EMSO ERIC Data Policy

Version 0.7

EMSO ERIC

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History of changes

Version	Date	Change	Author(s)
0.1	18/10/2023	First draft.	Aljaz Maslo
0,2	24/10/2023	Comments and integrations.	Valentina Tegas
0.3	2/10/2023	Added some clarifications.	Aljaz Maslo
0.4	21/11/2023	Added some clarifications to respond to comments from Valentina Tegas, Enoc Martinez, Ivan Rodero and Aleardo Furlani.	Aljaz Maslo
0.5	27/11/2023	Document re-organization and updates throughout the document	Ivan Rodero
0.6	01/12/2023	Reorganization of the document and implementation of changes according to Ivan Rodero.	Aljaz Maslo
0.7	26/02/2024	DOIs added to ANNEX section	Aljaz Maslo

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1. INTRODUCTION

The European Multidisciplinary Seafloor and water column Observatory (EMSO) is a distributed research infrastructure consisting of a system of Regional Facilities (RFs) including fixed seafloor and water column observation platforms and connected facilities. EMSO observation platforms are located in key sites in Europe, from the northeast Atlantic, through the Mediterranean to the Black Sea. EMSO European Research Infrastructure Consortium (EMSO ERIC), is an intergovernmental organisation and is responsible for making the RFs available to the scientific community as a single international organisation, with unified governance and management. At the core of EMSO ERIC's mission is the collection, curation, and provision of high-quality oceanographic measurements to assess long-term trends.

EMSO ERIC relies heavily on cooperation with RFs as a high proportion of the data are available in distributed national data repositories and not in dedicated repositories owned and operated by EMSO ERIC. RFs produce and deliver the data upon which the EMSO ERIC database is built. In order to foster open, free and easy access to data from the RFs, EMSO ERIC needs a common data policy.

For a research infrastructure such as EMSO ERIC, there is an expectation from both users and funding agencies that experimental data will be made available and comply with the FAIR principles (Findable, Accessible, Interoperable, Reusable). In this context, the data policy is a key component of the research data management framework, addressing several critical issues that organise the relationship with visiting users and the user community in general when it comes to data, products, and services (ownership, embargo, access to data, storage, curation, etc.). The EMSO ERIC considers research data to be valuable results of its operation, which contributes to sharing and dissemination of knowledge across the European Research Area.

This document describes the general EMSO ERIC Data Policy guidelines and principles, and provides pointers to different documents (Annex A) relevant to this Policy document.

2. DEFINITIONS

Term	Definition
EMSO ERIC data	are quantitative and/or qualitative attributes of variables or sets of variables that have been gathered by EMSO ERIC regional facilities.
Regional Facility (RF)	is an EMSO ERIC facility composed of the observation infrastructure, instrumentation and hardware, and other resources and services in a particular region.
Metadata	describes information referring to data collected from instruments, including (but not limited to) the context of the experiment, the experimental team, experimental conditions, electronic logbooks generated during the experiment and other logistical information.
Open Access	means free access to information and unrestricted use of electronic resources for everyone. Any kind of digital content can be open access, from texts and data to software, audio, video, and multimedia. While most of these are related to text only, a growing number are integrating text with images, data, and executable code.
Data Owner	people or entity that possess the right and control over the acquisition, use and distribution of a data set.
Data Management Plan	is a document which define the strategy that covers the data produced, volumes, metadata requirements, data retention periods, data disposal, processing and analysis requirements and tools. The data management plan shall clarify all aspects of data management between the facility and the users before the experiment takes place.
EMSO ERIC Digital Tools	means tailored codes and software for processing and visualization of EMSO ERIC data, data analysis, and research.
FAIR principles	means guiding principles to make data Findable, Accessible, Interoperable and Reusable.
Creative Commons (CC) Licenses	give everyone, from individual creators to large institutions, a standardized way to grant the public permission to use their creative work under copyright law. See https://creativecommons.org/
EMSO ERIC User	individual or institution that utilises the EMSO ERIC services to access data and data products and/or tools and software. Access includes discovery, download, execution, or any other use.
Embargo Period	is a period during which access to data or publications is reserved exclusively to the owners

3. GENERAL PRINCIPLES

EMSO ERIC shall provide effective access for a broad user community to its resources and services, including high-quality data, metadata and digital tools, to foster innovation. It is expected that access to the data is free of charge and that EMSO ERIC data should be fully available for others to use with as few restrictions as possible. However, reasonable restrictions that are still in line with open access principles may be implemented for specific data sets, especially when access to them could jeopardize a potential industrial/commercial use, violate the rules on personal data protection, or on confidentiality for security reasons.

The EMSO ERIC data policy aims to follow and help implement at EMSO ERIC the following key principles:

● preserve and manage data according to FAIR principles

● make data available in a user-friendly, timely manner, without undue delay and possibly through open access

● utilise a widely accepted community licensing scheme, i.e. Creative Commons.

It is generally recognized that throughout Europe, various scientific communities are at different stages of implementing data sharing and use different methods of data distribution. EMSO ERIC intends to work closely with RFs and users to ensure their diverse models and needs are accommodated. EMSO ERIC will adopt this flexible approach in recognition that one size does not fit all. This will help to reinforce open science inquiry, encourage diversity of analysis and opinion, and promote new research. EMSO ERIC will provide transnational and interdisciplinary services that will simultaneously integrate and support national and regional infrastructures. EMSO ERIC will encourage a culture of openness and sharing of research data within public research communities and within member countries and beyond.

The users of EMSO ERIC data and digital tools are normally expected to make resulting publications available through open access repositories. Open source software is encouraged and recommended when possible. Users are also expected to cite EMSO ERIC when using its data in publications. Acceptance of the data policy by the RFs is mandatory. EMSO ERIC may extend the requirement of accepting this data policy to RF users who have acquired their physical access through the “EMSO ERIC physical access call”. Deliberate infringements of the data policy may lead to denial of further access and/or contracting with EMSO ERIC.

4. EUROPEAN LEGAL FRAMEWORK RELATED TO ENVIRONMENTAL DATA, INFORMATION AND DATABASES

The EMSO ERIC Data Policy takes into account the overall European legal framework related to environmental data, information, and databases, in particular the:

Aarhus Convention on the rights to access to environmental data. The Aarhus Convention is an international treaty that was adopted in 1998 and entered into force in 2001. It grants the public rights regarding access to environmental information and participation in environmental decision-making processes.

INSPIRE Directive[1] on sharing of spatial information among public sector organisations and access to the spatial data. The INSPIRE Directive is a European initiative aimed at harmonizing the sharing of spatial data among public sector organizations. It plays a crucial role in improving the accessibility and interoperability of geospatial information across the EU. The INSPIRE directive aims at creating a European Union (EU) spatial data infrastructure (SDI). This SDI will enable the sharing of environmental spatial information among public sector organisations and better facilitate public access to spatial information across Europe.

Database Directive[2] on the legal protection of databases. The Database Directive provides legal protection for databases, striking a balance between incentivizing innovation and ensuring fair use. It establishes copyright-like rights for the creators of databases.

Software Directive [3]on the legal protection of computer programs. This directive offers legal protection to computer programs under copyright law. It outlines the rights and limitations of software developers, which is vital for the software industry.

PSI Directive[4] on the re-use of Public Sector Information. The PSI Directive facilitates the re-use of public sector information, aiming to boost innovation and economic growth. It encourages the availability of government data for various applications, from research to commercial use.

[1] Directive 2007/2/EC of the European Parliament and of the Council of 14 March 2007 on establishing an Infrastructure for Spatial Information in the European Community (INSPIRE) (sharing of the spatial information among public sector organisations and access to the spatial data).
[2] Directive 96/9/EC of the European Parliament and of the Council of 11 March 1996 on the legal protection of databases.
[3] Directive 2009/24/EC of the European Parliament and of the Council of 23 April 2009 on the legal protection of computer programs.
[4] Directive 2003/98/EC of the European Parliament and of the Council of 17 November 2003 on the re-use of public sector information and amendments to it.

European Charter for Access to Research Infrastructures. This charter focuses on principles and guidelines for providing access to research infrastructures. It's instrumental in promoting open and equitable access to essential research facilities.

OECD (Organization for Economic Cooperation and Development) Principles and Guidelines for Access to Research Data from Public Funding. These OECD principles and guidelines set standards for providing access to research data funded by the public sector. They promote openness and data sharing in the research community.

EMSO ERIC shall respect and comply with any European and national legislation as applicable regarding the protection of personal data and privacy (Annex A) as well as environmental science data. EMSO ERIC Data Policy acknowledges the ongoing work of the European Commission to foster the FAIR principles for data access, sharing, and use. This data policy also recognizes the relevant international observation system initiatives and national policies and legislations with the aim of full and open exchange of data and metadata and of providing access to elaborated data products with minimum time delay and at possibly no costs.

5. ACCESS TO EMSO ERIC DATA, DATA PRODUCTS, SOFTWARE AND SERVICES

EMSO ERIC supports the European Commission's approach regarding data policy: "As open as possible, as closed as necessary." The various ways to access EMSO ERIC data are described in the EMSO ERIC Data Management Plan (Annex A). Access to data produced by EMSO ERIC shall, wherever possible, be free and open to all members of scientific institutions and other stakeholders. To other users, EMSO ERIC may disseminate collected data for a fee. Restrictions may be allowed, enabling certain data to be accessible only after a designated waiting period. Information on restriction and embargo conditions shall be available to a user in a clear and transparent way.

The RFs are responsible for clarifying and identifying who should receive attribution. However, it is the task of the EMSO ERIC to protect RFs' right to the proper acknowledgment and citation. To access the portal and download any datasets, data users will have to accept the terms and conditions (Annex A). These conditions shall mandate proper attribution to data providers. Additionally, the terms shall include an exemption of any liability that may arise as a consequence of the use of the data made available by the EMSO ERIC. EMSO ERIC aims to have a transparent and user-friendly licensing process. EMSO ERIC may also apply a registration process if seen as appropriate. Data that has been collected outside EMSO ERIC

may also be made available for users. The aim is to apply the same principles of licensing to this data whenever feasible.

6. INTELLECTUAL PROPERTY RIGHTS

This paragraph exclusively deals with original compilations of data which can be considered protected by copyright, though whether a compilation of data is "original" is a highly contextual and factual determination. EMSO ERIC original compilations are those where some degree of skill and judgement is involved when compiling the data in question. The right to produce and reproduce data is subject to copyright protection. EMSO ERIC can also create derivative works from such data (i.e. derivative data).

Ownership and intellectual property rights (IPR) to any data or metadata, databases or software, or any other technologies that are generated within EMSO ERIC institutional activities, R&D projects shall belong to EMSO ERIC and to those who have generated them in accordance with the applicable legislation[5].

RFs are required to verify that the data they provide do not, to the best of their knowledge and belief, infringe any third-party IPR (rights which the EMSO ERIC and/or the RFs have not generated themselves and do not own), and ensure that, where identified, third party interests are fully accounted for and acknowledged. Those who have jointly generated data or data-related tools, databases or software or any other products shall have joint ownership and they shall agree separately upon the conditions of the joint ownership. Any and all IPR, which are created (not shared by the RFs), obtained or developed by EMSO ERIC shall vest in and be owned absolutely by EMSO ERIC. The EMSO ERIC Data Management Plan outlines the adopted license conditions by EMSO ERIC and the proper acknowledgment procedures for data shared through its platform.

The Assembly of Members shall approve the data IPR protection policies of EMSO ERIC related to the identification, protection, management, and maintenance of data curation of EMSO ERIC, including access to those rights, as established in the EMSO ERIC Implementing Rules.

[5] Intellectual property shall mean property as defined in Article 2 of the Convention establishing the World Intellectual Property Organisation, signed in Stockholm on 14 July 1967.

7. METADATA

Machine-readable metadata standards shall be preferred for describing the datasets and associated services. A rich metadata format shall be used and associated with the datasets, providing detailed provenance information. The metadata format shall meet the domain-relevant community standards and be described with a plurality of accurate and relevant attributes. Metadata shall be registered/indexed into a common searchable resource, making the data and metadata easily searchable and discoverable by the users.

8. QUALITY CONTROL

Quality control of the data and metadata rests with the RFs. RFs are responsible for checking the quality parameters of the metadata descriptions that provide information for discovery, contextualisation, and action and on provenance and traceability.

EMSO ERIC plans include harmonized QC procedures for its data. EMSO ERIC shall provide a mechanism to obtain user feedback on the data and metadata quality. EMSO ERIC will ensure a continuous process of review and assessment to verify that the system is operating as envisioned, seeking improvements, and preventing/eradicating problems. EMSO ERIC will give emphasis to controlling the quality of the services provided (e.g. response time, number of successful requests, and number of peer-reviewed publications).

9. EMSO ERIC DATA ATTRIBUTION AND CITATION

It is important for EMSO ERIC and further data users to acknowledge the persons and organisations, that have originally generated or processed the data. For this purpose, a persistent identifier with the information of the RF/authors will be accompanied with every EMSO ERIC data set. EMSO ERIC will seek the most feasible technical solution for attaching the identifiers to the data, together with clear information about how to properly acknowledge and cite the data sources in accordance with established best practices and guidelines. Users shall cite the persistent identifier in any publication that refers to the data (or to a subset of the data).

10. MANAGEMENT OF THE EMSO ERIC DATA POLICY

The Director General of the EMSO ERIC, with the support of the Central Management Office and Service Groups, shall administer this data policy and ensure that its members respect the adopted data policy document. Any failures regarding the use of or the implementation of

the EMSO ERIC Data Policy shall be reported to the Director General, who will then take a decision accordingly.

EMSO ERIC may allow for exceptions to the guidance contained in this document on a case-by-case basis where permitted by law and in the furtherance of the public interest. Request for exceptions to this data policy should be sent to the EMSO ERIC Director General, and the exceptions will be adopted by the EMSO ERIC General Assembly.

EMSO ERIC shall have a data management plan, which is a defined strategy covering the production of data, volumes, metadata requirements, data retention periods, data disposal, processing and analysis requirements, and tools, thus clarifying all aspects of data management. This data management plan should follow the guidelines of the EMSO ERIC Data Policy. Moreover, there shall be a dedicated data management plan for every RF, and every RF needs to ensure their database is managed efficiently and delivered according to the EMSO ERIC Data Policy.

When required, the Director-General, in consultation with the Executive Committee, shall prepare proposals to the Assembly of Members for data policy update and shall implement those policies. The Director-General and each Member may propose amendments to any of the policies. The Assembly of Members shall consider each proposed amendment and, if approved, shall implement the amended policy.

ANNEX A: EMSO ERIC Data Policy Documents

The table below provides the pointers to the documents associated with the EMSO ERIC Data Policy through their Digital Object Identifier (DOI).

Document	DOI that points to the latest version of the document.
EMSO ERIC Data Management Plan	https://doi.org/10.5281/zenodo.10697876
EMSO ERIC Website Terms and conditions	https://doi.org/10.5281/zenodo.10215414
Data Protection Policy	https://doi.org/10.5281/zenodo.10215423