The EOSC Future project is co-funded by the European Union Horizon Programme call INFRAEOSC-03-2020, Grant Agreement 101017536.
The Environmental Dashboard in a nutshell

Motivation

- Information on the state of the environment (for public, policy makers)
- Switchboard to applications to explore data and models (for scientists)
- Understand the impacts of a changing climate on biodiversity, environment and societies
- Improved understanding of our universe

Easily understandable environmental indicators
The Environmental Dashboard in a nutshell

**General Workflow**

1. Develop and launch a Dashboard of Environmental Indicators
2. Connect the analytical framework to the EOSC Platform
3. Demonstrate the benefits and potentials of web-based science

- Set up analytical workflows
- Integrate workflow outputs
- Mobilise and empower larger communities
  - Researchers
  - Potential data providers

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- [EOSCfuture.eu](https://eoscfuture.eu)
- [@EOSCFuture](https://twitter.com/EOSCFuture)
- [EOSCFuture](https://www.linkedin.com/company/eoscfuture)
The Environmental Dashboard in a nutshell

Our Partners
Analytical workflow - SeaDataNet

EOV ➔ Semantic Broker ➔ SeaDataNet API

NERC Vocabulary

SeaDataNet CDI Database

Co-located Display Map Viewer

Unit conversion

Algorithm Jupyter Notebook

1 Uniform Dataset

SPARQL Queries ➔ Dynamically I-ADOPT

>2.8M datasets

1. Time period
2. Depth range
3. Bounding box
4. Parameter names

NERC Vocabulary

DOXMZZXX
DOXYYPE01
DOKGWITX

Essential Ocean Variables:
- Oxygen
- Temperature
- pH

There is a similar type of workflow for Euro-Argo established that attributes extra data to the map viewer and ocean indicators.

When TRL7 Onboarded as service to EOSC

EOC Cloud Computing

WMED seasonal Temperature mean (0-10m)

Amount of observations (g)
The Environmental Dashboard

EOSC as enabler
The Environmental Dashboard

Impact

**General Public** – Offered a dissemination platform to showcase the usefulness of the scientific observations to Climate Change

**Scientists** - Get access to data and services from ENVRIs

**EOSC platform** - used for integration of data and scientific workflows to support scientific products relevant to societal needs

Engage scientists from research and industry, addressing environmental processes – as providers, co-creators, end-users

**Strengthen the links with the ENVRI communities**

Increase visibility of elaborated products provided by scientific communities

Results relevant to **the Sustainable Development Goals** of the UN and the European Green Deal
The Environmental Dashboard

Technical requirements

• Implementation of the Dashboard  
  b. Responsive front-end -> available [here](https://env-dashboard.eoscfuture.eu)  
• Source code on git-based repository -> available [here](https://gitlab.emso.eu/eoscfuture)  
• Deployment and operations of the IT infrastructure using industry best practices and EOSC services  
  a. High-availability (redundancy for failover and business continuity)  
  b. Deployment of independent services via containers  

Integration with the EOSC

- Onboarding to EOSC Marketplace
- EOSC AAI Federation
- EGI Cloud Compute
- Service Monitoring
- Helpdesk

Achieved
In Progress
The Environmental Dashboard

EOSC Services

Dashboard UI

Dashboard API

Dashboard Backend

Endpoints

Research infrastructures and data providers
The Environmental Dashboard

Frame management:
Add, Create and Upload (Yaml configuration)
Demonstration:
Dashboard for the State of the Environment

EOSC Symposium – Prague 14-17 November, 2022

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DEMO
Global ocean mapping of in-situ measurements of Oxygen, Temperature, Nutrients and pH

Western Mediterranean Annual Temperature Plot


Amount of observations [\#]

Temperature [\degree C]

Annual mean
Global ocean mapping of in-situ measurements of Oxygen, Temperature, Nutrients and pH
Global ocean mapping of in-situ measurements of Oxygen, Temperature, Nutrients and pH

Western Mediterranean Annual Temperature Plot
Global ocean mapping of in-situ measurements of Oxygen, Temperature, Nutrients and pH.
Global ocean mapping of in-situ measurements of Oxygen, Temperature, Nutrients and pH

DESCRIPTION

The ocean component consists of a Map Viewer that displays in-situ measurements of the Essential Ocean Variables (EOVs) Temperature, Oxygen, Nutrients and pH. These measurements are retrieved from the Blue Data Infrastructures (BDIs) Euro-Argo and SeaDataNet DDI using tailor-made APIs for fast sub-setting. The viewer includes a user interface designed for citizen scientists with the possibility to interact with the data by using sliders for time and depth. Background layers from CMEMS are used to compare the in-situ measurements with modelling and satellite products. The in-situ data available for different locations, depths and time periods are used to create scientifically justified aggregated values that feed the dynamic trend indicators at the 1st level of the dashboard, with some configuration options. For the ocean component, the environmental dashboard (level 1) hence includes a number of ocean trend indicators for the chosen EOVs, providing a trend in time for designated areas. While users can then click on such an indicator guiding them to the Map Viewer (level 2) to browse deeper into the data and details facilitating the trends.

LICENCE

CCBY4 Data Licence
Sign in to your account

Username or email
admin

Password
******

Recall me

Forgot Password?

Sign In

Or sign in with
EOCS Login

New user?
Register

DEMO
DEMO
DEMO
DEMO
DEMO
DEMO
1. Download existing YAML file

2. Upload the new YAML file

YAML FILE

```yaml
# Mandatory fields

## A title to describe the frame.

title: Example of frame

# Name of the organization that provides the information of the frame

data_provider_name: Name of the data provider

# Abbreviation of the provider name

data_provider_abbreviation: NDP

# Logo of the provider

data_provider_logo: URL to the logo (in https)

# Website to redirect when users click on the logo

data_provider_url: URL to the web site

# Provide the URL to access an HTML webpage which content is going to be displayed

parameters:

- name: Name of the parameter
  value: URL to the web page or endpoint

# Optional fields

# Researchers, developers and technical staff involved

authors:

- name: Name of the author
  surname: Surname of the author
  email: Email of the author
```
Thank you for your attention!

Visit the EOSC Environmental Dashboard!
See the impacts of the changing climate!

An interactive environment that gives clear and easy access to the ENVRIs.

Climate change is a scientific fact and science means knowledge, awareness and understanding!