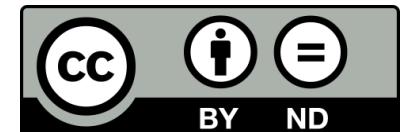


EOSC FUTURE SP ENVRI Dashboard for the State of the Environment

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EGI2022

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Science projects EOSC Future

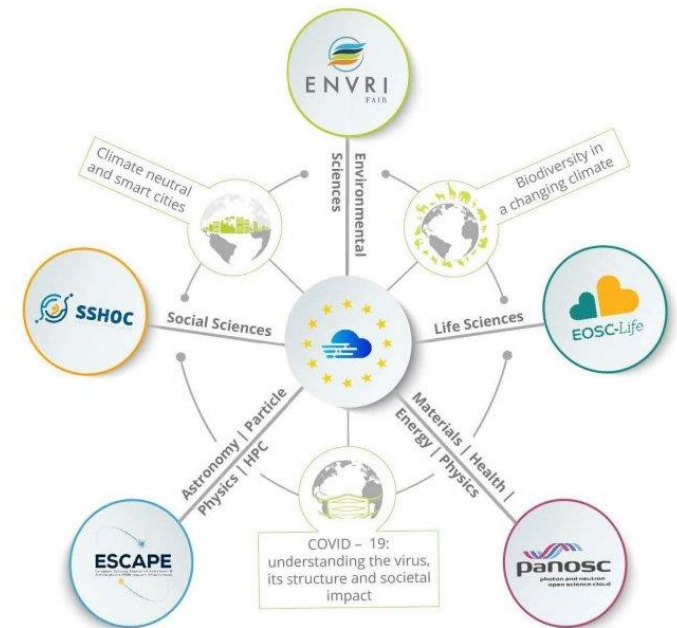
Scientific impact:

- *Climate change impact on biodiversity, societies and environment*
- *Interdisciplinary analyses with innovative algorithms and methods*

Technical impact:

- *Cross-Europe AAI, storage, computing, simulation, archiving and analysis services*
- *Open data and virtual research space for open science*

Science clusters



A decorative orange geometric pattern consisting of interconnected lines and dots, resembling a stylized network or a portion of a larger structure.

ENVRI-FAIR Science Cluster

1. [Dashboard state of the Environment](#)
2. Climate change impact on biodiversity and ecosystems – Invasive species

Dashboard state of the Environment

Environmental data and services

- Dashboard includes real-time indicators
 - State of the environment
 - Different environmental disciplines
- Front-end of the ENVRI-hub
 - EOSC integration
 - Mobilise larger community



ACTRIS
AnaEE
ARISE
AQUACOSM

DANUBIUS
DISSCO
EISCAT_3D
ELIXIR
eLTER

EMBRC
EMPHASIS
EMSO
EPOS
EUFAR

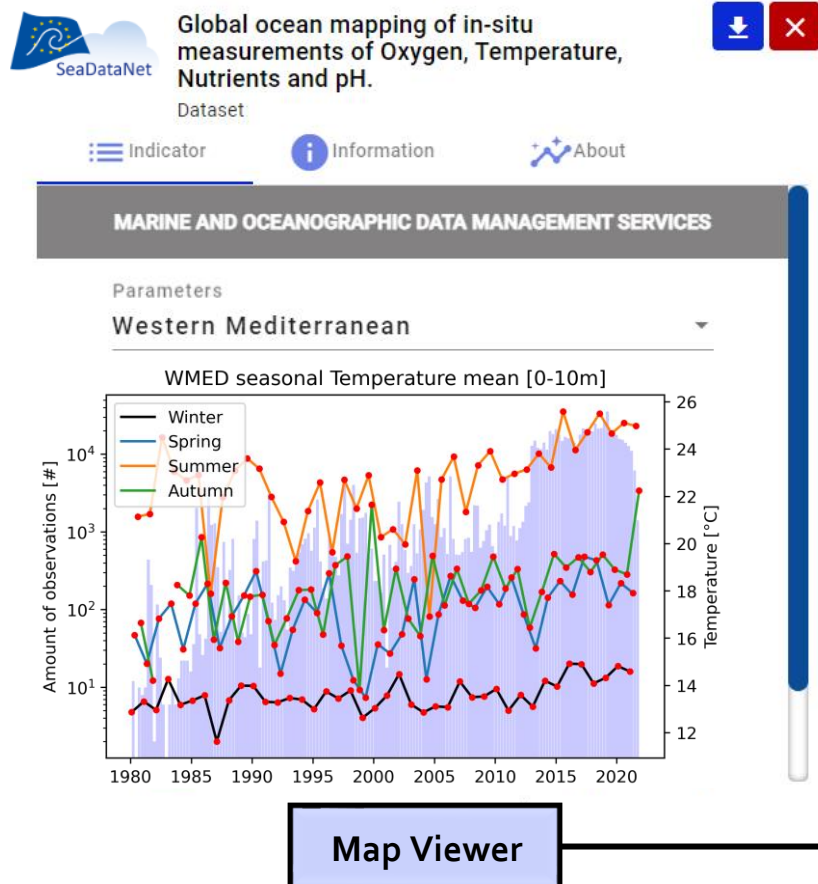
EURO-ARGO
EUROCHAMP 2020
EUROFLEETS
EuroGOOS

HEMERA
IAGOS
ICOS
INTERACT
IS-ENES

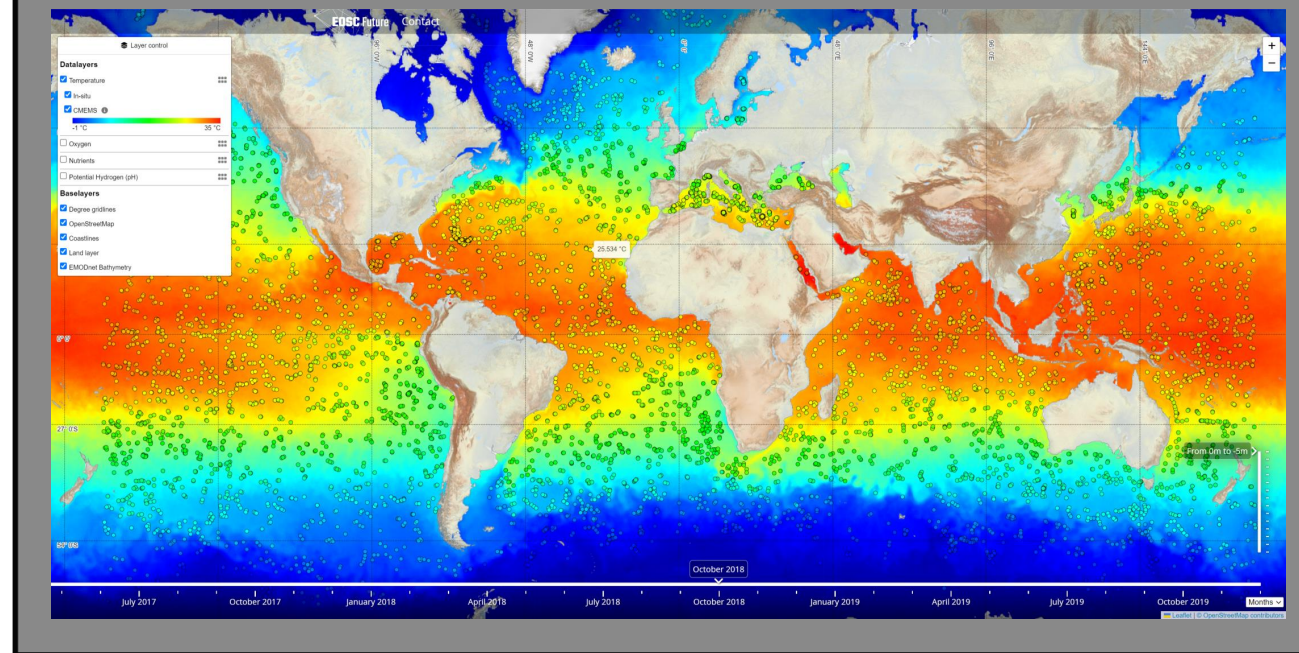
JERICO-RI
LifeWatch
SEADATANET
SIOS

Ocean component

Level 1: Ocean indicators

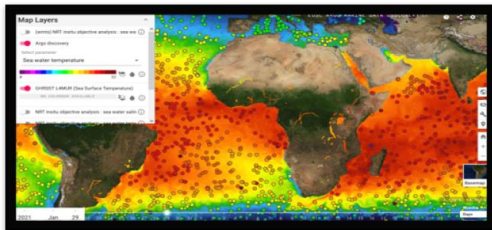


Level 2: Co-location data values as-is Map Viewer

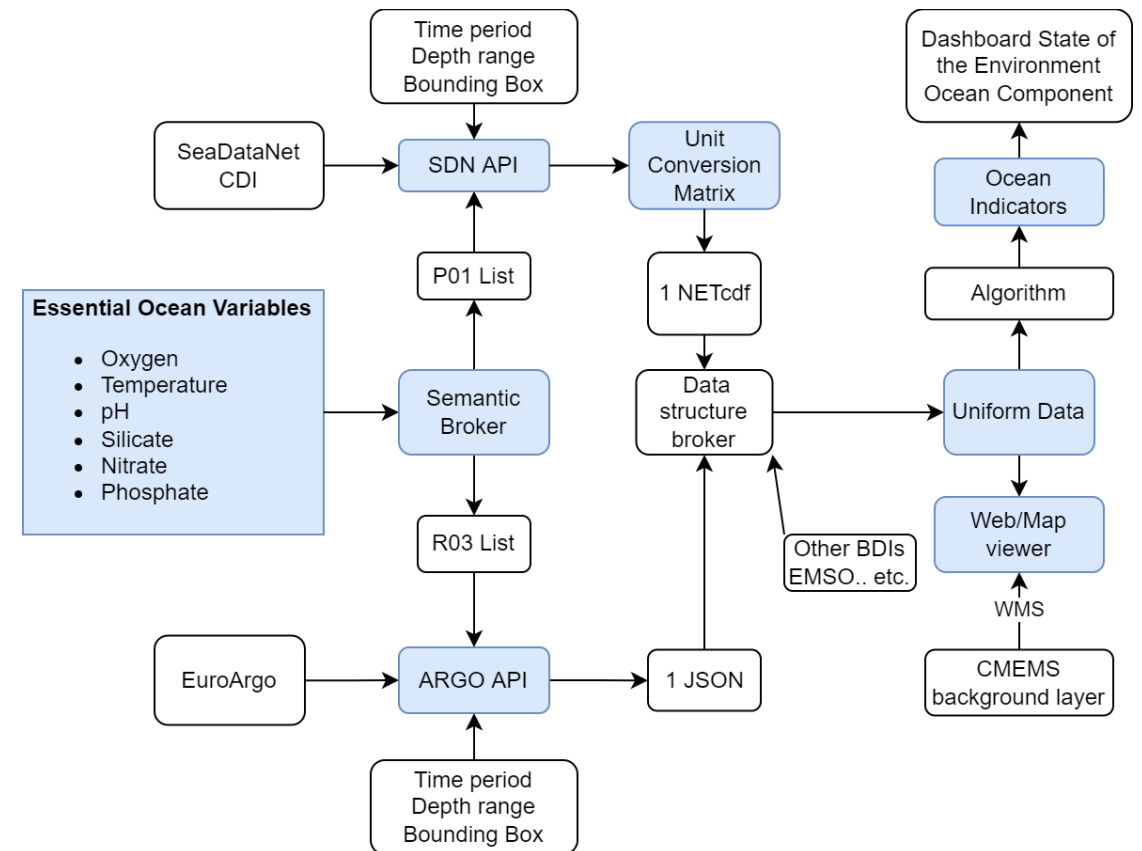
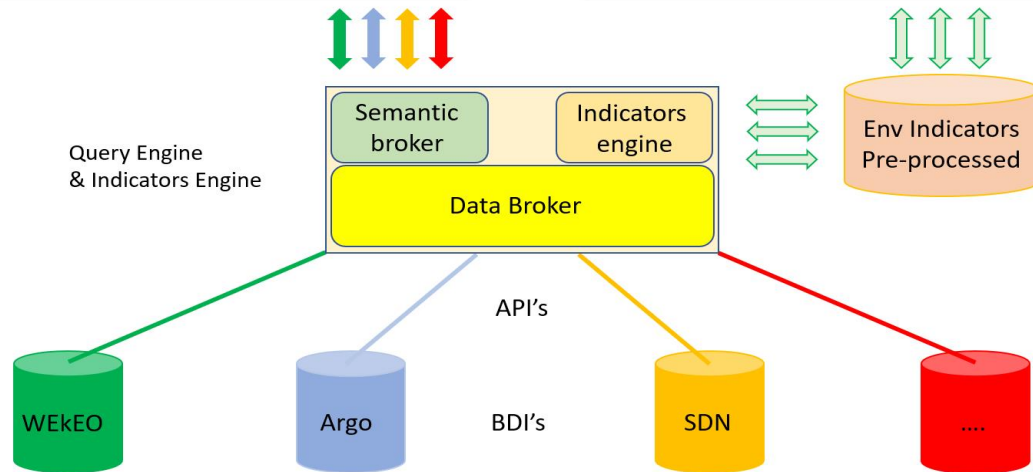
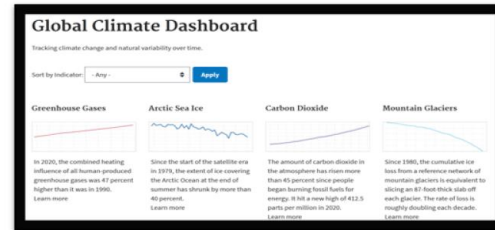


Ocean component

Phase 1: Co-location data values as-is Map-Viewer



Phase 2: Trend indicators



Semantic broker

SPARQL Queries for each Essential Ocean Variable (EOV)

For example: *Oxygen*

Input

Output

```
1 PREFIX skos: <http://www.w3.org/2004/02/skos/core#>
2 PREFIX pav: <http://purl.org/pav/>
3 PREFIX owl: <http://www.w3.org/2002/07/owl#>
4
5 select ?dt ?P01notation ?prefLabel (group_concat(?R03notation;separator=",") as ?R03) (group_concat(?P09notation;separator=",") as ?P09) (group_concat(?P02notation;separator=",") as ?P02) where
6 {
7   <http://vocab.nerc.ac.uk/collection/A05/current/EV_OXY/>
8   <https://w3id.org/iadopt/ont#hasObjectOfInterest> ?ooi;
9   <https://w3id.org/iadopt/ont#hasProperty> ?prop.
10  optional{<http://vocab.nerc.ac.uk/collection/A05/current/EV_OXY/> <https://w3id.org/iadopt/ont#hasMatrix>
11    ?mat .}
12
13  optional{<http://vocab.nerc.ac.uk/collection/A05/current/EV_OXY/> <https://w3id.org/iadopt/ont#hasConstraint> ?cons .}
14
15  <http://vocab.nerc.ac.uk/collection/P01/current/> skos:member ?dt .
16  ?dt owl:deprecated ?depr . FILTER((str(?depr)="false"))
17  ?dt <https://w3id.org/iadopt/ont#hasObjectOfInterest> ?ooi;
18  <https://w3id.org/iadopt/ont#hasProperty> ?prop.
19  optional{?dt <https://w3id.org/iadopt/ont#hasMatrix>
20    ?mat .}
21
22  optional{?dt <https://w3id.org/iadopt/ont#hasConstraint> ?cons .}
23
24  ?dt skos:prefLabel ?prefLabel .
25  optional { ?dt ?rel3 ?v3 . filter(regex(str(?v3),'R03/current/')) . ?v3 skos:notation ?R03notation .}
26  optional { ?dt ?rel4 ?v4 . filter(regex(str(?v4),'P09/current/')) . ?v4 skos:notation ?P09notation .}
27  optional { ?dt ?rel5 ?v5 . filter(regex(str(?v5),'P02/current/')) . ?v5 skos:notation ?P02notation .}
28
29  ?dt skos:prefLabel ?prefLabel .FILTER(langMatches(lang(?prefLabel), "en"))
30  ?dt skos:notation ?P01notation .
31
32 } group by ?dt ?P01notation ?prefLabel ?P09 ?P02 ?R03
33
```

SDN CDI

P01notation

SDN:P01::DOXMZZXX

SDN:P01::DOXYPE01

SDN:P01::DOKGWITX

SDN:P01::DOXYCZ01

SDN:P01::DOXYUCKG

SDN:P01::DOXYSC02

SDN:P01::DOXYSE01

SDN:P01::DOXYOP01

SDN:P01::DOXYSU01

SDN:P01::DOXYSCKG

SDN:P01::OXYSMOD1

SDN:P01::DOXYPR02

SDN:P01::DOXYUZ01

SDN:P01::DOXYWITX

SDN:P01::DOXYAOP

SDN:P01::DOXYSU02

SDN:P01::DOXYPR01

SDN:P01::DOXYSE02

SDN:P01::DOXYSC01

SDN:P01::DOXYZZXX

SDN:P01::DOXYZZ01

SDN:P01::DOXYUZ02

ARGO

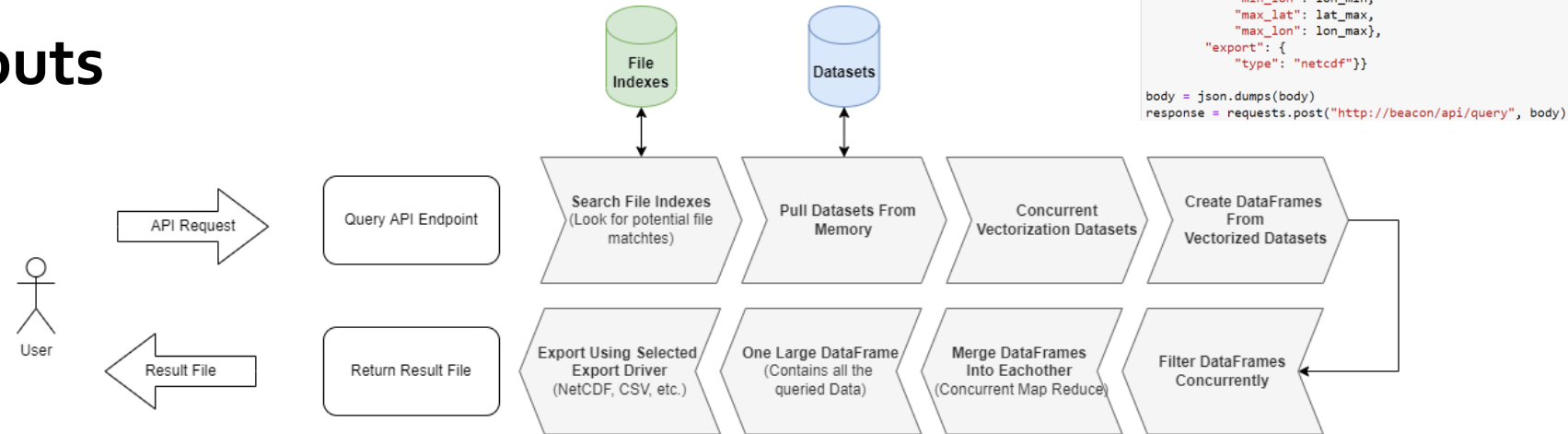
R03

SDN:R03::DOXY

APIs

SeaDataNet API inputs

- Parameter (Po1)
- Bounding box
- Time period
- Depth range



Argo API inputs

- Parameter (Ro3)
- Bounding box
- Time period
- Upper depth

Unit conversions

Unit conversions required for SeaDataNet API

- Measurements performed in various units

Preferred units

Temperature	Oxygen	Phosphate	Silicate	Nitrate	pH
[°C]	[mmol/m3]	[mmol/m3]	[mmol/m3]	[mmol/m3]	[-]

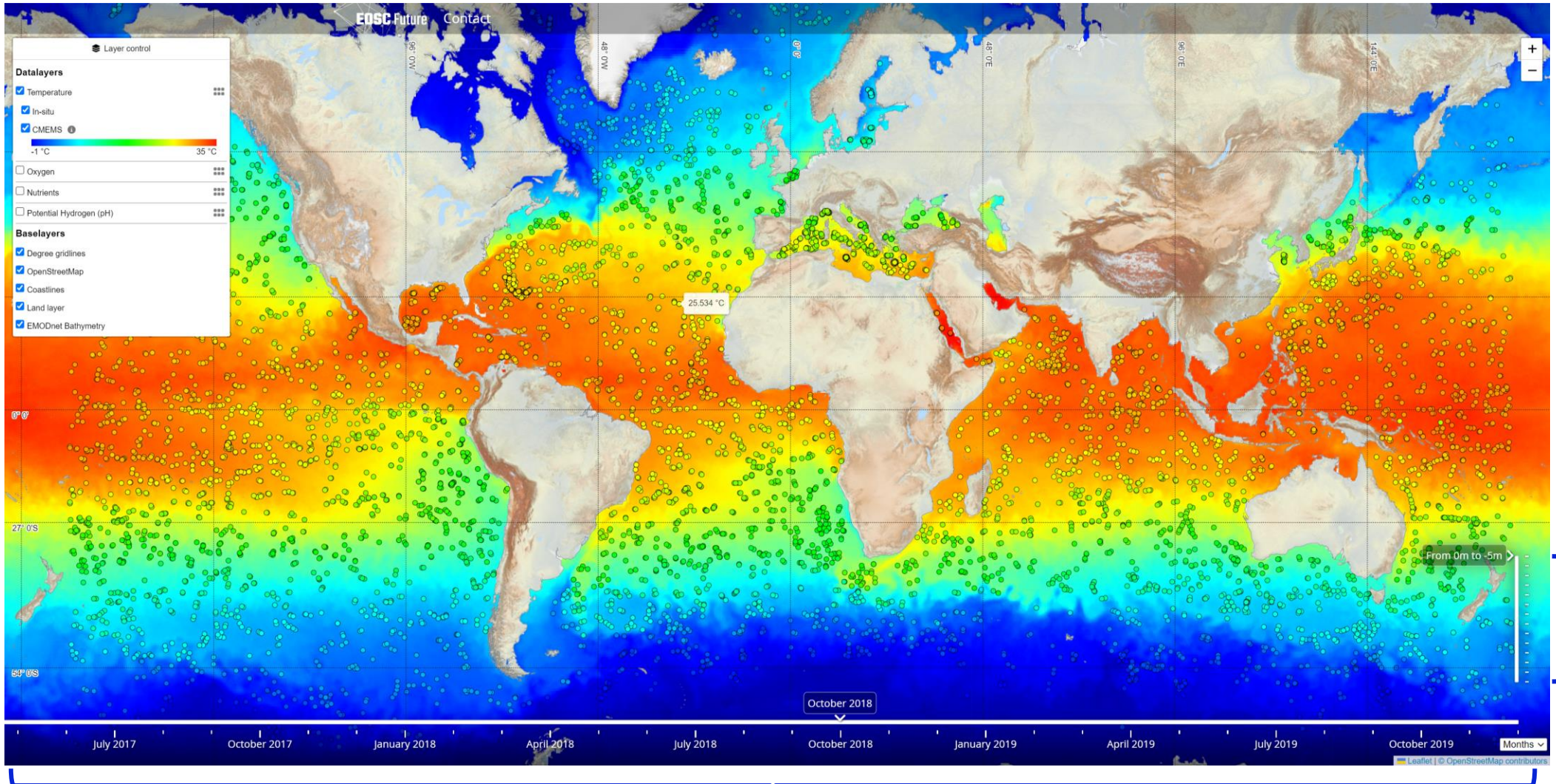
Unit Conversions - Oxygen

toConvert	label	into	otherUnitLabel	multiplyBy	multiplier
To convert	Mole per Cubic Metre	into	Millimoles per cubic metre	multiply by	1000.0
To convert	Micromoles per litre	into	Millimoles per cubic metre	multiply by	1.0
To convert	Picomoles per litre	into	Millimoles per cubic metre	multiply by	0.000001
To convert	millimoles per litre	into	Millimoles per cubic metre	multiply by	1000.0
To convert	Mole Per Litre	into	Millimoles per cubic metre	multiply by	1000000.0
To convert	Picomoles per cubic metre	into	Millimoles per cubic metre	multiply by	0.000000001
To convert	Femtomoles per litre	into	Millimoles per cubic metre	multiply by	0.000000001
To convert	Millimoles per cubic metre	into	Millimoles per cubic metre	multiply by	1.0
To convert	Mol per Kilogram	into	Millimoles per cubic metre	multiply by	1025000.0
To convert	Nanomoles per kilogram	into	Millimoles per cubic metre	multiply by	0.001025
To convert	Micromoles per kilogram	into	Millimoles per cubic metre	multiply by	1.025
To convert	Picomoles per kilogram	into	Millimoles per cubic metre	multiply by	0.000001025
To convert	Femtomoles per kilogram	into	Millimoles per cubic metre	multiply by	
To convert	Millimole Per Kilogram	into	Millimoles per cubic metre	multiply by	1025.0
To convert	kilogram per cubic metre	into	Millimoles per cubic metre	multiply by	31251.171918946960511019163219
To convert	Kilogram per Cubic Metre	into	Millimoles per cubic metre	multiply by	31251.171918946960511019163219
To convert	Microgram Per Litre	into	Millimoles per cubic metre	multiply by	0.031251171918946960511019
To convert	Milligram Per Cubic Metre	into	Millimoles per cubic metre	multiply by	0.031251171918946960511019
To convert	Nanograms per litre	into	Millimoles per cubic metre	multiply by	0.000031251171918946960511
To convert	Milligram Per Litre	into	Millimoles per cubic metre	multiply by	31.251171918946960511019163
To convert	Gram Per Cubic Metre	into	Millimoles per cubic metre	multiply by	31.251171918946960511019163
To convert	Gram Per Cubic Centimetre	into	Millimoles per cubic metre	multiply by	31251171.918946960511019163218621
To convert	Microgram Per Cubic Metre	into	Millimoles per cubic metre	multiply by	0.000031251171918946960511
To convert	Nanograms per microlitre	into	Millimoles per cubic metre	multiply by	31.251171918946960511019163
To convert	Picofarad Per Metre	into	Millimoles per cubic metre	multiply by	0.000000031251171918946961
To convert	Picograms per litre	into	Millimoles per cubic metre	multiply by	0.000000031251171918946961
To convert	Femtograms per litre	into	Millimoles per cubic metre	multiply by	
To convert	Millilitre Per Cubic Metre	into	Millimoles per cubic metre	multiply by	0.044661
To convert	Microlitre Per Litre	into	Millimoles per cubic metre	multiply by	0.044661
To convert	Cubic microns per cubic metre	into	Millimoles per cubic metre	multiply by	0.000000000000044661
To convert	Millilitre Per Litre	into	Millimoles per cubic metre	multiply by	44.661
To convert	Cubic microns per millilitre	into	Millimoles per cubic metre	multiply by	0.000000044661



Web viewer

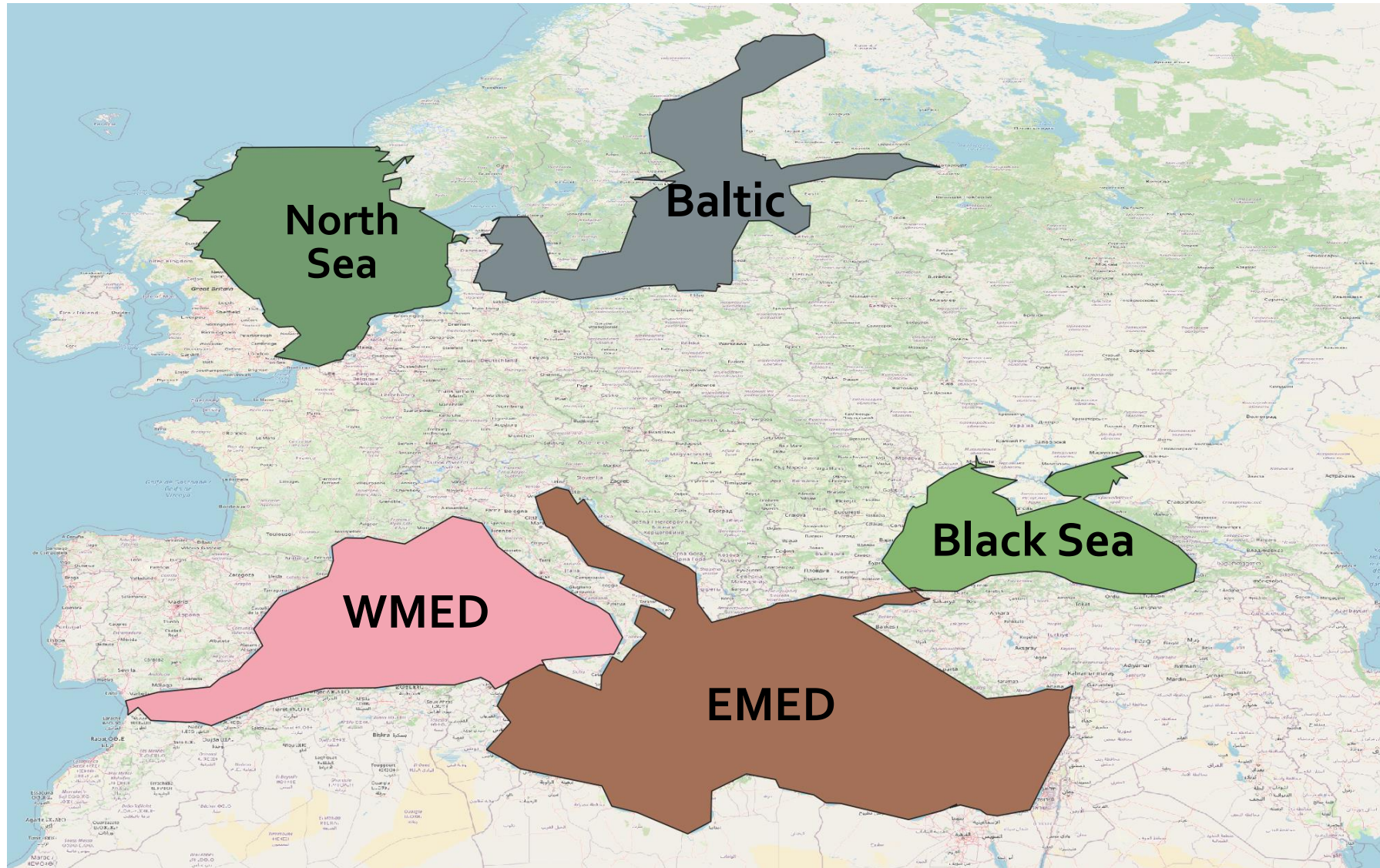
EOVs



Depth

Time period

Ocean indicators – Sea Regions



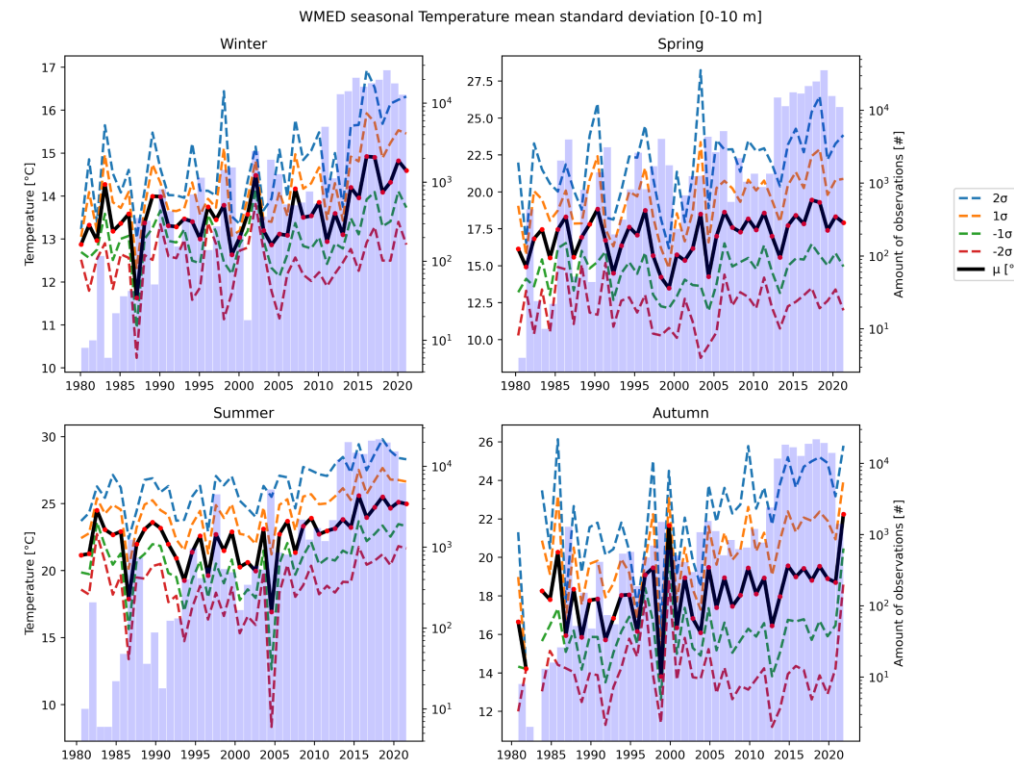
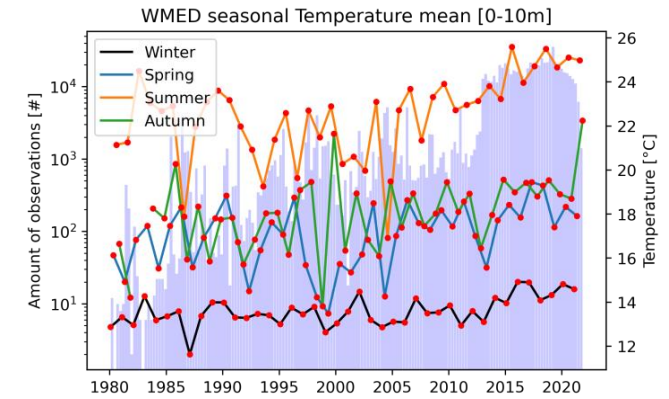
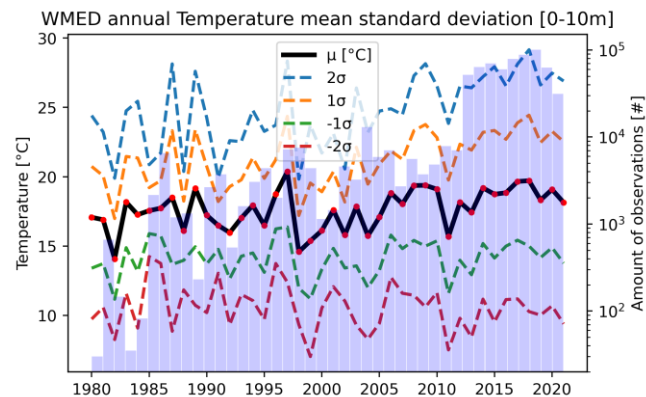
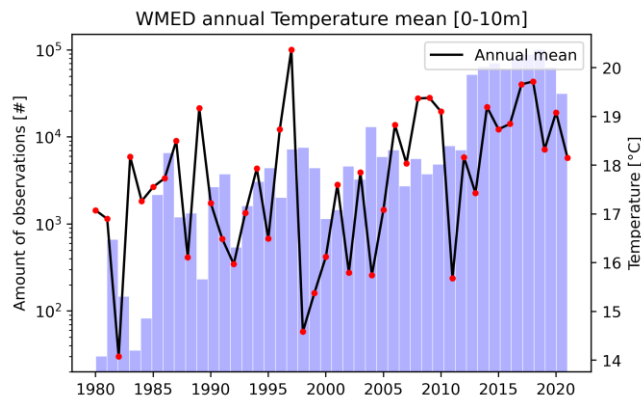
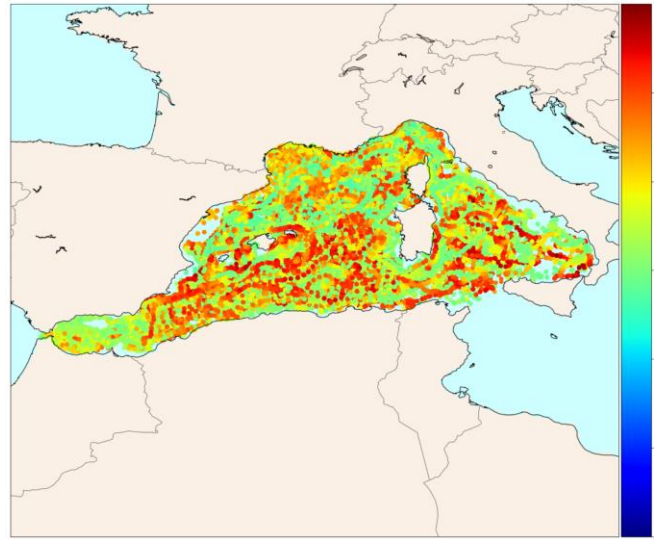
Ocean indicators

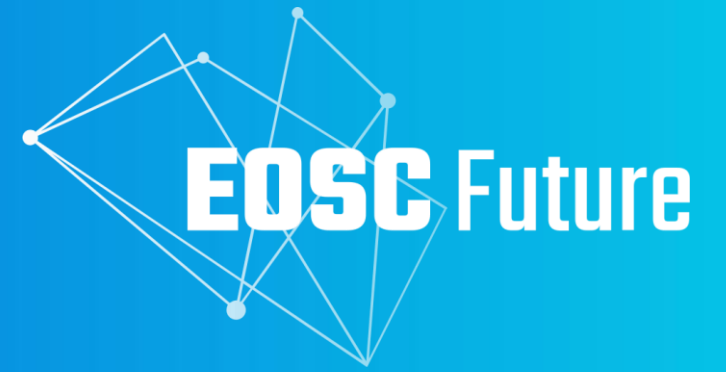
Region: **WMED**

Time period: **1980 – Present**

Depth: **[0 - 10m]**

EOV: **Temperature**

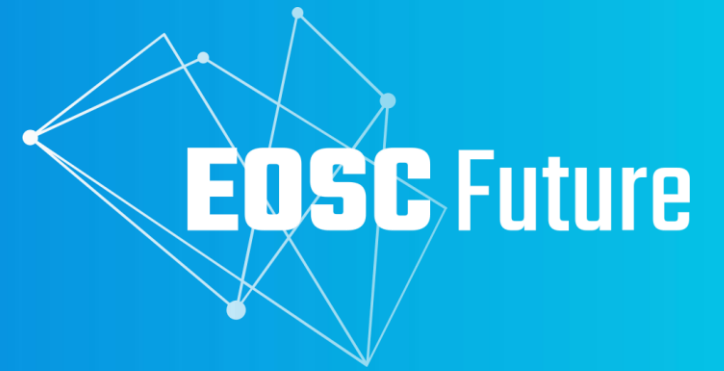




Thank you for your attention

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Get in touch

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