SeaDataCloud

New projects with relation to SeaDataNet

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SDC Plenary meeting – Brest – France – 17-18 October 2019

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ENVRI-FAIR

- H2020 project
- To connect the ESFRI Cluster of Environmental Research Infrastructures (ENVRI) to the European Open Science Cloud (EOSC)
- Involving environmental research infrastructures (RI) in subdomains: Atmosphere, Marine, Solid Earth and Biodiversity / Ecosystems
- Overarching goal: all RIs to improve their FAIRness and to become ready for connection to EOSC. .
- MARINE RIs: SeaDataNet, Euro-ARGO, ICOS Marine, EMSO, and Lifewatch Marine.
- Partners from SeaDataNet: IFREMER, MARIS, RBINS, OGS, BODC, and CSIC.
- 4 year project from 1 January 2019.

What is FAIR?

nature > scientific data > comment > article

SCIENTIFIC DATA

Comment | OPEN | Published: 15 March 2016

The FAIR Guiding Principles for scientific data management and stewardship

Mark D. Wilkinson, Michel Dumontier, IJsbrand Jan Aalbersberg, Gabrielle Appleton, Myles Axton, Arie Baak, Niklas Blomberg, Jan-Willem Boiten, Luiz Bonino da Silva Santos, Philip E. Bourne, Jildau Bouwman, Anthony J. Brookes, Tim Clark, Mercè Crosas, Ingrid Dillo, Olivier Dumon, Scott Edmunds, Chris T. Evelo, Richard Finkers, Alejandra Gonzalez-Beltran, Alasdair J.G. Gray, Paul Groth, Carole Goble, Jeffrey S. Grethe, Jaap Heringa, Peter A.C 't Hoen, Rob Hooft, Tobias Kuhn, Ruben Kok, Joost Kok, Scott J. Lusher, Maryann E. Martone, Albert Mons, Abel L. Packer, Bengt Persson, Philippe Rocca-Serra, Marco Roos, Rene van Schaik, Susanna-Assunta Sansone, Erik Schultes, Thierry Sengstag, Ted Slater, George Strawn, Morris A. Swertz, Mark Thompson, Johan van der Lei, Erik van Mulligen, Jan Velterop, Andra Waagmeester, Peter Wittenburg, Katherine Wolstencroft, Jun Zhao & Barend Mons - Show fewer authors

Scientific Data **3**, Article number: 160018 (2016) | Download Citation

Article in 2016

"Data and services that are *Findable, Accessible, Interoperable, Re-usable* both for machines and for people."

Further work in:

GO FAIR

RDA RESEARCH DATA ALLIANCE

FAIR Guiding Principles

Box 2 | The FAIR Guiding Principles

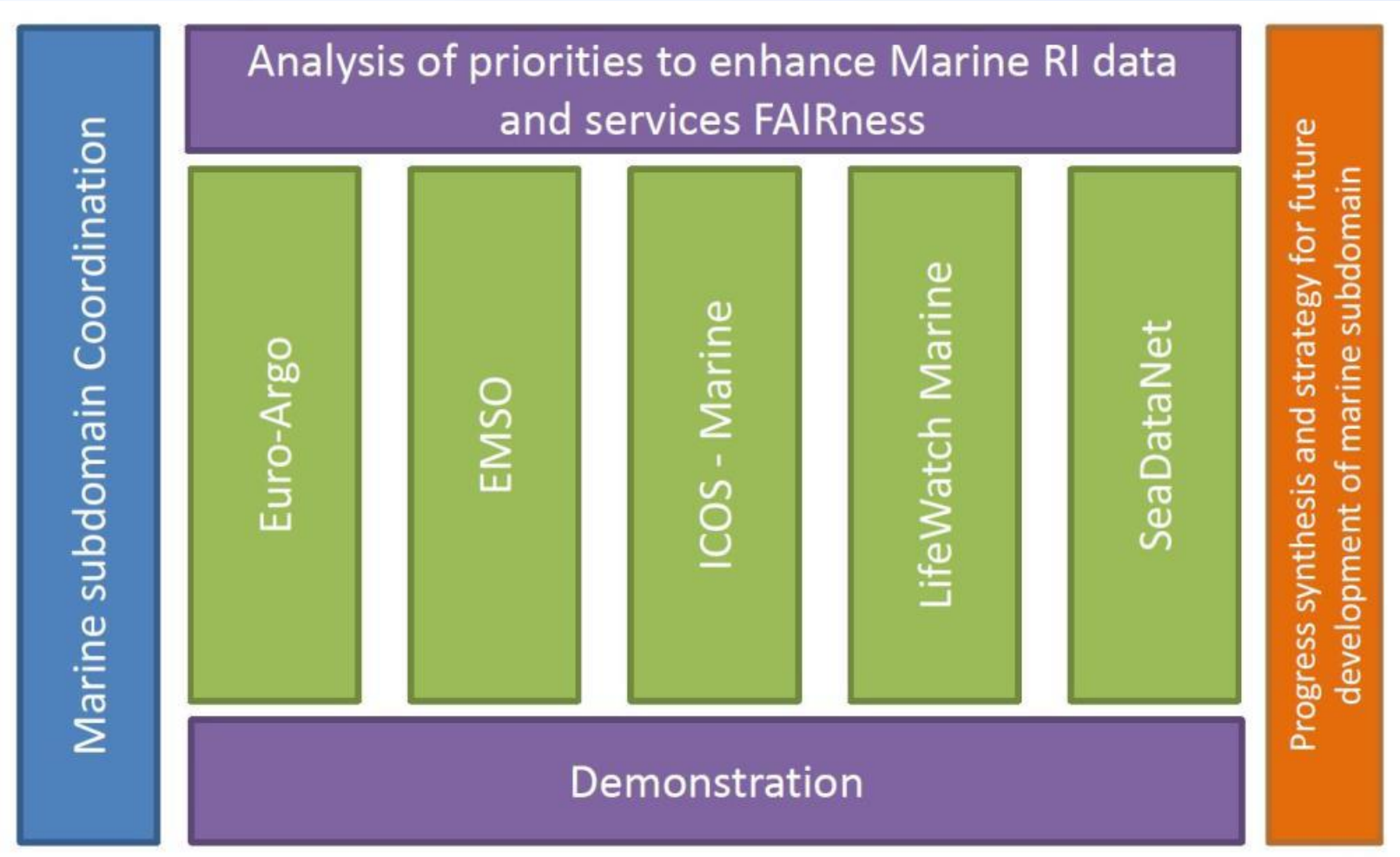
To be Findable:
F1. (meta)data are assigned a globally unique and persistent identifier
F2. data are described with rich metadata (defined by R1 below)
F3. metadata clearly and explicitly include the identifier of the data it describes
F4. (meta)data are registered or indexed in a searchable resource

To be Accessible:
A1. (meta)data are retrievable by their identifier using a standardized communications protocol
A1.1 the protocol is open, free, and universally implementable
A1.2 the protocol allows for an authentication and authorization procedure, where necessary
A2. metadata are accessible, even when the data are no longer available

To be Interoperable:
I1. (meta)data use a formal, accessible, shared, and broadly applicable language for knowledge representation.
I2. (meta)data use vocabularies that follow FAIR principles
I3. (meta)data include qualified references to other (meta)data

To be Reusable:
R1. meta(data) are richly described with a plurality of accurate and relevant attributes
R1.1. (meta)data are released with a clear and accessible data usage license
R1.2. (meta)data are associated with detailed provenance
R1.3. (meta)data meet domain-relevant community standards

ENVRI-FAIR workplan for marine subdomain



PHIDIAS – CEF project

- Strong focus on ICT
- To build a prototype for Data/HPC services based on Earth sciences cases
- To develop and provide new services to discover, manage and process spatial and environmental data (in particular from earth surface, atmosphere, ocean…).
- To propose a generic workflow for massive (big) scientific data by combining computing, dissemination and archiving resources in a single framework.
- To explore a distributed model for data transfer and resource allocation between two european computing centers (CINES in France and CSC in Finland).
- Partners from SeaDataNet: IFREMER, MARIS, ULiege, SYKE, and CSC (EUDAT).
- 3 year project from 1 September 2019.

EMODnet successor projects

- **EMODnet Bathymetry - HRSM2 project**
  - Gathering more bathymetric survey data sets in CDI service
  - Generating new release of the EMODnet Digital Terrain Model for European seas
  - Major synergy with SeaDataNet, using the CDI service.
  - 2 years project agreed with EASME in December 2018 with option another 2 years
  - Coordinated by Shom.
- **EMODnet Chemistry 4:**
  - Continued focus on eutrophication, contaminants, and marine litter data gathering and data products generation.
  - Major synergy with SeaDataNet, using the CDI service
  - Many SDN partners involved
  - 2 years project agreed with EASME in October 2019 with option another 2 years
  - Coordinated by OGS

EMODnet successor projects

- **EMODnet Physics 4**:
  - Continued focus on making operational oceanography time series available from three pillars: SeaDataNet, CMEMS-INSTAC, and EuroGOOS ROOS's.
  - Major synergy with SeaDataNet for bridging the gap between operational oceanography and long term archives.
  - 2 years project agreed with EASME in October 2019 with option another 2 years
  - Coordinated by ETT
- **EMODnet Ingestion 2**:
  - Continued focus on including third party data sets in the European marine data exchange
  - Cooperation with EMODnet Physics for identifying and mobilizing more operational oceanography stations and pushing SWE uptake
  - Major synergy with SeaDataNet for routing and elaborating ingested data sets towards standard formats and inclusion in SeaDataNet and EurOBIS and other European infrastructures
  - 2 years project to be agreed with EASME in October 2019 with option another 2 years
  - Coordinated by MARIS and HCMR

Blue Cloud

- **Blue Cloud:** H2020 project
- Part of 'The Future of Seas and Oceans Flagship Initiative' call.
- To explore and demonstrate the potential of cloud based open science in the domain of ocean sustainability,
- Pilot Blue Cloud as a cyber platform brings together and provides access:
  - 1) multidisciplinary data from observations and models,
  - 2) analytical tools,
  - 3) computing facilities essential for key blue science use cases.
- 5 Demonstration cases
- Outputs includes also a Blue Cloud 2030 implementation Policy Roadmap.
- SeaDataNet partners: IFREMER, MARIS, CNR, VLIZ, and EUDAT.
- Lead by TRUST-IT with MARIS as Technical Coordinator.
- 3 year project started October 2019.

Blue Cloud - Capitalising on existing blue infrastructures

- Active cooperation with international initiatives, such as IOC, WMO, FAO, GEO, ICES, and others
- European marine data management and processing infrastructures:
  - **SeaDataNet** (marine environment)
  - **EurOBIS** (marine biodiversity)
  - **Euro-Argo and Argo GDAC** (ocean physics and marine biogeochemistry)
  - **EMODnet** (bathymetry, chemistry, geology, physics, biology, seabed habitats, and human activities)
  - **ELIXIR-ENA** (biogenomics)
  - **EuroBioImaging** (microscopy)
  - **COPERNICUS CMEMS** (ocean analysis and forecasting)
  - **COPERNICUS C3S** (climate analysis and forecasting)
  - **ICOS-Marine** (carbon)
- research e-infrastructures such as:
  - **DIAS – WekEO (CMEMS + C3S)**
  - **BlueBRIDGE VREs – D4Science**
  - **EUDAT B2 framework**

Blue Cloud Technical framework

- The pilot Blue-Cloud is envisioned as a smart federation of data resources, computing platforms, and analytical services

- The technical framework will feature:
  - a **component to serve federated discovery and access** to the blue data infrastructures and their multi-disciplinary data from observations, in-situ and remote sensing, data products and outputs of numerical models

  - a **component to serve as Blue Cloud VRE** by a federation of computing platforms and analytical services; this will include Virtual Labs for each of the use case Demonstrators

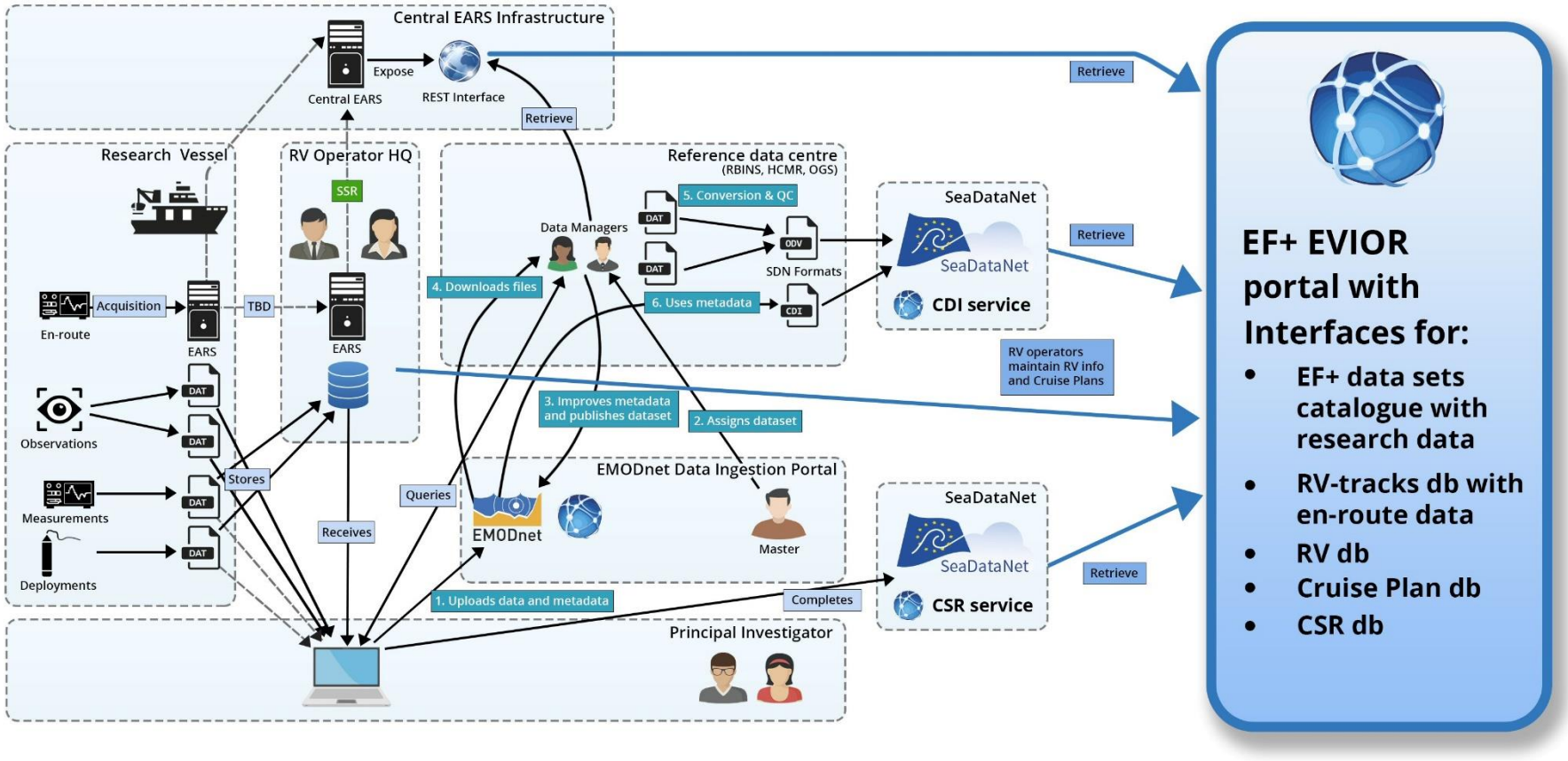
Blue Cloud - Federation

Blue Infrastructure	Actor in *Blue-Cloud* project	Blue Cloud Data Discovery and Access	Blue Cloud Virtual Research Environment
SeaDataNet	MARIS + IFREMER	X	X
EMODnet Bathymetry, EMODnet Chemistry	MARIS + IFREMER	X	
EurOBIS, EMODnet Biology	VLIZ	X	X
Euro-Argo, Argo GDAC	IFREMER	X	
ELIXIR-ENA	EMBL	X	X
EuroBioImaging – BioImage Archive	EMBL	X	
EuroBioImaging - EcoTaxa	SU	X	
DIAS – WekEO (CMEMS + C3S)	MOI	X	X
ICOS-Marine	UiB	X	
BlueBRIDGE VREs – D4Science	CNR-ISTI		X
EUDAT B2 framework	CINECA, CSC, DKRZ	X	X

EuroFleets+

- H2020 project
- Alliance of European marine research infrastructures (research vessels, AUVs, and ROVs) to meet the evolving needs of the research and industrial communities.
- Facilitating free access to 27 research vessels from European and international partners by TNA calls
- Aiming at ensuring that research data collected during the funded cruises, and en-route data collected will be made widely available in line with FAIR and Open Research Data principles.
- 3 year project started in February 2019
- Involved SeaDataNet partners: IFREMER, MARIS, RBINS, VLIZ, HCMR, CSIC

EuroFleets+ DM workflow



EMODnet - China

- Follow up from EU – China Summit
- 3 year project to start in January 2020
- Coordinated by SSBE (EMODnet Secretariate)
- Involvement of leading partners from all EMODnet lots
- ODIP approach will be adopted with 9 monthly Workshops and focus on a number of products and services
- WP0: Project Coordination
- WP1: EU-China Web Portal & creation of interoperable information system linking EMODnet with NMDIS
- **WP2: Establishing data interoperability between EMODnet and NMDIS**
- WP3: Comparison of European and Chinese models for regional sea reanalysis
- WP4: Comparison of European and Chinese models for seabed habitat and ecosystem vulnerability
- WP5: Coastal Adaptation