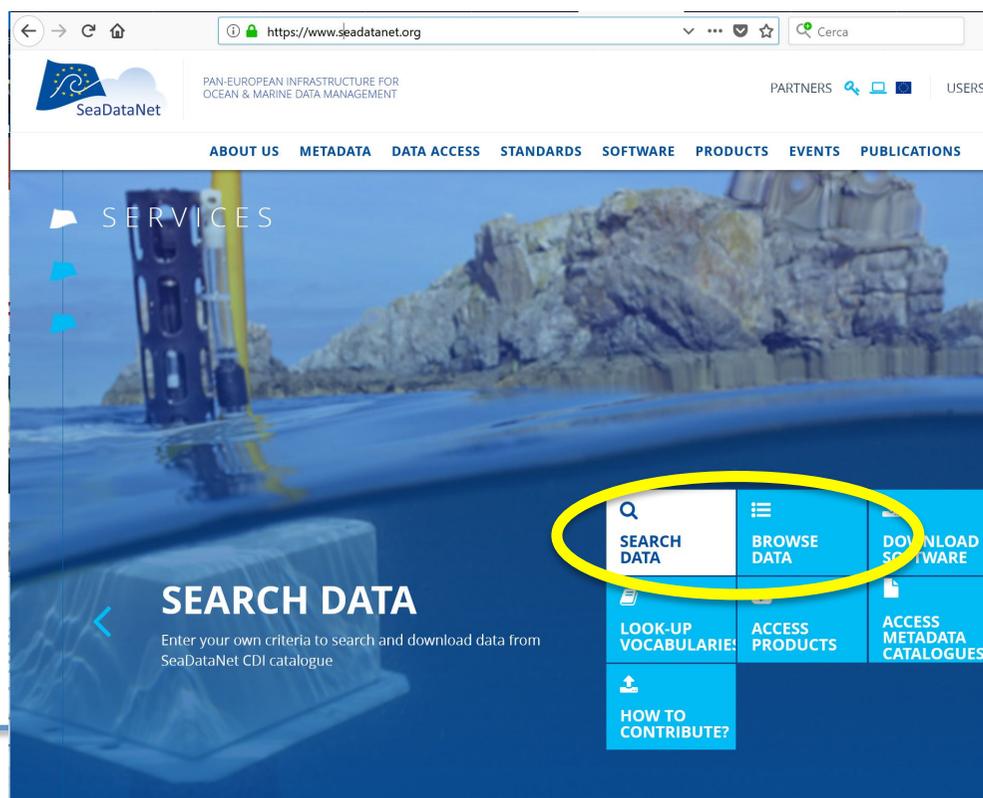


OGS – CTD – T°-2013/02/02- 45.69/13.70



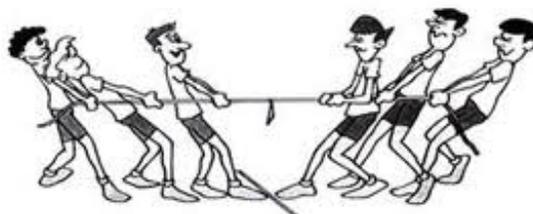
Principi FAIR per Open Data

- To be **F**indable -> data are described with rich and standardized metadata
- To be **A**ccessible -> data are accessible through a dedicated discovery service with authorization procedure



Data policy

Data originators



Utenti:

comunità scientifica,
organizzazioni
pubbliche, agenzie
ambientali

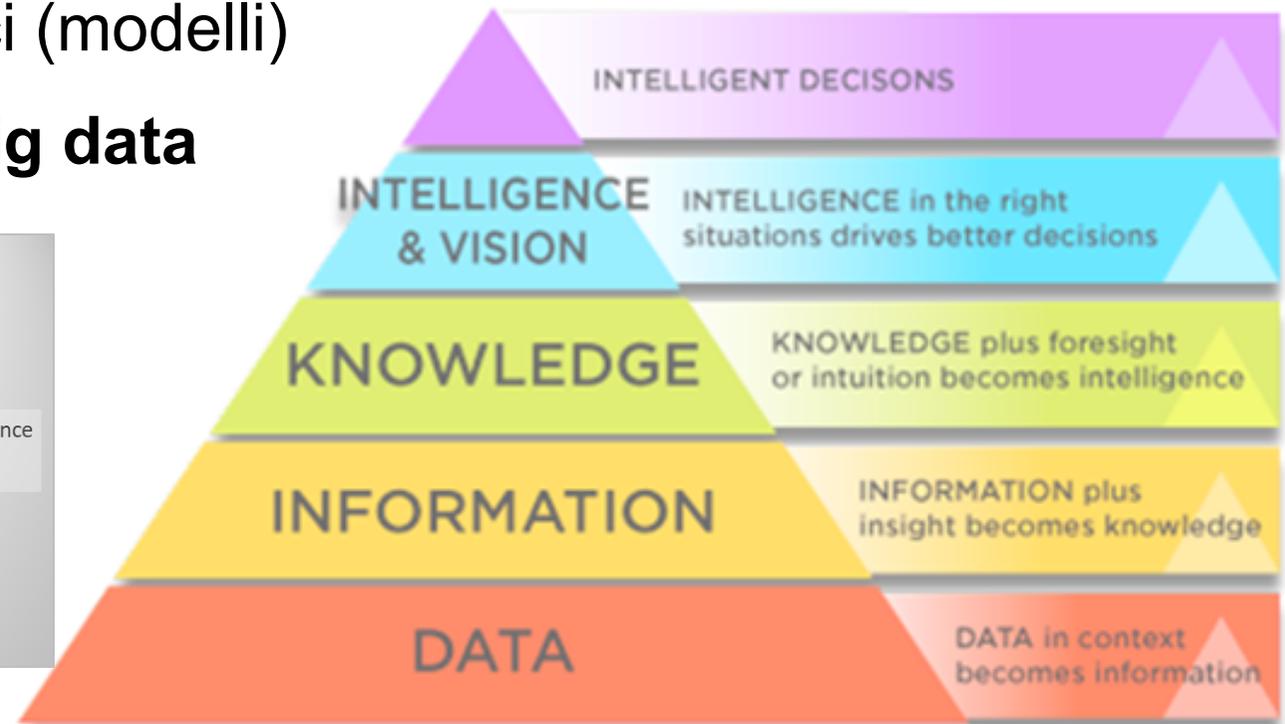
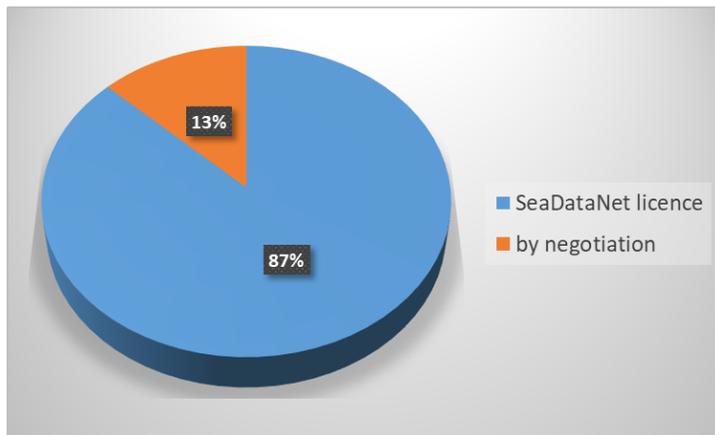
La **Data policy** permette di raggiungere un equilibrio tra i diritti degli *originators* e la necessità di un accesso diffuso attraverso la condivisione e lo scambio libero e senza restrizioni di dati, metadati e prodotti di dati.

Condizioni di Accesso ai dati

- Dati ambientali, preziosi perché non riproducibili seguono una Data Policy
- Le aggregazioni/collezioni (serie temporali, per bacino) sono Open Data
- Dati interpolati (mappe climatologiche) sono Open Data, come i dati sintetici (modelli)

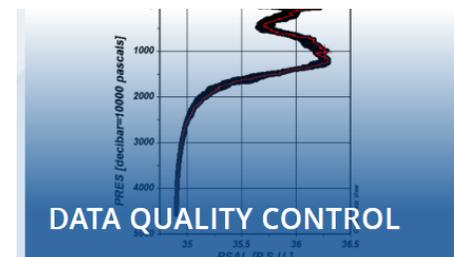
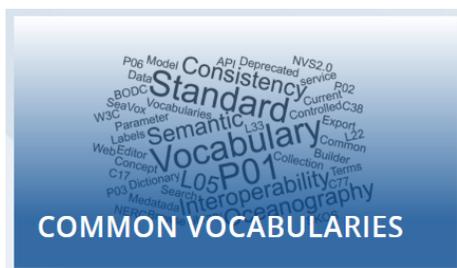


Da dati preziosi a big data



Principi FAIR per Open Data

- To be **F**indable -> data are described with rich and standardized metadata
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- To be **I**nteroperable -> use of standards that follow FAIR principles



Principi FAIR per Open Data

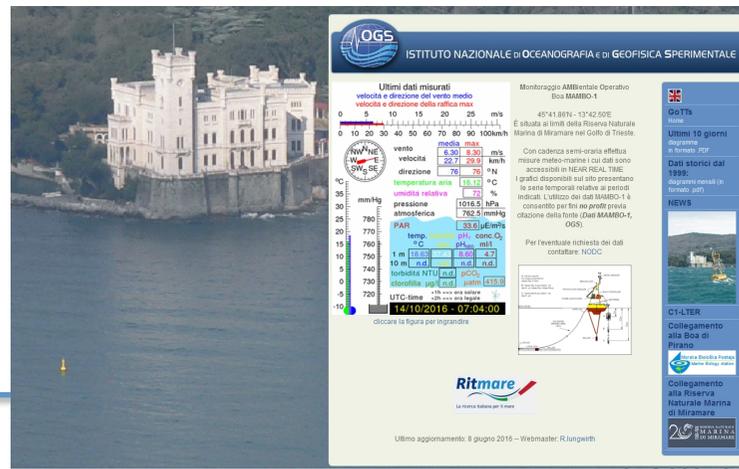
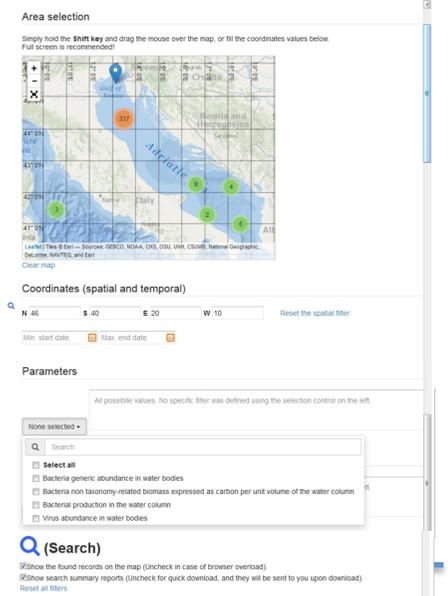
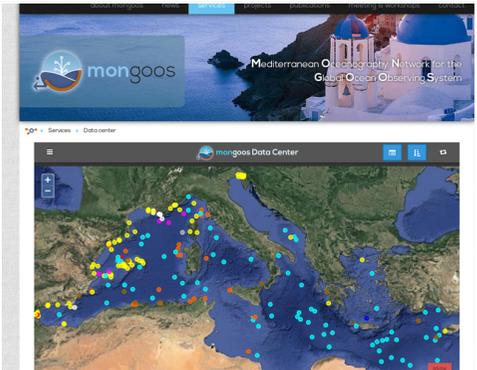
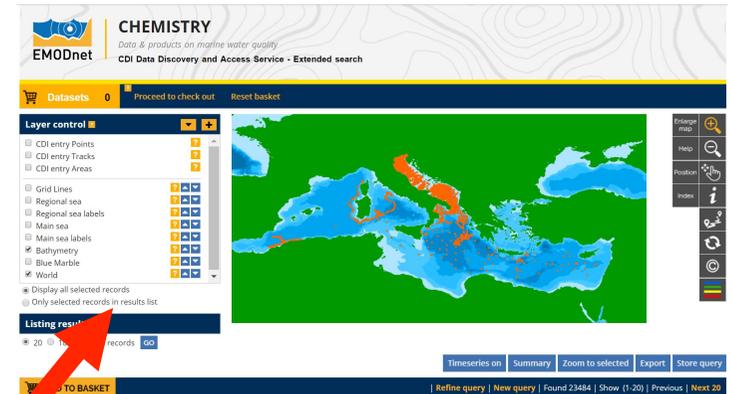
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- To be **A**ccessible -> data are accessible through a dedicated discovery service with authorization procedure
- To be **I**nteroperable -> use of standards that follow FAIR principles
- To be **R**e-usable -> open data have accurate and relevant attributes



Il flusso dei dati



Standardizzazione di formati
 Metadati
 Termini comuni (vocabolari)
 Validazione



Considerazioni finali

➤ Dati aperti sono un'opportunità per il mondo scientifico purché «originator» sia opportunamente riconosciuto



➤ Tutti i servizi di visualizzazione di EMODnet Chemistry sono sul Cloud del Cineca



➤ In collaborazione con EUDAT, tutto il SeaDataNet VRE sul Cloud (B2ACCESS, B2DROP, ...)



➤ Sinergia Cineca, GARR+LightNet e NODC rafforza ICDI

➤ INFRAEOSC-2018 (ENVI-FAIR) e BlueCloud Pilot per migliorare la FAIRness

