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Updated Data Management Plan

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EXECUTIVE SUMMARY

The Data Management Plan (DMP) is a document that outlines the policies and procedures implemented within the ERA_FABRIC project for the collection, storage, sharing, and publication of research data throughout the project's duration. The creation of this document is primarily guided by the "Guidelines on FAIR Data Management in Horizon 2020."

Furthermore, DMP aims to ensure that research data generated within the ERA_FABRIC project is managed in a manner that promotes the principles of Findability, Accessibility, Interoperability, and Reusability (FAIR) outlined in the Horizon 2020 guidelines. By adhering to these principles, the project aims to maximize the impact and value of its research outputs.

This version of the Data Management Plan has been further refined with recommendations on how to comply with Horizon Europe mandate for Research Data Management and updated following the project implementation phase.

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ABBREVIATIONS

CA	Consortium Agreement
DL	Deliverable Leader
EAB	External Advisory Board
EC	European Commission
EU	European Union
GA	Grant Agreement
PC	Project Coordinator
PP	Project partner
ART-ER	ART-ER S.cons. p a
CNR	CONSIGLIO NAZIONALE DELLE RICERCHE
EURECAT	FUNDACIO EURECAT
INESCTEC	INSTITUTO DE ENGENHARIA DE SISTEMAS E COMPUTADORES, TECNOLOGIA E CIENCIA
MU	Masarykova Univerzita
NTNU	NORGES TEKNISK-NATURVITENSKAPELIGE UNIVERSITET
UNIST	University of Split
WUT	Politechnika Warszawska
GDPR	General Data Protection Regulation
IPR	Intellectual Property Rights
WP	Work Package
DMC	Data Management Coordinator
DMO	Data Management Operators

INTRODUCTION

The overarching aim of the ERA_FABRIC project is to define, structure, populate and validate the "interconnected knowledge space" foreseen by the EU ERA Hubs initiative (COM 2020 628 final). Three distinct, and intertwined, dimensions, all of them relevant for policy making, are adopted as a structuring principle for the community to be built and cultivated during the project:

1) ERA Hubs as Knowledge Ecosystems: fostering the dynamic interaction of R&D and innovation actors at regional and multiregional levels, considering the different knowledge and cultural contexts and the alignment of research foci and industrial needs;

2) ERA Hubs as Multi Stakeholder Platforms: bringing together the representatives of the various involved interest groups in a seamless and uninterrupted discussion and deliberation on strategic priorities, actions and results evaluation;

3) ERA Hubs as a Policy Co Creation Toolbox: a transformative set of measures and tools operating in a "middle ground" needing to be configured as a distinct space from both the EU and the MS/Regional levels, historically presided over by "ad hoc" sets of instruments (e.g. Framework Programs for R&I, Structural and Investment Funds, Interregional and Cross Border Cooperation Programs).

The Data Management Plan (DMP) outlines the procedures for collecting, storing, sharing, and making research data and results available within the scope of a project. In the case of this project, the DMP serves multiple purposes:

- Guidance for project partners: The DMP provides guidance to all project partners on how to manage open research within the project. It ensures that everyone involved understands the processes and practices required for effective data management.
- Assessment Tool for the European Commission: The DMP serves as an assessment tool for the European Commission services to monitor how research data is being collected and shared in the ERA_FABRIC project. It enables the Commission to evaluate compliance with data management requirements and assess the project's adherence to open research principles.
- Reference for Future European Projects: The DMP may serve as a reference for research data management in joint European projects by documenting the best practices, procedures, and lessons learned from managing research data in this project.

To ensure that all project partners are actively involved and informed, they have been consulted before the approval and submission of the first version of the DMP at the end of June 2023. Additionally, they have been continuously informed and consulted regarding any updates or modifications made to the document during ERA_FABRIC consortium meetings. This collaborative approach ensures that all stakeholders have a voice in shaping the data management processes and promotes effective implementation throughout the project.

1. Data summary

ERA_FABRIC involves carrying out data collection, including personal data and metadata during field activities but no major collection of sensitive personal data that can be relevant to consider upfront because of its ethically sensitive implications. The project also gathered specific field data from existing (public or private) sources to take inspiration, validate and assess the effectiveness of the proposed framework in real-life conditions.

All processing of personal data have been conducted in accordance with the provisions of: a) the GDPR (Regulation (EU) 2016/679) (European Union, 2016), b) the Universal Declaration of Human Rights and the Convention 108 for the Protection of Individuals with Regard to Automatic Processing of Personal Data, and c) the national laws applying its provisions, including those governing the acquisition of valid consent.

ERA_FABRIC collected data from real-world baseline environments and aggregated it to existing information and knowledge providing input for the modelling and evaluation phases. Data may be made available in several types such as numerical data, texts, images, tables and other formats.

ERA_FABRIC results and data are collected across three main resources:

- ERA_FABRIC CORDIS webpage https://cordis.europa.eu/project/id/101094821/results
- ERA_FABRIC Zenodo repository https://zenodo.org/communities/erafabric
- ERA_FABRIC website https://erafabric.eu/

An updated data summary is provided in Annex 1.

2. Fair data

2.2. Making data findable

To enhance the findability of data generated and made available in ERA_FABRIC, project partners will have three important tools at their disposal: identifiers, metadata, and naming conventions. These tools play a crucial role in ensuring that data can be easily located and accessed by researchers and stakeholders.

Data persistent identifier (Digital Object Identification - DOI) will be assigned to key reports/deliverables/articles uploaded to ERA_FABRIC community page on Zenodo. Files will be stored on servers located at CERN. CERN has a special legal status as an Intergovernmental Organization and thus enjoys certain privileges and immunities under international law. Processing of personal data at CERN is governed by CERN's Operational Circular 11 (OC11) that offers data protection at the same high standards and is comparable to EU's General Data Protection Regulation (GDPR).

When uploading datasets to the repository we will apply following naming convention:

project-name_date[year-month-day]_title_v[number]_deliverable-number.fileformat

2.2. Making data accessible

Utilizing an open-source and freely available tool like Zenodo as a repository for ERA_FABRIC data, it offers the advantage of minimizing additional costs for implementing the data management plan. Since Zenodo is an open-access platform that provides free data deposition and storage services, it aligns well with the goal of making research data openly available to the wider community.

By leveraging Zenodo, project partners can benefit from its infrastructure and features without incurring significant expenses. It allows researchers to upload and publish datasets, assign persistent identifiers (e.g., DOIs), and provide metadata for discoverability—all within a cost-free framework. This aligns with the principle of Open Science, promoting transparency and accessibility of research data. Moreover, the ERA_FABRIC community page is integrated with the official EU Open Research Repository hosted on Zenodo.

2.3. Making data inter-operable

In line with promoting openness and accessibility, ERA_FABRIC prioritizes the use of open-source formats over proprietary formats when it comes to dataset files uploaded to Zenodo. By utilizing open-source formats, the project aims to ensure that the data generated and shared within the consortium can be easily accessed, utilized and built upon.

2.4. Making data re-usable

As a publicly funded project dedicated to improve inter-regional cooperation and development in terms of knowledge and innovation ecosystems, the project partners will adopt Creative Commons Attribution (CC BY) and Creative Commons Zero (CC0) licences for research results which are publicly available. The CC BY license enables others to freely use and incorporate the research data and results into their own projects, thereby fostering collaboration, knowledge sharing, and innovation. This aligns with the goals of improving inter-regional cooperation and development in terms of knowledge and innovation ecosystems.

3. Allocation of resources

3.1. *Costs*

Using an open-source tool like Zenodo as a repository for ERA_FABRIC can help minimize additional costs in terms of software licensing or proprietary tools. Since Zenodo is freely available, it eliminates the need to invest in expensive software or platforms for data management or any additional costs apart from those already planned in the project proposal.

3.2. Distribution of roles across the consortium

Data management will be carried on by defining different roles among project partners:

a) The Data Management Coordinator (DMC) – mainly at WP leader level
b) The Data Management Operators (DMO) – persons at partner institutions nominated to work on DMP

REFERENCES

- DMP Online: https://dmponline.dcc.ac.uk/plans/120707/edit?phase_id=8676
- ARGOS: https://argos.openaire.eu/splash/
- SOPS4RI Toolbox: https://sops4ri.eu/toolbox/
- Research-EU Data Management Plan
- How to comply with Horizon Europe mandate for Research Data Management https://www.openaire.eu/how-to-comply-with-horizon-europe-mandate-for-rdm
- Zenodo Privacy Policy https://about.zenodo.org/privacy-policy/

ANNEX 1 - ERA_FABRIC Updated Data Summary

Type of data	Description	Task	Purpose	Repository link	File format
Work package WP2 - ERA Hubs as Knowledge Ecosystems					
Documents	Map of EU Place-based R&I ecosystems focusing on sustainable manufacturing, bio-based circular economy and clean renewable energy.	2.2.CNR	To provide an overview of related experiences and good practice examples within the EU's advanced and emerging regions.	Resource available on CORDIS	PDF, Public
Questionnaires	EU-wide stakeholder survey on the most recurrent characteristics of knowledge ecosystems	2.3. TTP	Questions will delve into the success factors detected by ERA Hub concept - pilot phase	https://zenodo.org/records/14281808	Excel, Restricted
Documents	Report on the assessment of the degree of conformance of partner regions to the ideal type "ideal type" of ERA Hub.	2.4.WUT	To compare the current performance of partner regions and countries to ERA Hub as a reference model	Resource will be made available after the project's end	PDF, Public
Websites, patent, filings, videos, etc	Self-assessment tool for regional innovation policy makers and stakeholders will provide a set of policy priorities and strategies	2.5.UNIST	Assessment will identify characteristics of the ecosystem (strong, emerging, etc.)	Resource will be made available after the project's end	Public

Type of data	Description	Task	Purpose	Repository link	File format
Work package WP3 – ERA Hubs as Multi- Stakeholder Platforms					
Documents	Mapping of existing stakeholders in project partners' regions	3.1.UNIST	It will provide an overview of stakeholder's impact on the knowledge and innovation ecosystem and role in the quintuple helix model	https://zenodo.org/records/14006511	PDF, Public
Documents	4 journal papers / conference proceedings	3.1.UNIST, 3.2.ADRNV	Papers will be based on findings of working groups meetings and mapping of main policies and instruments. They will grasp on knowledge flows, main challenge, synergy opportunities.	Resource will be made available after the project's end	PDF, Public
Documents	Analysis of the main research and innovation policies and strategies in the ERA_FABRIC regions	3.2.ADRNV	It will pave the way for the gap analysis to identify what is missing to foster K ecosystems and improve the effectiveness of public research and innovation investments	Resource available on CORDIS	PDF, Public
Documents	Syllabus for executive training and capacity building articulating the key features of a Theory of Change	3.3.UNIST	Open access Syllabus will be implemented via minimum 6 webinars, also open to the participants of non-members of the consortium	Resource will be made available after the project's end	PDF, Public
Documents	Collection and description of best practices of governance rules and arrangements.	3.5.ECOPLUS	Policy recommendations based on learnings in the project.	Resource will be made available after the project's end	PDF, Public

Type of data	Description	Task	Purpose	Repository link	File format
Work package WP4 – ERA Hubs as a transformative set of measures and tools					
Documents	Definition of the ERA Hubs theory of change as a catalogue of measures and tools	4.2.EURECAT	To combine results from tasks 4.1., 4.2., 4.3. and 4.4. which should allow ERA Hubs theory to be replicable and implemented in other ecosystems.	Resource will be made available after the project's end	PDF, Public
Documents	ERA hubs theory of change report	4.5.EURECAT		Resource will be made available after the project's end	PDF, Public
Work package WP5 – Monitoring, evaluation and standards					
Documents	Monitoring and Evaluation methodology for ERA_FABRIC activities	5.1.MU	Monitoring and Evaluation methodology for ERA_FABRIC activities, directly based upon the definition of Theory Change	Resource will be made available after the project's end	PDF, Public
Documents	Impact and outcome evaluation	5.2.TTP	Dissemination purposes	Resource will be made available after the project's end	PDF, Public
Websites, patent filings, videos, etc.	40 interviews	5.2.TTP	Communication of project news and results, validation of project's concept, findings and advancements.	Resource will be made available after the project's end	PDF, Public
OTHER (as defined in Deliverable 5.4.)	Definition of standards and a quality label	5.4.MU	To ensure that validated KPIs and metrics are further used as standard procedures and to define a quality label of future ERA Hubs.	Resource will be made available after the project's end	PDF, Public

Type of data	Description	Task	Purpose	Repository link	File format
Work package WP6 – Widening and sustainability					
Documents	Profiling and (tentative) classification of ERA Hub schemes	6.3.EURECAT	These schemes will act as reference models, facilitating their recognition and future take-up according to the specificities of each involved ecosystem.	Resource will be made available after the project's end	PDF, Public
Documents	Policy recommendations on implementing ecosystems	6.4 ART-ER	To improve the innovation performance of regions and countries.	Resource will be made available after the project's end	PDF, Public
Documents	ERA_FABRIC business plan and roadmap	6.5.INESCTEC	It will help achieve long term sustainability of the average ERA Hub	Resource will be made available after the project's end	PDF, Public
Work package WP7 – Communication, Dissemination and Public Engagement					
Documents	Communication and dissemination plan	7.1.WUT	It contains communication and dissemination strategy, main messages, targets and channels, planning and scheduling local and international events and monitoring indicators.	Resource available on CORDIS	PDF, Public
Websites, patent filings, videos, etc.	ERA_FABRIC policy brief 1&2	7.1.WUT		https://zenodo.org/records/13919978	Public
Websites, patent filings, videos, etc.	E-brochure and E-leaflet	7.2.WUT	To support the awareness and promotion of ERA_FABRIC, its vision and concept	https://erafabric.eu/resources/e-brochures-and-e-leaflets/	PDF, Public

Type of data	Description	Task	Purpose	Repository link	File format
Websites, patent filings, videos, etc.	Project web platform and newsfeed	7.2.WUT	To ensure a visible presence of ERA_FABRIC, providing general information about the project, its advances, multimedia contents, news and posts to state current developments.	https://erafabric.eu/	Public