

# Increasing FAIRness of marine data within ENVRI-FAIR

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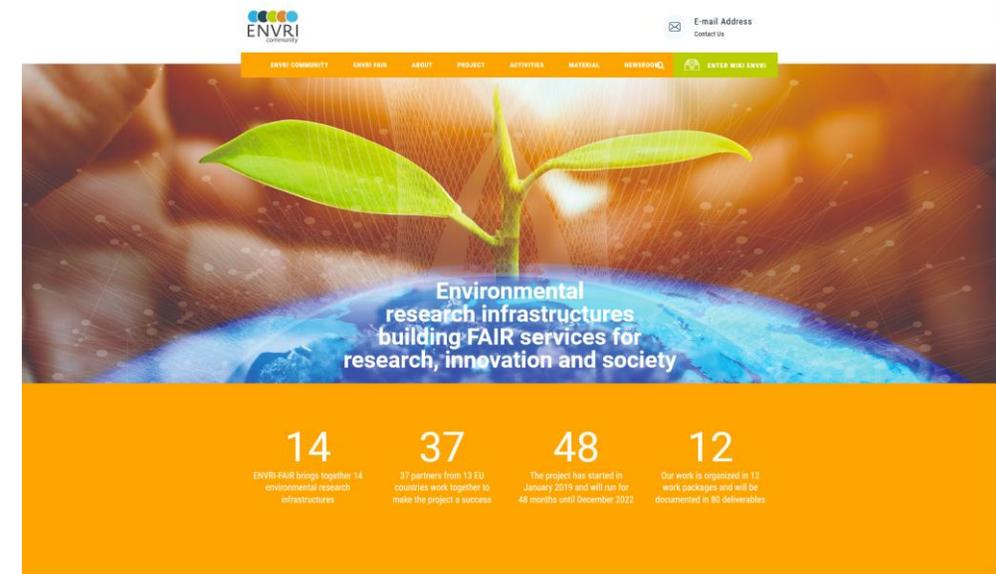
# Content

- ENVRI-FAIR
- What is FAIR?
- Approach for FAIRification of the marine Research Infrastructures
- Overview of developments



# ENVRI-FAIR

- ENVRI-FAIR (2019 - 2022) is focused on the preparation of the connection of the Cluster of Environmental Research Infrastructures (ENVRI) to the European Open Science Cloud (EOSC).
- The overarching goal is that at the end of the project, **all participating Research Infrastructures have built a set of FAIR data services** which enhances the efficiency and productivity of researchers, supports innovation, enables data- and knowledge-based decisions and prepares the ENVRI Cluster for connection to EOSC.
- Marine RI's form one of the subdomains: Euro-Argo, EMSO, ICOS-Marine, LifeWatch, SeaDataNet.



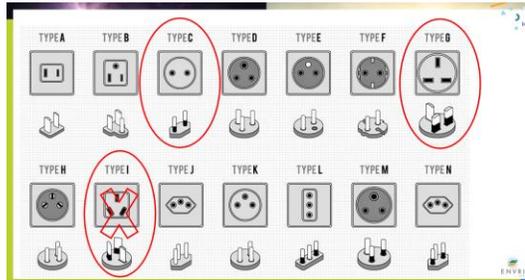
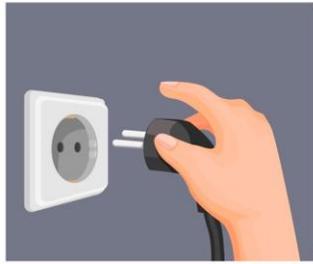
[www.envrifair.eu](http://www.envrifair.eu)



# What is FAIR?

## The issue

The plug



## The FAIR solution

The universal adapter



**F**indable 

**A**ccessible 

**I**nteroperable 

**R**eusable 

- FAIR is focused on machine2machine services
- Implementing FAIR principles don't require to change the data systems completely, but requires to **add information and services** at interface level. This leads to easier discovery and access to interpretable metadata and the data for machines (think of VRE's, Jupyter notebooks, etc.).





# Approach towards FAIRification

- Step 1: Do a FAIRness analysis for each RI's data repositories (documenting the status as a FAIR implementation profile)
- Step 2: Assessment of the FAIRness of each of the marine RI's, documenting current strengths, identified gaps and planned and/or suggested directions for solutions to overcome those gaps.
- Step 3: Set priorities to enhance RI's data FAIRness (bottom up)
- Step 4: Work out a conceptual implementation plan for each marine RI, resulting in an implementation plan per RI.
- Step 5: Creating a technical specification and planning of developments
- Step 6: Implementation phase (and repeating FIP to measure improvement)
- Step 7: Validation of services through expert tests, and the EOY product work

## FAIR Implementation Profile



A machine-actionable list of all FAIR-enabling resources (like the FDP) and includes domain-relevant community standards.

https://fip-wizard.ds-wizard.org/

FIP Wizard

VODAN

Create Document More

Chapters

- I. General Information about Survey
- II. General Information about Participant
- III. Findability
- IV. Accessibility
- V. Interoperability
- VI. Reusability

More

- TODOs
- Summary Report

Help

### III. Findability

Chapter text

**F1** What globally unique, persistent, resolvable identifiers do you use for metadata records?

**1.a.1** Choose your answer from FAIRsharing

Persistent Uniform Resource Locator

FAIRsharing <https://fairsharing.org/bsg-s001183>

**1.a.2** Add your resource description here

Identifiers used in the FAIR Data Point



# Ongoing developments per RI

## Some examples of work on data repositories:

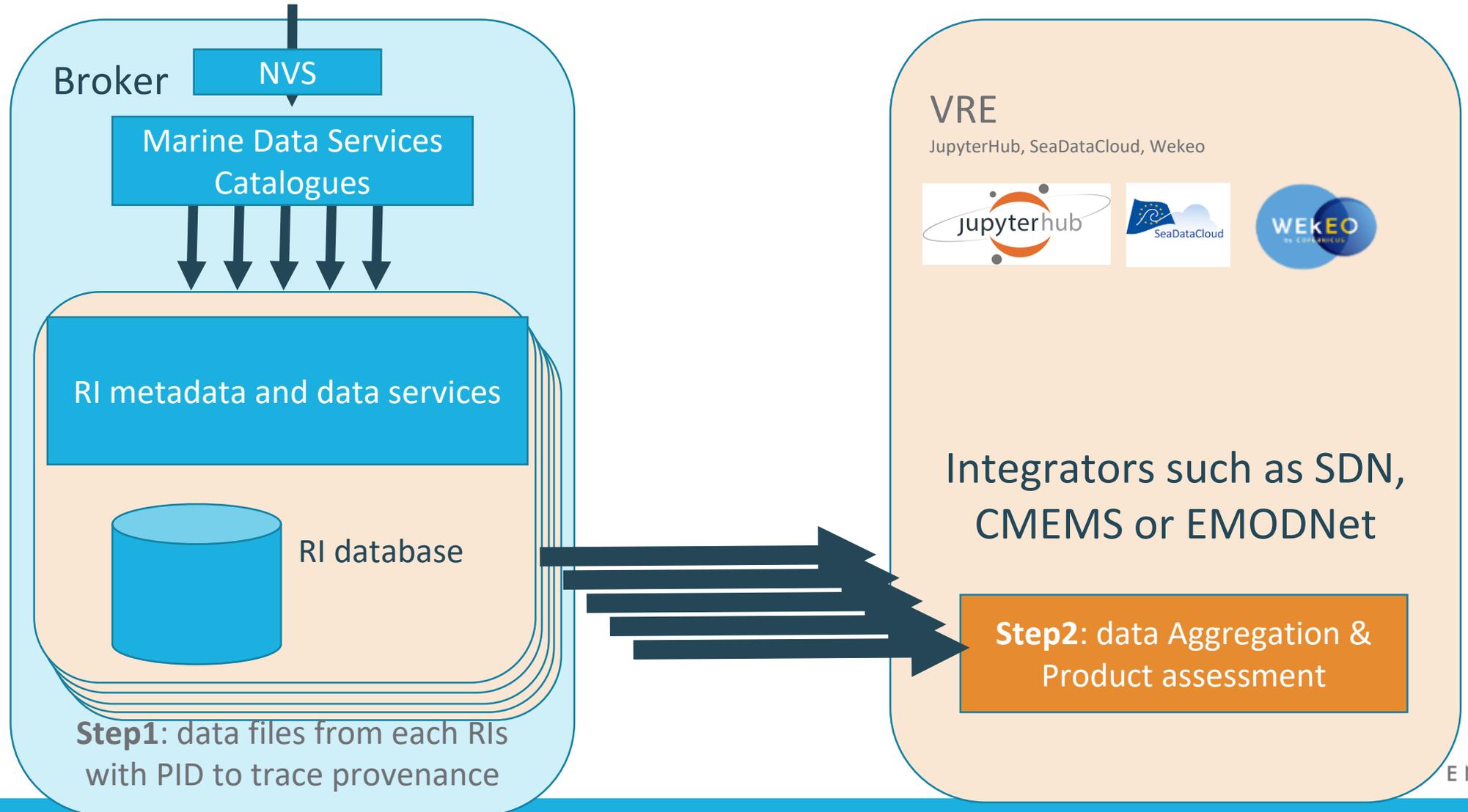
- F: Upgrading search options for data and metadata:
  - Support for OAI-PMH/CSW
  - PID registration
- A: Implement data and metadata API's allowing interoperable access even if the data are distributed
  - Linked data, DCAT-AP, with Sparql endpoint
  - Restful API
  - ERDDAP service
- I: Upgrading metadata using community agreed vocabularies in metadata descriptions that will allow mapping from one network to another, e.g.:
  - CF Convention ([cfconventions.org](http://cfconventions.org)) and/or NERC vocabulary system ([vocab.nerc.ac.uk](http://vocab.nerc.ac.uk)) for parameters, QC flags , ....
  - EDMO codes for institutions: [www.seadatanet.org/Metadata/EDMO-Organisations](http://www.seadatanet.org/Metadata/EDMO-Organisations)
  - ORCID for persons: [orcid.org/](http://orcid.org/)
- R: Upgrading provenance information:
  - Use of unique ID's (PID and DOI) for datasets to be able to track the data all along its lifetime
  - Adding provenance information to metadata (of sensor, data origin, quality control, processing steps, ..)

➡ Experiences in the marine subdomain and other subdomains will lead to **training materials, Knowledge Base content and a set of recommendations** for others.



# EOV product use case as validation

User request: give me Oxygen

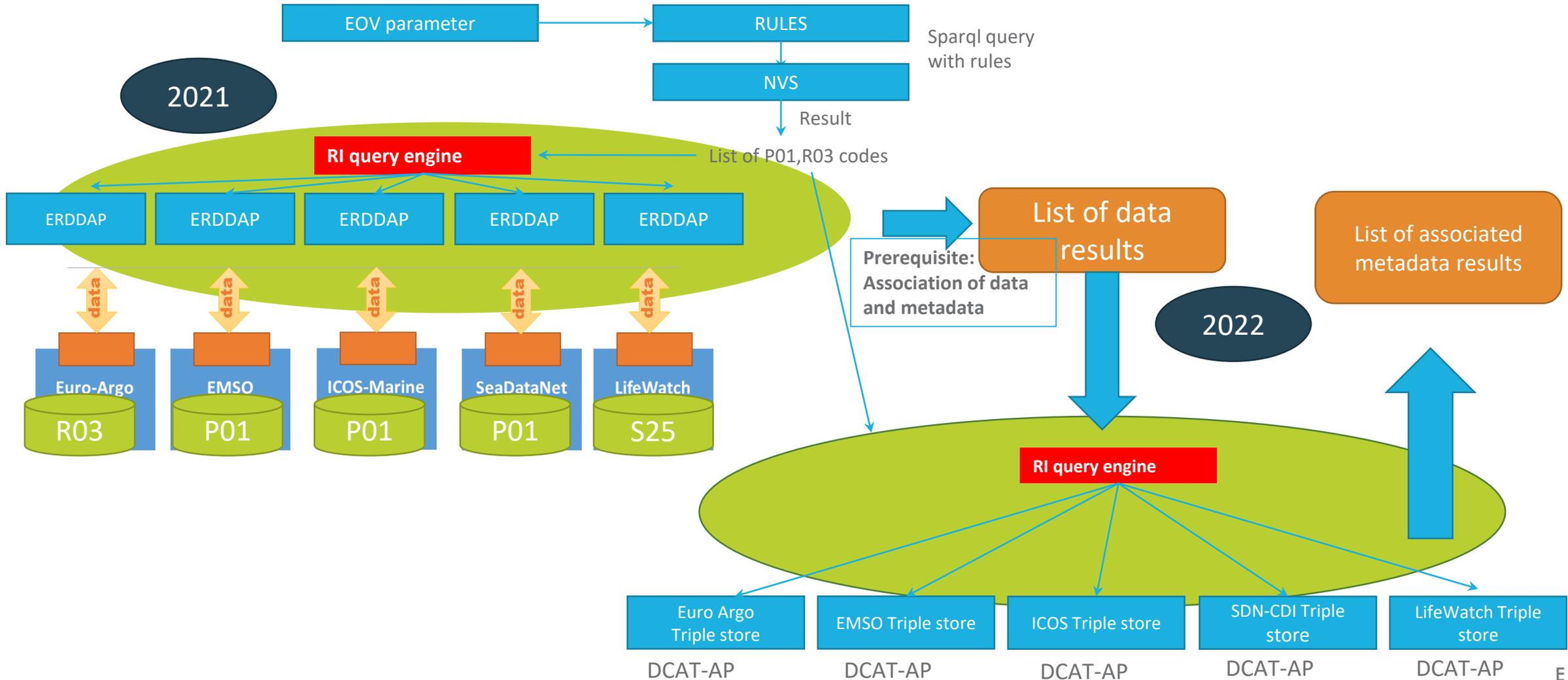


2021 : ERDDAP  
2022 ERDDAP or sparql  
endpoints on linked data



# Total scenario

Version 2021 and 2022: ERDDAP (2021) plus linked data semantic interoperability





# Questions?

Please contact me at:  
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FAIR



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