



<https://envri-hub.envri.eu/>

OSCARS Annual Meeting 10-12 March 2026

ENVRI @ OSCARS

ENVRI-Hub – The Competence Centre
of the ENVRI Community

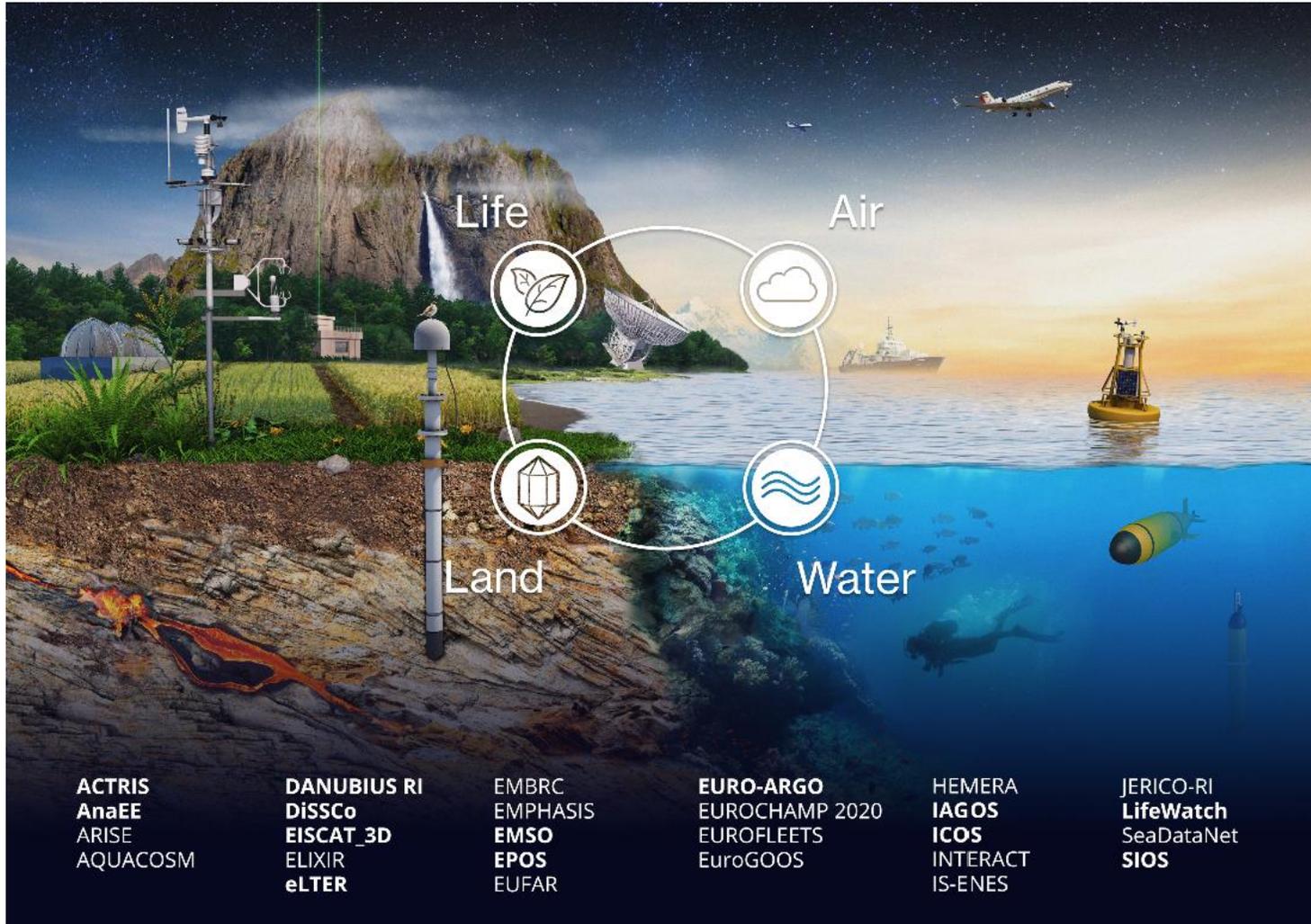


Funded by
the European Union

12 March 2026

The ENVRI Community

Environmental Research Infrastructures in Europe collaborating for 14 years



Life

Air

Land

Water

<p>ACTRIS AnaEE ARISE AQUACOSM</p>	<p>DANUBIUS RI DiSSCo EISCAT_3D ELIXIR eLTER</p>	<p>EMBRC EMPHASIS EMSO EPOS EUFAR</p>	<p>EURO-ARGO EUROCHAMP 2020 EUROFLEETS EuroGOOS</p>	<p>HEMERA IAGOS ICOS INTERACT IS-ENES</p>	<p>JERICO-RI LifeWatch SeaDataNet SIOS</p>
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Welcome to the data access and services hub of the European environmental research infrastructures

The Competence Center for the **ENVRI Community**

Search within the ENVRI-Hub website content:



Catalogue of Services

Explore the Research Infrastructures services that provide access to data, metadata, semantic assets, taxonomic information and more, and visualise them on a world map.



Knowledge Base

Search in a natural language the environmental research infrastructures web-exposed information (web pages, datasets, library and notebooks, web APIs and more).



Training Gateway

Access training resources developed by and for the ENVRI Community.



Catalogue of Data (beta)

The ENVRI FAIR Data Point Catalogue.



AI Environmental Expert

Search in a natural language the environmental research infrastructures web-exposed information (web pages, datasets, library and notebooks, web APIs and more).



Programmatic access to the ENVRI-Hub services (beta)

Access the ENVRI-Hub services Applicable Programming Interfaces (APIs) and libraries.



Innovation Hub

The central platform for driving Innovation in environmental research infrastructures



Dashboards for the State of the Environment

Under one easy-to-use interface, access crucial European environmental variables indicators.

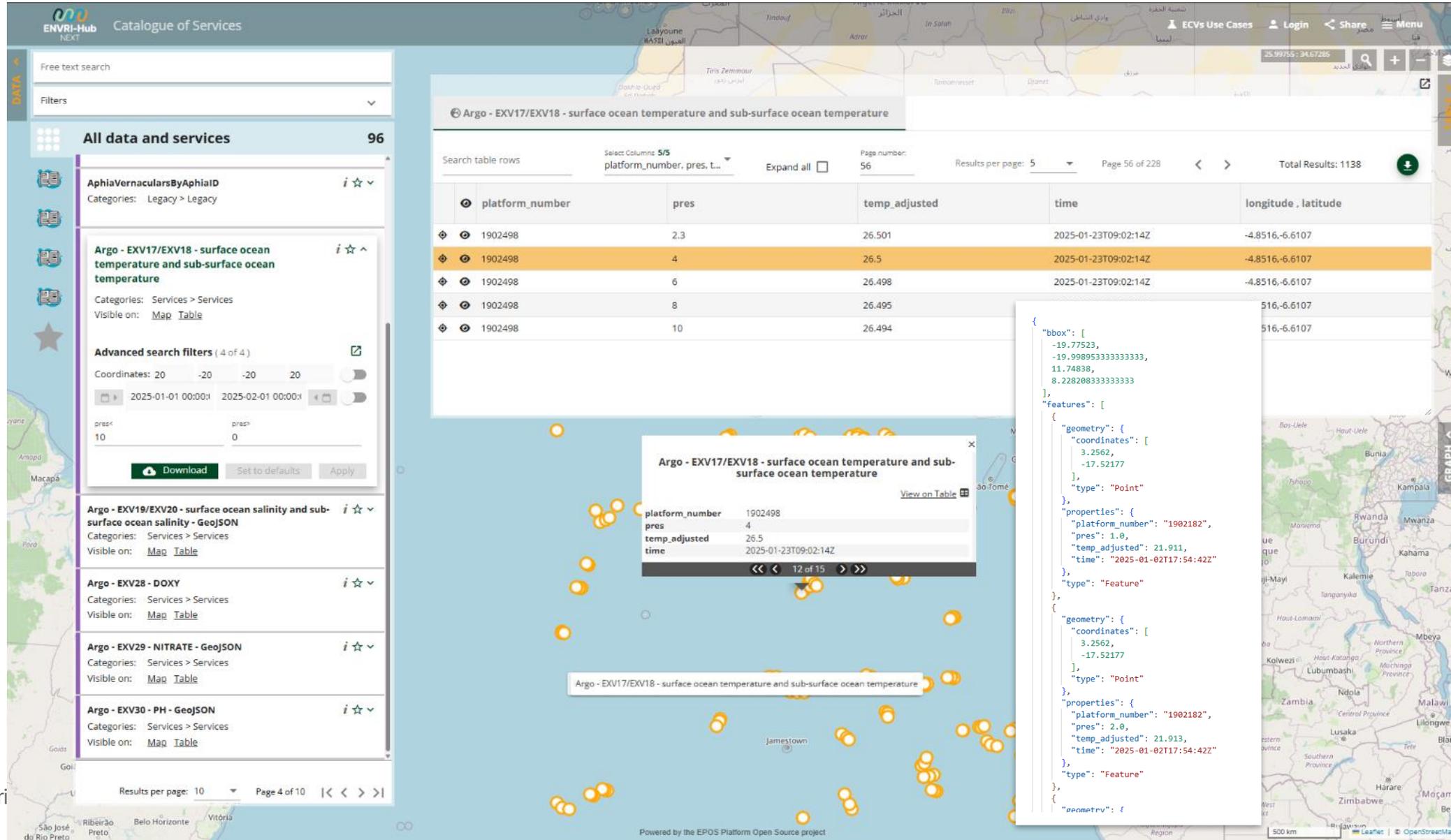


Science Demonstrators

Access to science demonstrators from the ENVRI community: interactive web services, example notebooks, and more.

Catalogue of services user interface

ENVRI Catalogue of Services

The screenshot displays the ENVRI Hub NEXT Catalogue of Services interface. On the left, a sidebar lists various data services, including 'Argo - EXV17/EXV18 - surface ocean temperature and sub-surface ocean temperature'. The main area shows a table of data for this service, with columns for platform number, pressure (pres), adjusted temperature (temp_adjusted), time, and longitude/latitude. A popup window provides detailed information for a specific data point, including its coordinates and properties. A code editor on the right shows the GeoJSON format for the data point.

platform_number	pres	temp_adjusted	time	longitude , latitude
1902498	2.3	26.501	2025-01-23T09:02:14Z	-4.8516,-6.6107
1902498	4	26.5	2025-01-23T09:02:14Z	-4.8516,-6.6107
1902498	6	26.498	2025-01-23T09:02:14Z	-4.8516,-6.6107
1902498	8	26.495	2025-01-23T09:02:14Z	-4.8516,-6.6107
1902498	10	26.494	2025-01-23T09:02:14Z	-4.8516,-6.6107

```

{
  "bbox": [
    -19.77523,
    -19.998953333333333,
    11.74838,
    8.228208333333333
  ],
  "features": [
    {
      "geometry": {
        "coordinates": [
          3.2562,
          -17.52177
        ],
        "type": "Point"
      },
      "properties": {
        "platform_number": "1902182",
        "pres": 1.0,
        "temp_adjusted": 21.911,
        "time": "2025-01-02T17:54:42Z"
      },
      "type": "Feature"
    },
    {
      "geometry": {
        "coordinates": [
          3.2562,
          -17.52177
        ],
        "type": "Point"
      },
      "properties": {
        "platform_number": "1902182",
        "pres": 2.0,
        "temp_adjusted": 21.913,
        "time": "2025-01-02T17:54:42Z"
      },
      "type": "Feature"
    }
  ]
}
    
```

ENVRI Catalogue of Data (FDP)



ENVRI Catalogue of Data

The tab "Data catalogs" lists catalogs of datasets and collections of datasets made available by some of the research infrastructures (RIs) that are part of ENVRI. The tab "Variables" contains the definition of variables included in the datasets listed under "Data catalogs". The definitions use the I-ADOPT vocabulary and link to external controlled vocabularies. The tab "Data services" lists services provided by some of the RIs that are part of ENVRI.

Data catalogs Variables Data services

Data catalogs

+ Create

ACTRIS data

ACTRIS data products catalog

Issued 24-11-2024 Modified 24-11-2024

Argo marine data

All data collected by Argo floats

InSitu Ocean 720a52b0-e991-4b0c-b2d1-c6863918186d

Issued 25-11-2024 Modified 20-12-2024

EPOS Sea level

18 21 f41aadd0-dab-42d2-9713-d68e972263f4

Issued 10-12-2024 Modified 10-07-2025

ICOS data

ICOS data products catalog

6a43782b-13da-40a0-a65c-63480a940231 9150a404-40eb-41ae-b835-4077b989713f
 c0b74231-0790-469b-9886-f8ff15eed5b atmosphere
 8b61fc50-1c1d-4c58-8934-7e3d236b7ef7 ecosystem

Issued 24-11-2024 Modified 31-01-2025

Conforms to

- [FAIR Data Point Profile](#)

Metadata modified
10-07-2025

Metadata issued
24-11-2024

Endpoint description
ENVRI FDP Demo

Endpoint url
[ENVRI Catalogue of Data](#)

Version
1.0

Language
English

License
cc0

Rights
public

Start date
24-11-2024

Ui language
English

Metadata identifier
identifier

RDF metadata for machines
ttl rdf+xml icon-ld

Programmatic access to the ENVRI-Hub services



use your own VRE
or
check our our test VRE

<https://envri-hub.envri.eu/>

```
plot_fi X gantt_X create X co2_GX contri X ICOSs X noteb ● era5.ir X ICOS_ X alex@ X atmol X doi2h1 X test2.i X emissi X
Python 3 (ipykernel)

[14]: 1 #!pip install matplotlib cartopy numpy pandas

Proof of concept notebook of notebooks
This notebook shows the PoC python library (ehnp) in action.

[5]: 1 import ecv_data_access.functions as functions
2 import matplotlib.pyplot as plt
3 import cartopy.crs as ccrs
4 import cartopy.feature as cfeature
5 import numpy as np
6 import pandas as pd

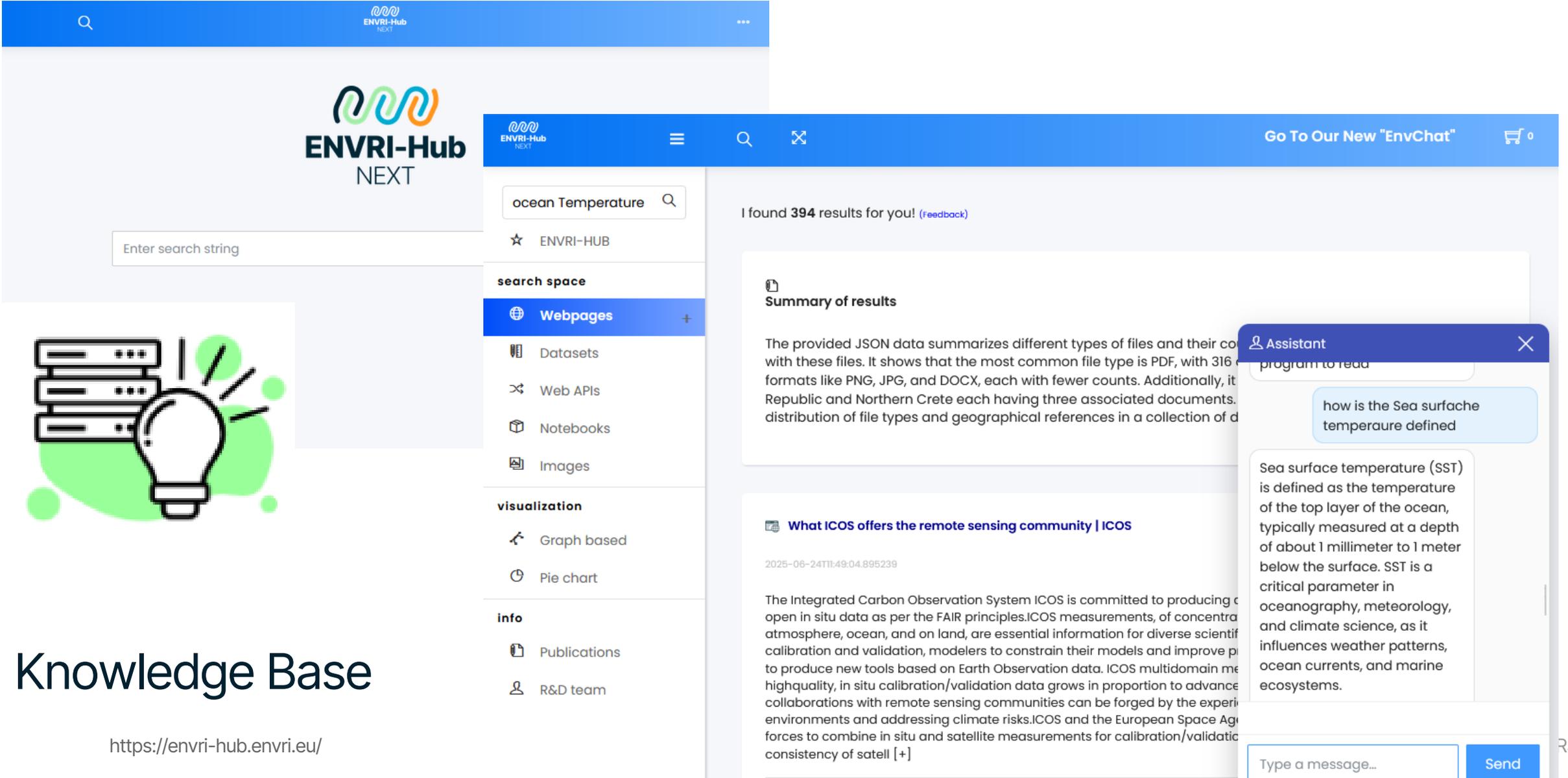
[6]: 1 ## Argo & SDN
2 #EXV017 Sea-surface temperature (SDN / Euro-Argo) -->
3 #EXV018 Subsurface temperature (SDN / Euro-Argo) -->
4 #EXV019 Sea Surface Salinity (SDN / Euro-Argo) -->
5 #EXV020 Subsurface Salinity (SDN / Euro-Argo) -->
6 #EXV028 Oxygen (SDN / Euro-Argo) -->
7 #EXV029 Nutrients (SDN / Euro-Argo) -->
8 #EXV033 Ocean color (SDN / Euro-Argo) -->
9
10 ## ACTRIS & SDN
11 #EXV011 Cloud properties (ACTRIS / SDN) ?
12 #EXV016 Aerosol properties (ACTRIS / SDN) -->
13
14 ## ICOS & SDN
15 #EXV013 Carbon dioxide, methane and other greenhouse gases (ICOS / SDN) -->
16
17 ## EPOS & SDN
18 #EXV023 Sea Level (SDN / EPOS) -
19
20 ## Individual RIs
21 #EXV014 Ozone ?
22 #EXV015 Precursors (supporting the aerosol and ozone ECVs) (IAGOS) -->
23 #EXV022 Subsurface Currents (Euro-Argo) -->
24 #EXV030 Ocean Inorganic Carbon (SDN) -
25 #EXV039 Soil moisture (ICOS) -

[7]: 1 exv = "EXV015"
2 region=(10, 20, 45, 65)
3 time=("2020-01-01", "2020-01-10")
4 samplingheight=(0, 100)

[8]: 1 data = functions.get_data(
2     exv_variable=exv,
3     region=region,
4     time=time,
5     samplingheight=samplingheight
6 )

[2025-09-05 12:30:47] [seadatanet.py:get_data] Fetching data from SeaDataNet CDI Beacon API...
[2025-09-05 12:30:47] [seadatanet.py:filter_unavailable_columns] Filtering available columns...
[2025-09-05 12:30:49] [seadatanet.py:get_data] Variables: []
[2025-09-05 12:30:49] [seadatanet.py:get_data] No valid variables found. Please check the provided variables.
[2025-09-05 12:30:50] [argo.py:get_data] Fetching data from Argo using Argopy...
[2025-09-05 12:30:50] [argo.py:get_data] No variables
Enter your username: alex.vermeulen@nateko.lu.se
Enter your password: .....
[2025-09-05 12:31:47] [icos.py:get_data] Fetching data from ICOS...
[2025-09-05 12:31:47] [icos.py:exec_icos_sparql_query] SPARQL query status code: 200
[2025-09-05 12:31:47] [icos.py:get_data] Found 0 data objects.
[2025-09-05 12:31:47] [icos.py:get_data] No data objects found for the given query parameters.
[2025-09-05 12:31:48] [iagos.py:get_data] Fetching data from IAGOS...
CO
[2025-09-05 12:31:57] [iagos.py:download_to_file] Downloading https://services.iagos-data.fr/prod/v2.0/13/loadNetcdfFile?fileId=https://doi.org/10.25326/6
```

EV's from LLMs going forward



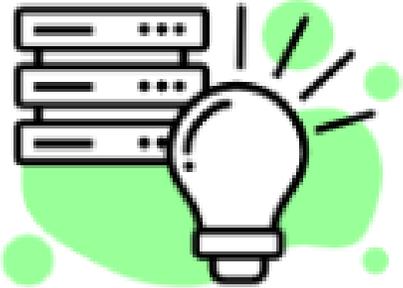
The screenshot displays the ENVRI-Hub NEXT search interface. The search bar contains the query "ocean Temperature". The search results page shows "I found 394 results for you!". A summary of results is provided, stating: "The provided JSON data summarizes different types of files and their counts with these files. It shows that the most common file type is PDF, with 316 documents in formats like PNG, JPG, and DOCX, each with fewer counts. Additionally, it lists the Republic and Northern Crete each having three associated documents. It also includes a geographical distribution of file types and geographical references in a collection of documents." Below the summary, a result titled "What ICOS offers the remote sensing community | ICOS" is visible, dated "2025-06-24T11:49:04.895239". The text of this result begins: "The Integrated Carbon Observation System ICOS is committed to producing open in situ data as per the FAIR principles. ICOS measurements, of concentration in the atmosphere, ocean, and on land, are essential information for diverse scientific communities to produce new tools based on Earth Observation data. ICOS multidomain measurements of high quality, in situ calibration/validation data grows in proportion to advanced collaborations with remote sensing communities can be forged by the experience in these environments and addressing climate risks. ICOS and the European Space Agency forces to combine in situ and satellite measurements for calibration/validation consistency of satellite [+]"

An AI Assistant chat window is overlaid on the right side of the page. The chat header is "Assistant" with a close button. The user's message is: "how is the Sea surface temperature defined". The assistant's response is: "Sea surface temperature (SST) is defined as the temperature of the top layer of the ocean, typically measured at a depth of about 1 millimeter to 1 meter below the surface. SST is a critical parameter in oceanography, meteorology, and climate science, as it influences weather patterns, ocean currents, and marine ecosystems." The chat input field contains "Type a message..." and a "Send" button.

Knowledge Base

<https://envri-hub.envri.eu/>

Try something more fancy will it work?



AI Environmental expert

<https://envri-hub.envri.eu/>

Environmental Expert

Ask any question about the Environment and Earth Science



Write a python program to plot the sea surface temperature of the atlantic ocean using argopy



To plot the sea surface temperature (SST) of the Atlantic Ocean using the argopy library in Python, follow these steps:

1. Install the required packages (argopy, xarray, matplotlib, cartopy).
2. Use argopy to fetch data from the Atlantic region.
3. Select data for sea surface temperature.
4. Plot the data.

Here's a complete example:

```
import matplotlib.pyplot as plt
import cartopy.crs as ccrs
import xarray as xr
from argopy import DataFetcher

# Define the Atlantic Ocean region (lat/lon bounds)
atlantic bounds = [
```

Write a python program to plot the sea surface temperature of the atlantic ocean using argopy





Thank you

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