

27-29 May 2024 



imdis

# International conference on **Marine Data** and **Information Systems**



MARIS



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**EuroGOOS**  
European Global Ocean  
Observing System

**EuroGOOS Data Policy**  
**FAIR data for ocean science and**  
**operational oceanography**  
**<https://doi.org/10.25607/OBP-1980>**

EuroGOOS DataMEQ Working Group

# EuroGOOS overview



***Vision***  
**SUSTAINED  
OCEAN OBSERVING**  
and operational oceanography services  
that benefit the European society  
and are supported by it.

***Mission***  
**TO LEAD**  
the development and implementation  
of sustained and coordinated operational  
oceanography across Europe.

# EuroGOOS Working Groups, Task Teams & Regional Systems

- Over 30 experts
- European data services
  - EU & international initiatives
  - EuroGOOS Regional systems
  - Task Teams



## EuroGOOS Working Groups

- Biology
- Coastal
- **Data Exchange**
- Ocean Literacy
- Science Advisory
- Tech Planning

## EuroGOOS Task Teams

- Argo
- FerryBox
- Fixed Platforms
- Gliders
- HF Radar
- Tide Gauges

## EuroGOOS Regions



# Context: major data policy initiatives

2019



The Open Data Directive  
implementing act on High  
Value Datasets EU directive



IOC Oceanographic Data  
Exchange Policy

2021



**New Unified Data Policy**

- 'core' data, which must be freely available
- 'recommended' data, for which agreements can be needed

All GOOS EOVs and ECVs  
are core data



All data provided to ICES are  
considered to be public data under  
the Creative Commons Attribution  
Licence (CC-BY)

2023

Revision of IOC data policy  
is underway

New EuroGOOS Data policy  
as European implementation  
of the IOC data policy



# European implementation of IOC data policy

- **Core marine data shared with the minimum possible delay**  
Core = at least physical and biogeochemical Essential Ocean Variables (EOVs) of the Global Ocean Observing System
- **Free circulation EOVS data**  
Findable, Accessible, Interoperable and Reusable (FAIR), shared through open and free license (recommended Creative Commons Attribution Licence, CC-BY)
- **Available with minimal restrictions on use** unless there are valid reasons to restrict access (consistent with national jurisdictions, international conventions, and treaties, where applicable)
- **Quality controlled and accompanied by metadata**, accessible through a web interface and machine-to-machine protocols
- **Submitted to European and international open data systems**
- **Engage EuroGOOS Member Organizations and community** to commit to implementation

# Take home messages

- EuroGOOS data policy is the European **implementation** of IOC data policy
- It is **our commitment** for ocean data circulation and use in support of European and global policies and societal challenges
- It **promotes**
  - Ethically open data: “as open as possible, as closed as necessary”
  - Clear, unambiguous data licenses such as CC-BY
  - Long term archives in certified repositories
  - FAIR principles  
Such as persistent and globally unique identifiers – PIDs for Better data citation and credits to providers

# The European implementation of IOC Data policy

10 concise and clear sections presented in the next slides



# Section 1. Preamble

- *The timely, free and unrestricted international sharing of oceanographic data, metadata and products is essential for a wide variety of purposes and benefits including the prediction of weather and climate, the operational forecasting of the marine environment, the preservation of life, economic welfare, safety and security of society, the mitigation of human-induced changes in the marine and coastal environment, as well as for the advancement of scientific understanding that makes this possible.*
- ***Data, metadata and products should be accessible, reproducible, interoperable, freely and openly shared with minimum delay and restrictions. Such sharing of data in both real-time and delayed mode facilitates scientific research and innovation.***

## Section 2. Purpose

- *The purpose of this data policy is to outline the requirements with respect to data sharing, access, preservation, and attribution to facilitate the broad use and reuse of data and information. This policy requires **EuroGOOS members to share core marine data with the minimum possible delay** and according to an open source licence. By core marine data we mean, at least, the physical and biogeochemical Essential Ocean Variables (EOVs) of the Global Ocean Observing System.*

## Section 3. Conditions of use

- *Data should be licensed under a minimally restrictive and voluntary common-use licence that, under specific conditions, grants permission, ensures proper attribution and allows others to copy, distribute and make use of the data. **Creative Commons Attribution Licence (CC-BY) licence is recommended.***

## Section 4. Access restrictions

- *Data and associated metadata should be made available with **minimal restrictions on use unless there are valid reasons to restrict access**. Legitimate reasons to restrict access to, and reuse of, data and associated metadata include, inter alia, privacy and confidentiality, protection of rare or endangered species and national security.*

## Section 5. Data sharing policies of EuroGOOS Members



- *This Policy acknowledges the right of Members and data originators to determine the terms of data sharing in a manner consistent with national jurisdictions, international conventions, and treaties, where applicable.*
- *The EuroGOOS members agree that the **free circulation of Essential Ocean Variables (EOVs)** is of major importance for **science and safety**, and therefore strongly encourage the circulation of data through open and free license.*

## Section 6. FAIR principles

- *To support knowledge discovery and innovation both by humans and machines, **data should meet FAIR Guiding Principles** (Findable, Accessible, Interoperable and Reusable) to the greatest extent practicable.*

# Section 7. Data availability and quality control

- *The core marine data (EOVs) should be made available with the least possible temporal delay, according to the following quality control (QC) requirements.*
- *Available **data should be formatted and quality controlled.***
- *There are two levels of QC that should be documented and traceable.*
  - ***Automated QC:** for real-time data distribution (e.g. data circulated as soon as it is acquired after minimal checks of the data).*
  - ***Scientific QC and adjustment:** for delayed-mode data distribution (e.g., data QC has been performed by a data scientist).*

# Section 8. Data Repositories

- *Data should be quality controlled, accompanied by metadata and stored in an openly accessible data repository and made accessible and discoverable through a web interface and machine-to-machine protocols.*
- ***EuroGOOS members shall, where possible, use their national oceanographic data centre, organised by SeaDataNet, or European/international observation networks data systems.***



# Section 9: Secure long-term data archives

- *To support long-term and secure archival, data should be submitted, to the best practicable degree, to International Oceanographic Data and Information Exchange (IODE)'s World Ocean Database (**WOD**), the Ocean Biodiversity Information System (**OBIS**), data centres linked to the World Data System (**WDS**), or their successors, as long-term secure archives for oceanographic data and associated metadata.*

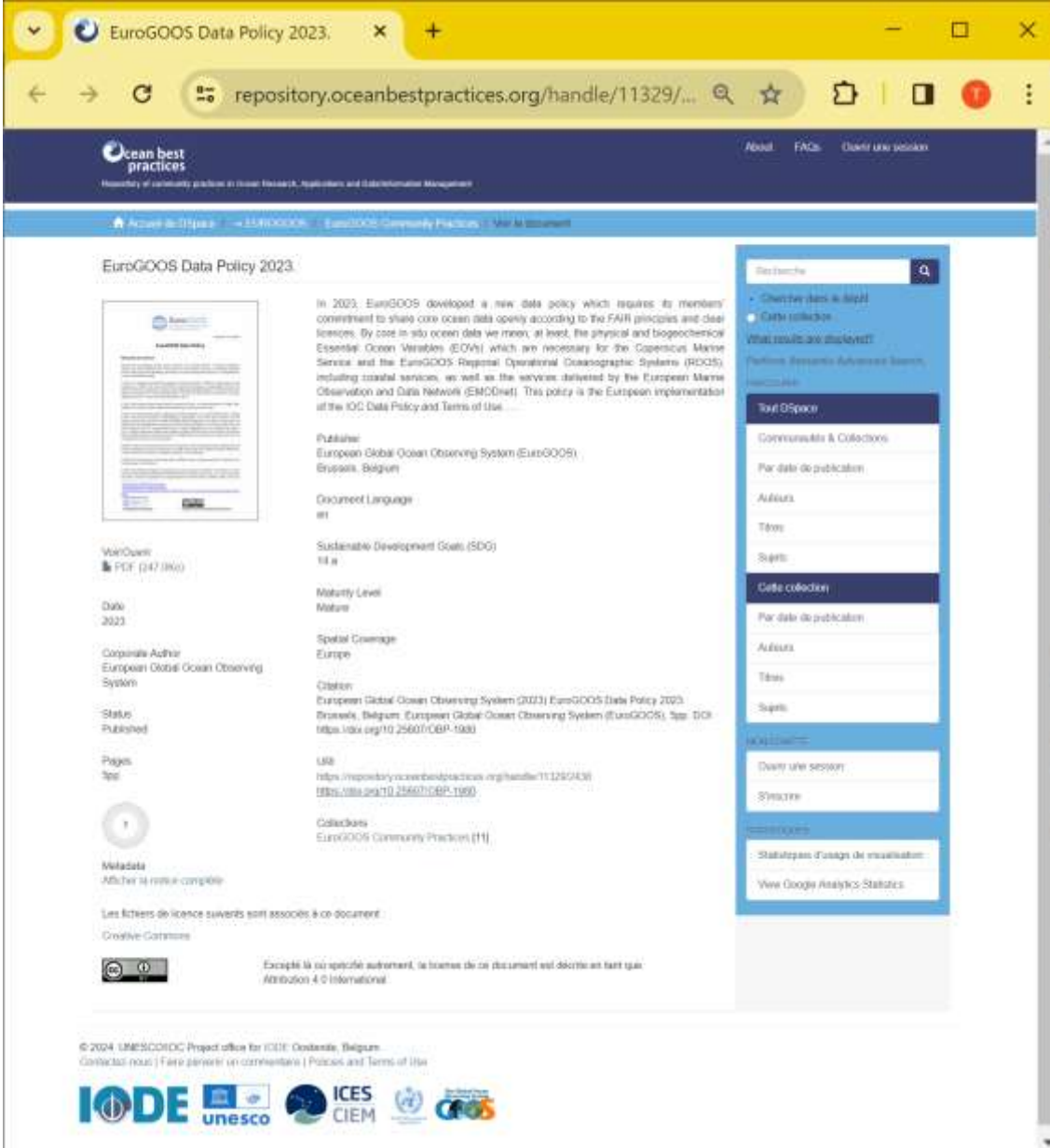
# Section 10. Data and metadata sharing guidelines



- *EuroGOOS activities, such as task teams and working groups as well as other Communities of Practice should develop and/or apply, where applicable, **detailed data and metadata sharing guidelines** that are consistent with this EuroGOOS Data Policy and Terms of Use.*

# Where are we now ?

- EuroGOOS data policy is now an Ocean Best Practice publication  
<https://doi.org/10.25607/OBP-1980>



The screenshot shows a web browser displaying the 'EuroGOOS Data Policy 2023' page on the Ocean Best Practices repository. The page is titled 'EuroGOOS Data Policy 2023' and features a PDF icon with the text 'PDF (247 KB)'. The page content includes a summary of the policy, its publisher (European Global Ocean Observing System), and its status (Published). The page also displays the Creative Commons Attribution 4.0 International license logo and a link to the full document. The right sidebar contains search and navigation options, including 'What results are displayed?' and 'What collections?'. The footer includes the copyright information for UNESCO IODE and logos for IODE, UNESCO, ICES, and CIEM.

# What next ?

The data policy is a commitment for FAIR data, with continuous efforts to:

- Improve citation and credits to data providers through DOI best practices (Digital Object Identifier) and SeaDataNet vocabularies (EDMO codes)
- Synergies with EuroGOOS ROOSes/Working Groups/Task Teams
  - OceanGlider NetCDF format implementation  
An international activity, organized by OceanOPS
  - HF-Radar NetCDF format improvement (global attributes, compression)  
A Copernicus and SeaDataNet joint data format
  - BGC-Argo synthetic profiles towards Copernicus Marine in situ NetCDF  
One format for Core-Argo and BGC-Argo data
  - SeaDataNet NetCDF and vocabularies for Ship-ADCP  
EuroGO-SHIP project funding
  - Cloud native DAC/GDAC workflows (AMRIT)



**EuroGOOS**  
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