IT-IOOS:
how to integrate multi-source digital data and their near real time processing for management phases

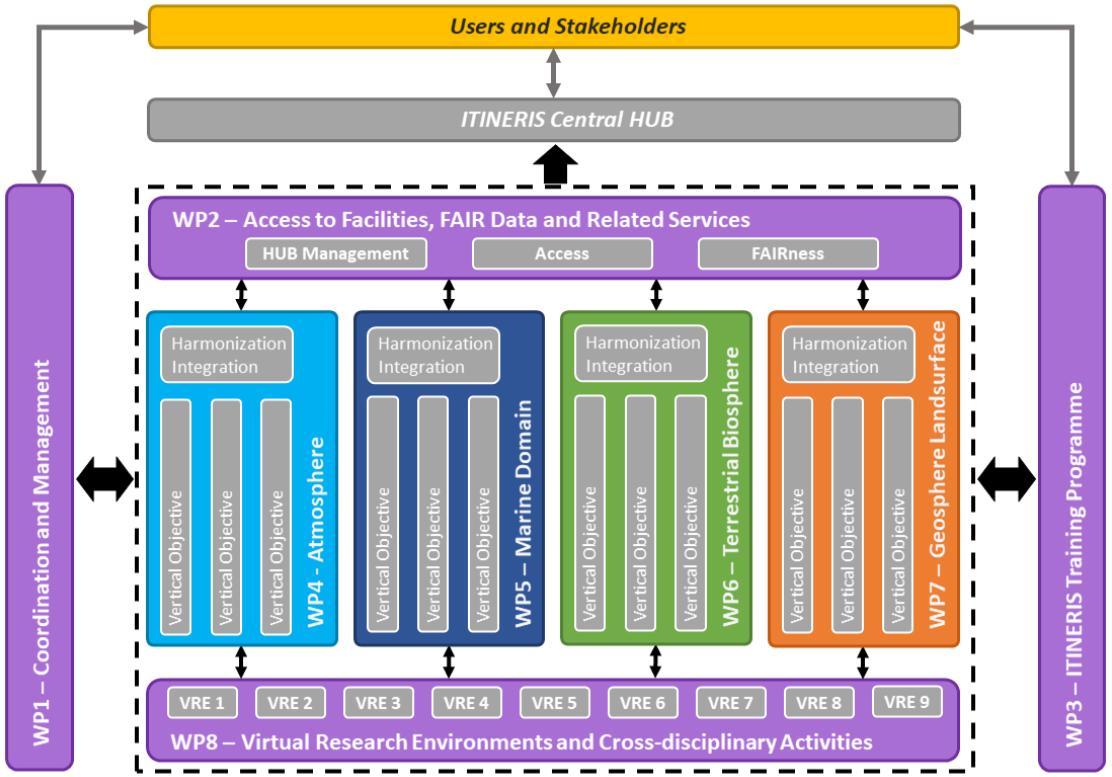
- CNR-ISMAR Naples, Italy
- Mauro Caccavale & Antonio Novellino

IR0000032 – ITINERIS, Italian Integrated Environmental Research Infrastructures System (D.D. n. 130/2022 - CUP B53C22002150006) Funded by EU - Next Generation EU PNRR-Mission 4 “Education and Research” - Component 2: “From research to business” - Investment 3.1: “Fund for the realisation of an integrated system of research and innovation infrastructures”

Finanziato dall'Unione europea NextGenerationEU

Ministero dell'Università e della Ricerca

Italiadomani



4 HUB 7 Partners

1 Virtual LAB 39 OU 22 RI

~500 units ~5Pb marine

ISPRA OGS NERIS INFN INGV

Environmental RIs

ACTRiS emso ERIC LifeWatch ERIC ICOS DANUBIUS-RI DISSCO eLTER Eurofleets+ SIOS EUFAR JERICO RI ECORD ATLaS N/R Laura Bassi Sistema di monitoraggio terrestre dell'Italia Nord Orientale (SMINO) Ca' Foscari University of Venice CeTrA

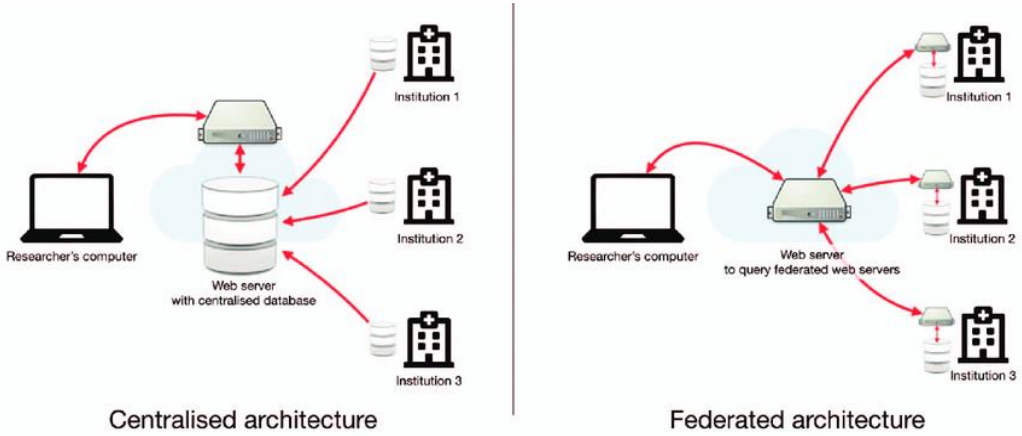
Health&Food RIs

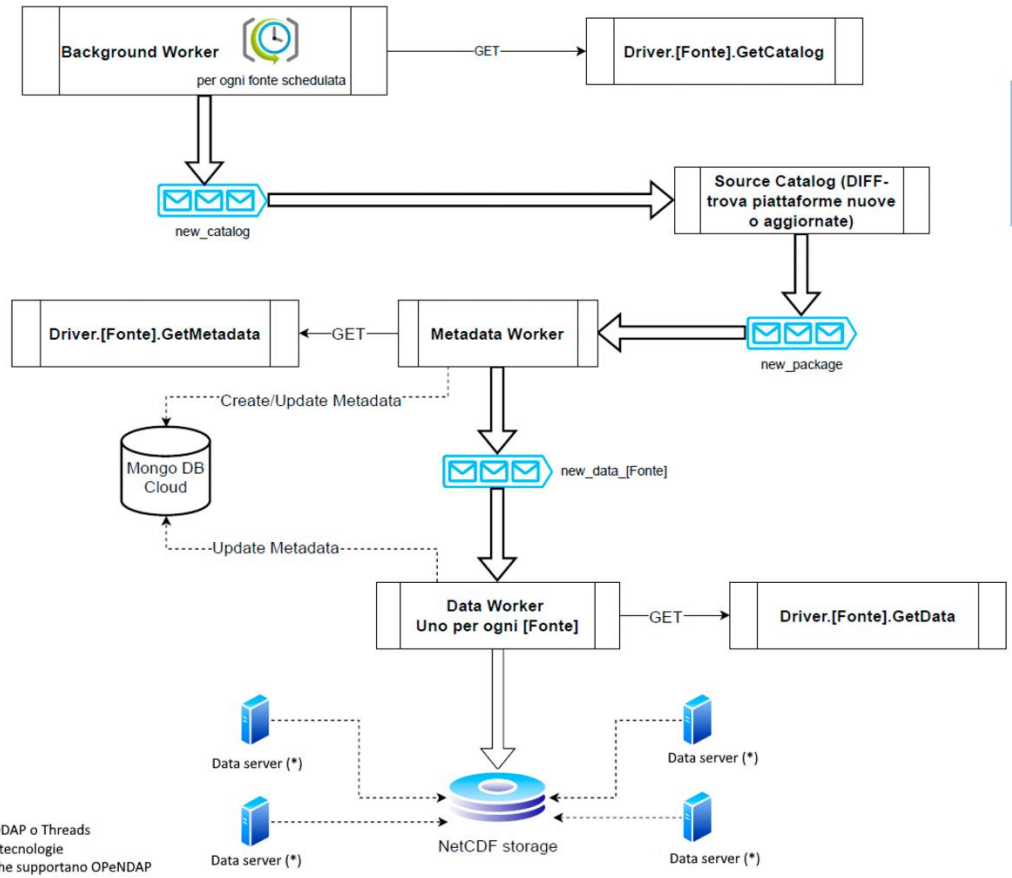
AnaEE EMPHASIS IBISBA

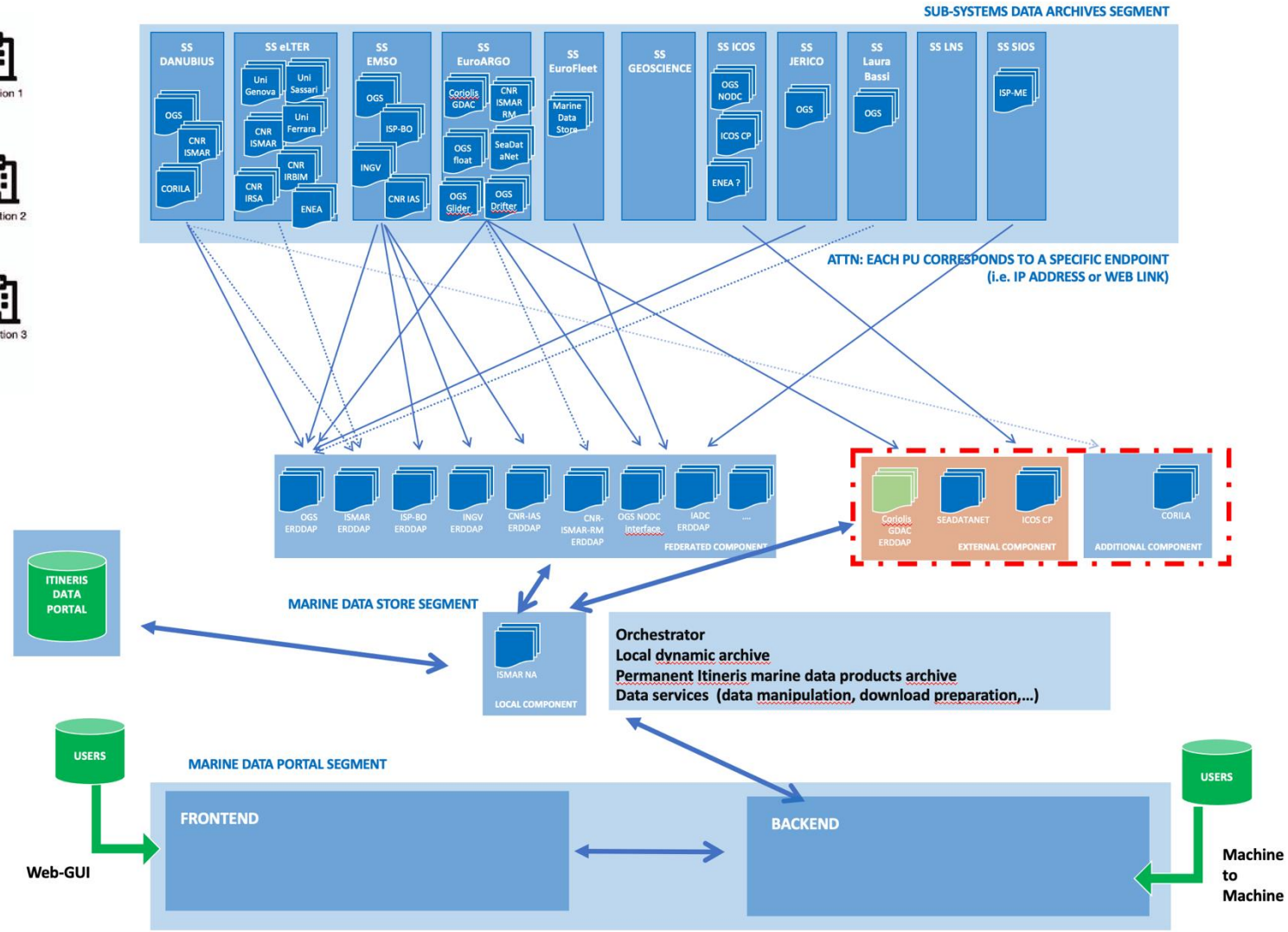
Physical Science RIs

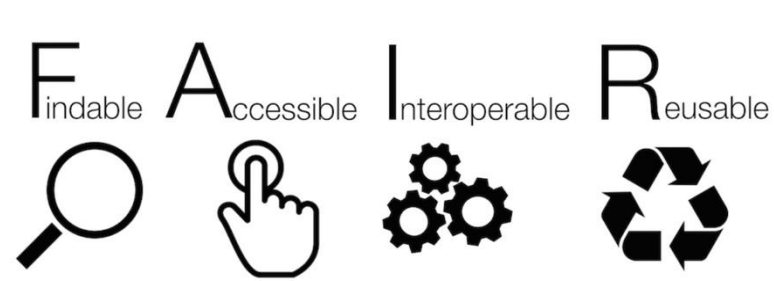
INFN LNS Istituto Nazionale di Fisica Nucleare Laboratori Nazionali del Sud GeoSciencesIR

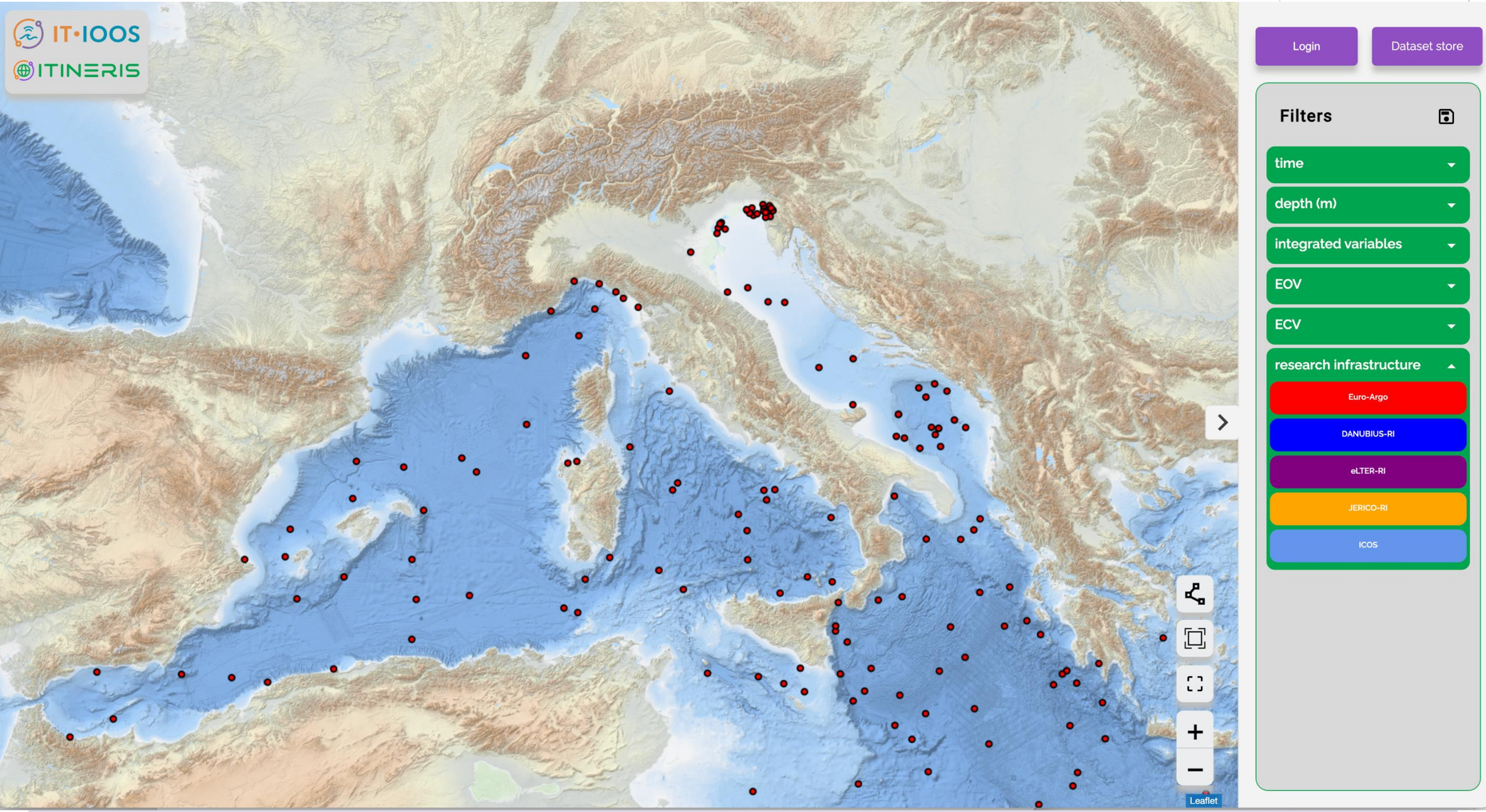
one portal for marine data

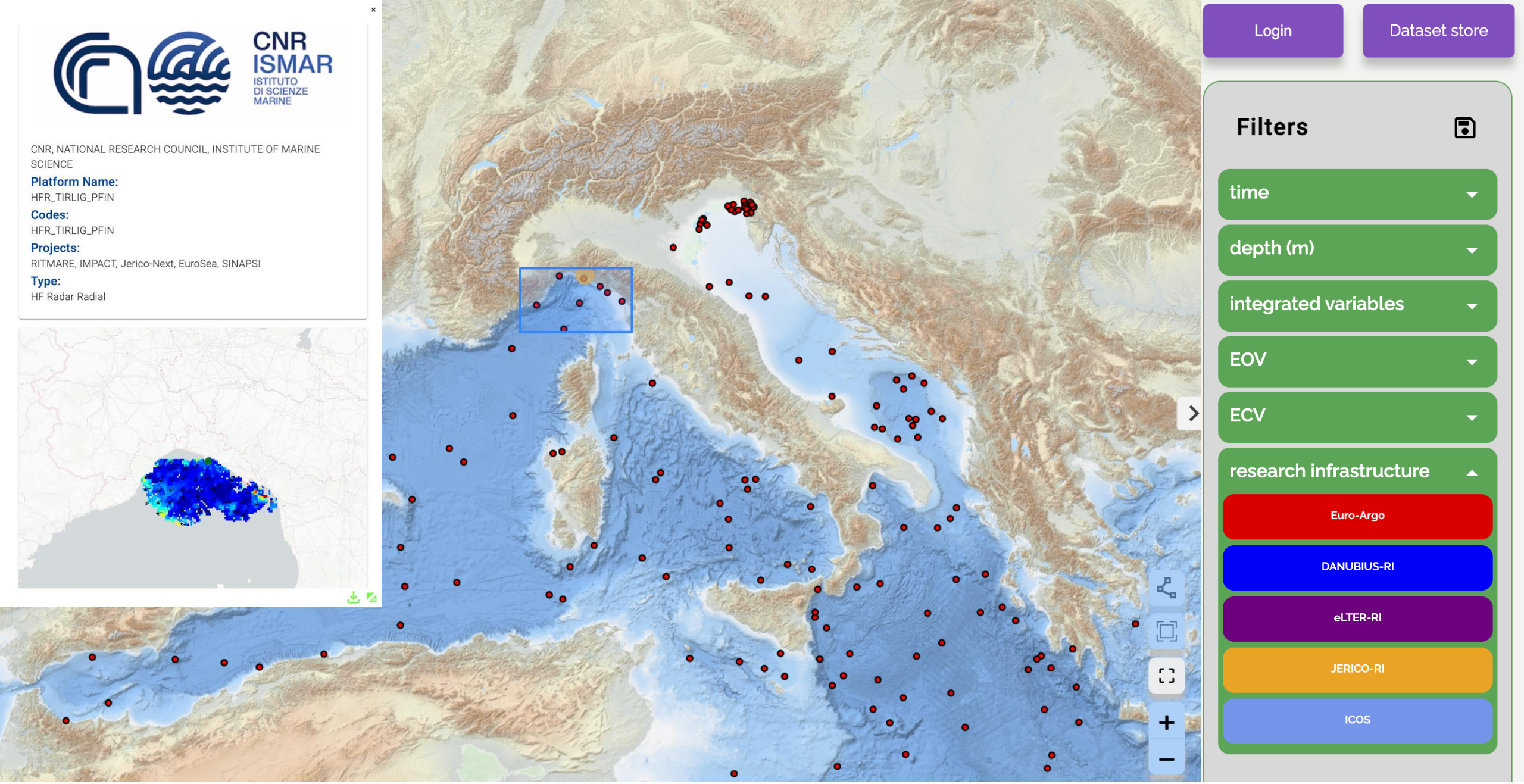

Institution 1
Institution 2
Institution 3
Researcher's computer
Web server
with centralised database
Centralised architecture
Institution 1
Institution 2
Institution 3
Researcher's computer
Web server
to query federated web servers
Federated architecture

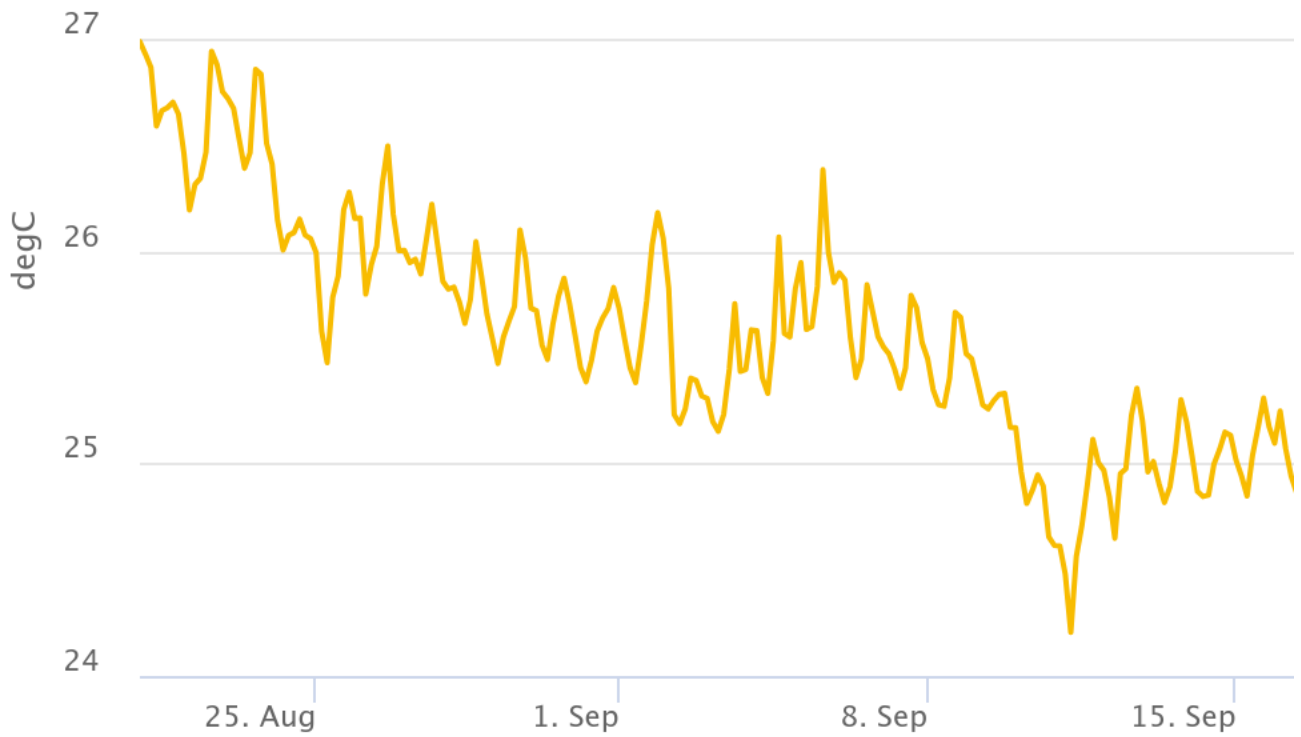

Background Worker
per ogni fonte schedulata
GET
Driver.[Fonte].GetCatalog
new_catalog
Source Catalog (DIFF-trova piattaforme nuove o aggiornate)
Driver.[Fonte].GetMetadata
GET
Metadata Worker
new_package
Create/Update Metadata
Mongo DB Cloud
new_data_[Fonte]
Update Metadata
Data Worker
Uno per ogni [Fonte]
GET
Driver.[Fonte].GetData
Data server (*)
Data server (*)
Data server (*)
Data server (*)
NetCDF storage
(*) ERDDAP o Threads
o altre tecnologie
simili che supportano OPeNDAP

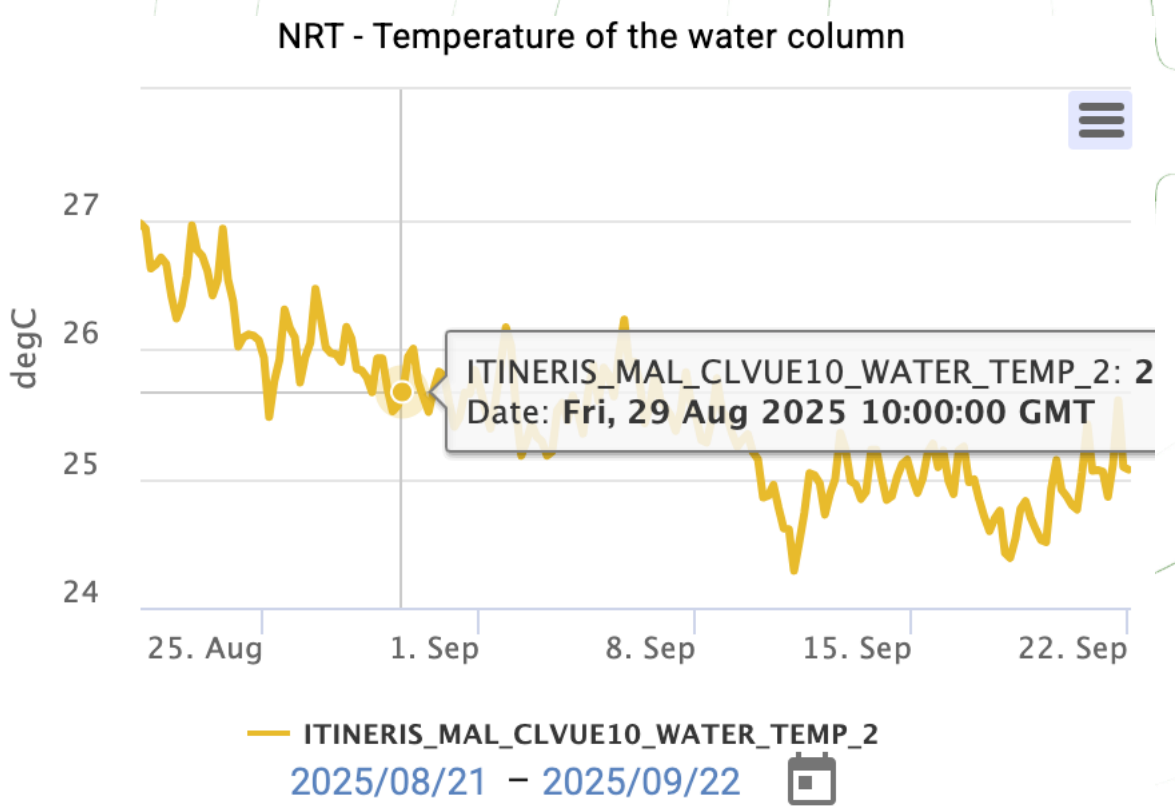

SUB-SYSTEMS DATA ARCHIVES SEGMENT
SS DANUBIUS
OGS
CNR ISMAR
CORILA
SS eLTER
Uni Genova
Uni Sassari
CNR ISMAR
Uni Ferrara
CNR IRBIM
CNR IRSA
ENEA
SS EMSO
OGS
ISP-BO
INGV
CNR IAS
SS EuroARGO
Coriolis GDAC
CNR ISMAR RM
OGS float
SeaDataNet
OGS Glider
OGS Drifter
SS EuroFleet
Marine Data Store
SS GEOSCIENCE
SS ICOS
OGS NODC
ICOS CP
ENEA ?
SS JERICO
OGS
SS Laura Bassi
OGS
SS LNS
SS SIOS
ISP-ME
ATTN: EACH PU CORRESPONDS TO A SPECIFIC ENDPOINT
(i.e. IP ADDRESS or WEB LINK)
OGS ERDDAP
ISMAR ERDDAP
ISP-BO ERDDAP
INGV ERDDAP
CNR-IAS ERDDAP
CNR-ISMAR-RM ERDDAP
OGS NODC Interface
IADC ERDDAP
FEDERATED COMPONENT
Coriolis GDAC ERDDAP
SEADATANET
ICOS CP
EXTERNAL COMPONENT
CORILA
ADDITIONAL COMPONENT
ITINERIS DATA PORTAL
MARINE DATA STORE SEGMENT
ISMAR NA
LOCAL COMPONENT
Orchestrator
Local dynamic archive
Permanent Itineris marine data products archive
Data services (data manipulation, download preparation,...)
USERS
MARINE DATA PORTAL SEGMENT
FRONTEND
BACKEND
USERS
Web-GUI
Machine to Machine

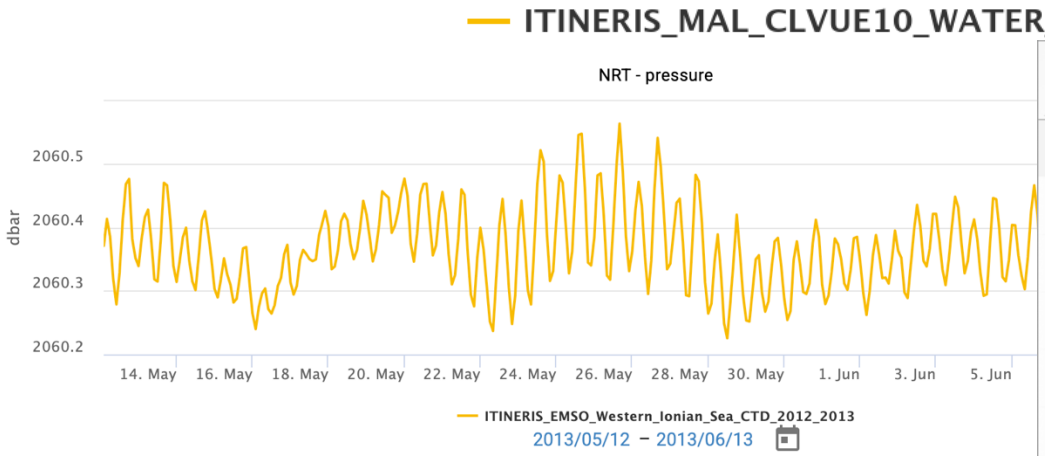

Findable
Accessible
Interoperable
Reusable


IT·IOOS
ITINERIS
Login
Dataset store
Filters
time
depth (m)
integrated variables
EOV
ECV
research infrastructure
Euro-Argo
DANUBIUS-RI
eLTER-RI
JERICO-RI
ICOS
Leaflet


CNR
ISMAR
ISTITUTO
DI SCIENZE
MARINE
CNR, NATIONAL RESEARCH COUNCIL, INSTITUTE OF MARINE SCIENCE
Platform Name:
HFR_TIRLIG_PFIN
Codes:
HFR_TIRLIG_PFIN
Projects:
RITMARE, IMPACT, Jerico-Next, EuroSea, SINAPSI
Type:
HF Radar Radial
Login
Dataset store
Filters
time
depth (m)
integrated variables
EOV
ECV
research infrastructure
Euro-Argo
DANUBIUS-RI
eLTER-RI
JERICO-RI
ICOS







	A	B
1	DateTime	ITINERIS_EMSO_Western_Ionian_Sea_CTD_2012_2013
2	2013-05-12T02:02:19Z	2060.364
3	2013-05-12T03:02:19Z	2060.379
4	2013-05-12T04:02:19Z	2060.415
5	2013-05-12T05:02:19Z	2060.413
6	2013-05-12T06:02:19Z	2060.388
7	2013-05-12T07:02:19Z	2060.385
8	2013-05-12T08:02:19Z	2060.333

Select Dataset

FILTERS

Clarivue10 at Malamocco inlet-seawater_temperature_datastream (MAL CLVUE10 WATER TEMP 2)
Temperature of the water column at -2 m depth datastream
ISMAR

Clarivue10 at Malamocco inlet-seawater_turbidity_datastream (MAL CLVUE10 WATER TURB 2)
Turbidity (Nephelometric Turbidity Units (NTU)) of seawater at Malamocco inlet -2 m depth datastream
ISMAR

Clarivue10 at San Nicolo inlet-seawater_temperature_datastream (SN CLVUE10 WATER TEMP 2)
Temperature of the water column at -2 m depth datastream
ISMAR

Clarivue10 at San Nicolo inlet-seawater_turbidity_datastream (SN CLVUE10 WATER TURB 2)
Turbidity (Nephelometric Turbidity Units (NTU)) of seawater at San Nicolo inlet -2 m depth datastream
ISMAR

Clarivue10 at Treporti inlet-seawater_temperature_datastream (TRP CLVUE WATER TEMP 2)
Temperature of the water column at -2 m depth datastream
ISMAR

Clarivue10 at Treporti inlet-seawater_turbidity_datastream (TRP CLVUE10 WATER TURB 2)
Turbidity (Nephelometric Tu
ISMAR

CTD data set from mooring S1 @ 1000 m (s1 ctd)
Timeseries recorded at the mooring S1, at nominal depth of 1000 m during different deployments. The scope of the measurements is to study the temporal variability of the thermohaline properties of the Norvegian Deep Water, and assosiated deep flow.
N/A

CURRISO profile, N
CURRISO profile, Near Real
Subsurface Currents
JERICO

CURRISO timeSeries, NRT in situ Observations (CURRISO TS)
CURRISO timeSeries, Near Real Time (NRT) in situ Observations
Subsurface Temperature
River Discharge
JERICO

DWRG1 timeSeries
DWRG1 timeSeries, Near Re
Sea State
JERICO

DWRG2 timeSeries, NRT in situ Observations (DWRG2 TS)
DWRG2 timeSeries, Near Real Time (NRT) in situ Observations

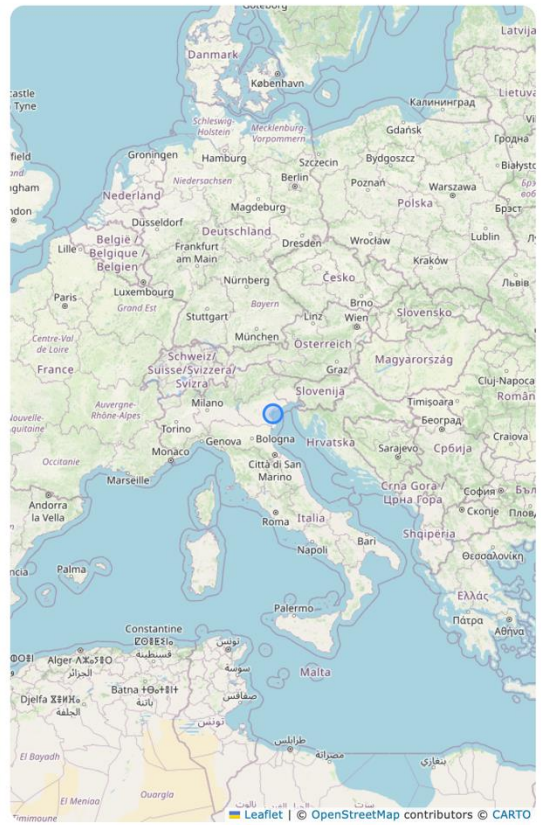
DWRG3 timeSeries
DWRG3 timeSeries, Near Re

Your selection

Clarivue10 at Malamocco inlet-seawater_turbidity_datastream (MAL CLVUE10 WATER TURB 2)

ITINERIS

ITINERIS **Download page**



Data

ITINERIS_MAL_CLVUE10_WATER_TURB_2

cdm_data_type: TimeSeries
creator_name: Istituto di Scienze Marine del Consiglio Nazionale delle Ricerche
creator_type: institution
creator_url: http://www.ismar.cnr.it
data_update: 2025-05-23T09:11:25.678962Z
dataset_id: ITINERIS_MAL_CLVUE10_WATER_TURB_2
depthrange: ;-1;;0;
geospatial_lat_max: 45.333646
geospatial_lat_min: 45.333646
geospatial_lat_units: degrees_north
geospatial_lon_max: 12.32811
geospatial_lon_min: 12.32811
geospatial_lon_units: degrees_east
geospatial_vertical_max: 0

Download

Date

Select date range

Parametrs

Select Parameters

New Parameters

resultTime
seawater_turbidity
resultQuality
depth

Download

Select Dataset

FILTERS

Clarivue10 at Malamocco inlet-seawater_temperature_datastream (MAL CLVUE10 WATER TEMP 2)
Temperature of the water column at -2 m depth datastream
ISMAR

Clarivue10 at Malamocco inlet-seawater_turbidity_datastream (MAL CLVUE10 WATER TURB 2)
Turbidity (Nephelometric Turbidity Units (NTU)) of seawater at Malamocco inlet -2 m depth datastream
ISMAR

Clarivue10 at San Nicolo inlet-seawater_temperature_datastream (SN CLVUE10 WATER TEMP 2)
Temperature of the water column a
ISMAR

Clarivue10 at San Nicolo inlet-seawater_turbidity_datastream (SN CLVUE10 WATER TURB 2)

Clarivue10 at Treporti in WATER TEMP 2)
Temperature of the water column a
ISMAR

CTD data set from moor
Timeseries recorded at the mooring the measurements is to study the te Water, and assosiated deep flow.
N/A

CURRISO timeSeries, NR
CURRISO timeSeries, Near Real Tim
Subsurface Temperature
JERICO

DWRG2 timeSeries, NRT
DWRG2 timeSeries, Near Real Time

Your selection
Clarivue10 at Malamocco inlet-seawater_turbidity_datastream (MAL CLVUE10 WATER TURB 2)

creator_type: institution
creator_url: http://www.ismar.cnr.it
data_update: 2025-05-23T09:11:25.678962Z

Select Parameters

Survey

Country*

Reference community

Are you part of the scientific community? Are you part of the private sector? Are you part of the education sector? Other (please specify)

Purpose of data usage

Research Commercial Other (please specify)

Cancel Confirm

Download

Leaflet | © OpenStreetMap contributors © CARTO

Server numbers

Startup Time: 03/13/2025 16:58:19 GMT+1

Response Succeeded (Since Startup): 698

Response Failed (Since Startup): 0

Active dataset

- ITINERIS_BB_567_SBE56
- ITINERIS_BB_584_SBE56
- ITINERIS_BB_591_SBE56
- ITINERIS_FF_700_SBE56
- ITINERIS_BB_505_ADCP
- ITINERIS_BB_595_CTD
- ITINERIS_FF_644_ADCP

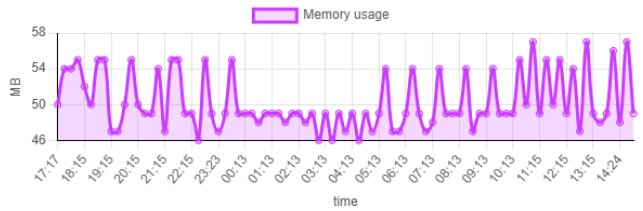
Inactive dataset

- ITINERIS_BB_591_SBE56

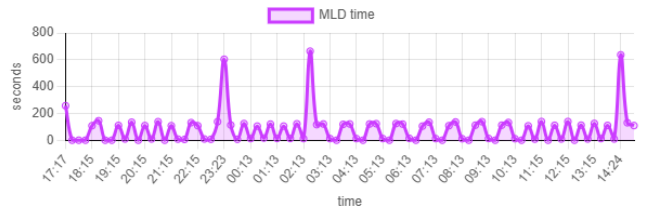
Successful requests

Failed requests

Memory usage



Major Load Datasets



ITINERIS

ITINERIS

Datasets

7

Last update 03/14/2025

Institutions

1

Last update 03/14/2025

0
Publishers

1
Sources

4
Variables

5
ECVs

03 14 2010
First dataset time

04 06 2024
Last dataset time

FAIRsharing.org

standards, databases, policies

ITINERIS

IT·IOOS it-ioos

doi 10.25504/FAIRsharing.12b144

Knowledgebase and repository

Database

re3data.org

REGISTRY OF RESEARCH DATA REPOSITORIES

Jisc

OpenDOAR

THANKS!

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