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## M7.4 - Impact Report [D&E&C results preliminary version]

Work Package	WP 7, Dissemination, Exploitation and Communication
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<input type="checkbox"/>	PP: Restricted to other programme participants (including the Commission)
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<input type="checkbox"/>	CO: Confidential, only for members of the consortium (including the Commission)



## Versioning and contribution history

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### Disclaimer

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## Table of Contents

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Versioning and contribution history.....	2
Executive Summary.....	5
1. Introduction.....	6
2. Stakeholder Engagement & Impact achieved.....	7
3. Support Programme Engagement Results.....	10
4. FAIR-IMPACT Use Cases.....	15
5. Engagement at national level: the National Roadshows.....	22
6. FAIR Implementation Framework - The Catalogue.....	27
7. Synchronisation Force.....	28
8. FAIR Champions as ambassadors for the project.....	31
9. Online engagement.....	33
10. Events, webinars & third-party events.....	36
11. Conclusions and next steps.....	40
Annex 1.....	41

## Table of figures

---

Figure 1: FAIR-IMPACT target stakeholders at April 2024	7
Figure 2: Map of community members from Europe	8
Figure 3: Map of community members globally	9
Figure 4: Participants to the panel discussion with support action participants at the FAIR-IMPACT's Community Event in January 2024	11
Figure 5 FAIR Implementation Framework	12
Figure 6: Reconfiguration of the EOOSC-A Task Forces	14
Figure 7: online form to suggest resources for the FAIR-Implementation Catalogue	27
Figure 8: Examples of FAIR-IMPACT Social Media messages (LinkedIn, Twitter & YouTube, from left to right)	33
Figure 9: FAIR-IMPACT homepage hero as of May 2024	34
Figure 10: Website users by country	35

## Table of tables

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Table 1 Overview of social media followers	33
Table 2: Newsletters distributed in the second reporting period	34



## TERMINOLOGY

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Terminology/Acronym	Description
CSA	Coordination and Support Action
D&E&C	Dissemination & Exploitation & Communication
DoA	Description of Action
EC	European Commission
EFC	EOSC FAIR Champions
EOSC	European Open Science Cloud
ESFRI	European Strategy Forum on Research Infrastructures
GA	Grant Agreement to the project
GDPR	General Data Protection Regulation
NLI	National Level Initiatives
NFDI	Nationale Forschungsdateninfrastruktur (National Research Data Infrastructure in Germany)
ODRL	Open Digital Rights Language
RI	Research Infrastructures
RPO	Research Performing Organisations
RoP	Rules of Participation
SF	Synchronisation Force
SDG	Sustainable Development Goal
SRIA	Strategic Research and Innovation Agenda of the EOSC
SWHIDs	SoftWare Hash IDentifiers

## Executive Summary

The overall objective of WP7 “Dissemination, exploitation and communication” is to address dissemination, exploitation and communication of the project at all levels and through multiple modalities to ensure the FAIR-IMPACT objectives and impacts are achieved. To assure this, an effective and efficient communication, dissemination and stakeholder engagement strategy and plan was defined at the beginning of the project (*D7.1 Dissemination, exploitation and communication plan*, delivered in M3).

The plan was built around **four specific campaigns**, each one with clear objectives and actions custom designed around the target **stakeholders** that the project is addressing.

The campaign-based approach ensures coverage of all the activities and outputs subject to the promotion and outreach plan and to monitor their assessment, and will be continued also in the second reporting period. An effective and smooth coordination and organisation of the **project events** as well as increased visibility of the project and its activities at **third party events** will be maintained across all the four campaigns above, and an initial list of events organised and attended in the first 24 months is provided in **this report**.

The implementation of the plan depends on the active support of FAIR-IMPACT partners and progress will continue to be monitored through fortnightly virtual WP meetings and a monitoring plan, including in this report. Additional meetings may be scheduled at any appropriate time throughout the project duration, if necessary.

The success of WP7 is based on the joint and coordinated effort from all FAIR-IMPACT partners not only on the communication activities but also on the quality of the technical, scientific and content-related work that will be developed during the project time frame.

The present report provides preliminary information on the impact already achieved, as well as expected to be achieved, by the project activities and outputs, through the project’s dissemination, exploitation and communication actions by the end of the second year of FAIR-IMPACT.

# 1. Introduction

FAIR-IMPACT WP7 is in charge of ensuring that the dissemination, exploitation and communication activities of all FAIR-IMPACT WPs is done smoothly through multiple modalities, to properly promote project results to the key targeted stakeholders.

The impact achieved so far thanks to the variety of activities implemented in the context of the FAIR-IMPACT project is already remarkable. Dissemination had been capillary across stakeholders, organisations and individuals in Europe (and beyond). While the following chapters provide an overview of the dissemination, communication and exploitation key channels exploited and the results in terms of engagement achieved so far, it is also worth highlighting that FAIR-IMPACT also fully contributes to a few of the SDGs of the United Nations.

FAIR-IMPACT contributes to to **SDG 8 Decent Work and Economic Growth** working towards achieving its specific impacts #3: Adapted guidelines and frameworks for FAIR data, research software, semantic artefacts. FAIR enabled at Trustworthy Digital Repositories (TDRs) through the functional assessment of repository trustworthiness and data FAIRness, and #5: Active, engaged and informed research communities supporting the implementation of an operational, open and FAIR EOSC ecosystem through increased uptake and adoption at cross-domain and pan-European level.

FAIR-IMPACT fully contributes to **SDG 9 Industry, Innovation and Infrastructure** working towards achieving its specific impacts #1: A coherent implementation of PIDs across the EOSC, #2: Federated research objects in EOSC enabled by better governance of FAIR semantic artefacts and clear, common ways to interact with metadata and ontologies, #4: Increased data accessibility for researchers and other European data users and stakeholders, and #6: Clear and functioning mechanisms for supporting the governance, coordination, and collaboration activities carried out by the EOSC Partnership.

FAIR-IMPACT partially contributes to **SDG 5 Gender equality, SDG 10 Reduced inequalities and SDG 17 International cooperation**. Open Science and the FAIR principles are at the core of the project. All open calls for support on behalf of the project follow open and transparent procedures with regards to participation, selection and evaluation, adhering to the limitations set by the European Commission.

## 2. Stakeholder Engagement & Impact achieved

While the broad categories of stakeholders that FAIR-IMPACT is addressing are confirmed as the same as at the start of the project in June 2022, the number of initiatives and entities actually part of the stakeholder categories enlarged, mainly due to the start of new projects and the evolution of the EOSC governance bodies.

The visual below gives an overview of FAIR-IMPACT stakeholders, starting by the EOSC partnership including the Board of Directors of the **EOSC Association** and a selection of Task Forces under the EOSC Association that are most relevant for the FAIR-IMPACT focus areas (top-left). FAIR is also in the remit of **European projects**, especially those in the HORIZON-INFRA-EOSC funding scheme (top, including 2021 and 2022 lines of funding), as well as the most recent granted projects in support of European Research Infrastructures (Horizon 1.3 projects), as well as the Open Science projects (former ESFRI Cluster projects and those recently funded under the umbrella of the OSCARS project) and a few newcomers from the food sector. The EOSC Technical Core projects and its discipline-independent providers complete the list of EOSC-related stakeholders (right-hand side).

Finally, representatives of regional and national initiatives and repositories (middle-left), Open Science initiatives (bottom-left), individuals and representatives of Journals are also part of the project stakeholders, and have been engaged in dissemination and synchronisation activities.

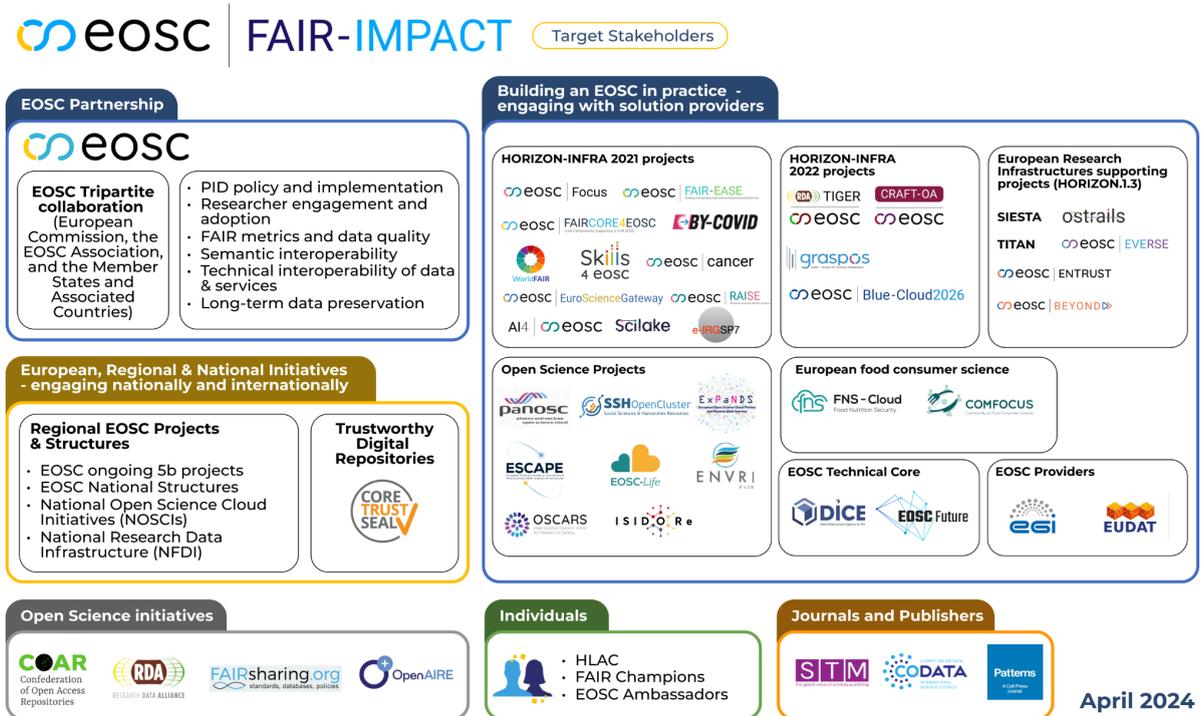


Figure 1: FAIR-IMPACT target stakeholders at April 2024

The overall FAIR-IMPACT members community, registered on the FAIR-IMPACT website, shows active participation from different countries in Europe, and also interest from outside

the European territories. More than 2K users, representing more than 80 countries, have registered on the FAIR-IMPACT website. They are subscribers of the project events, open-call applicants and/or webinar/workshops participants.

Below, the two geographic maps offer statistics of the main countries interested.

### The European engagement

The FAIR-IMPACT community covers 29 European countries (EU27 + UK and Switzerland), with 1360+ European users registered.

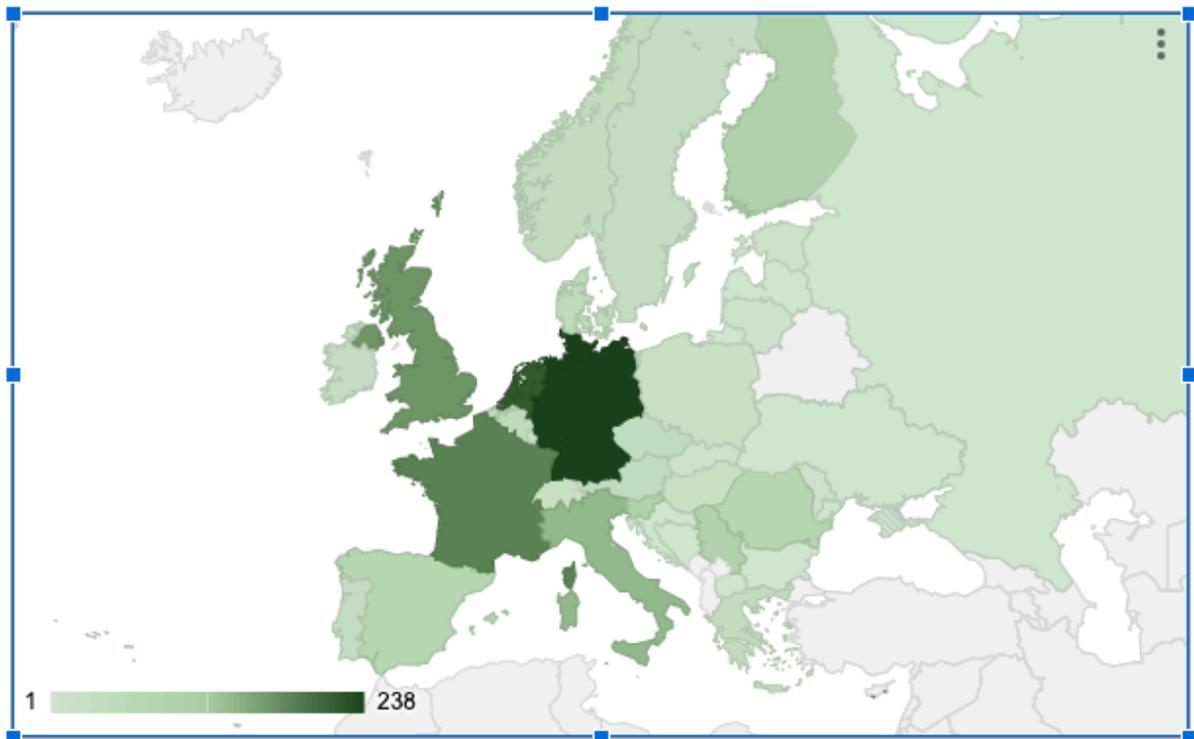


Figure 2: Map of community members from Europe

### The international engagement

Overall the 2040 registered users come from 81 countries, as in the map below.

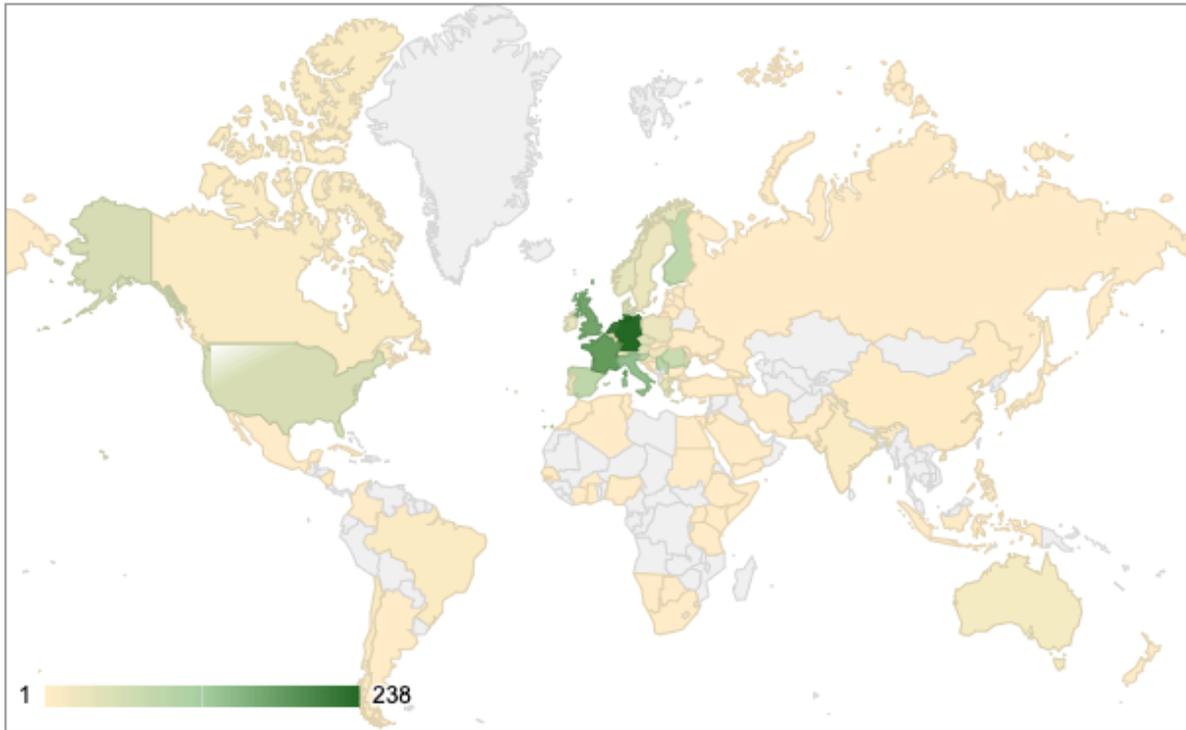
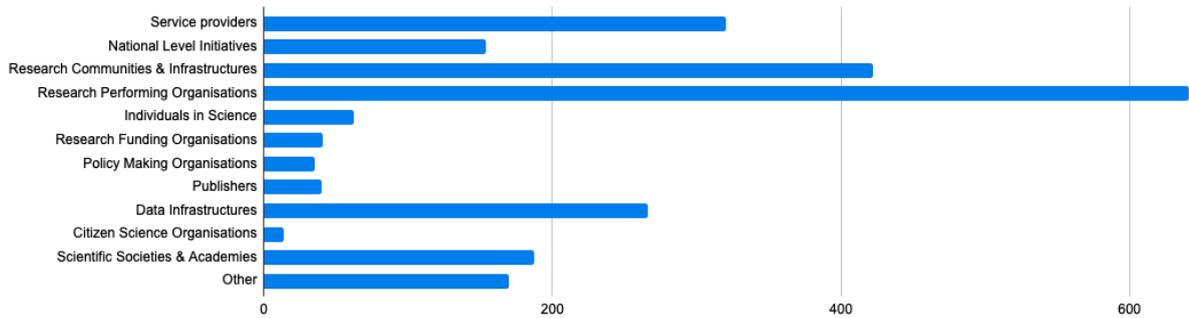


Figure 3: Map of community members globally

Many of the organisations and institutions - and therefore their users - fall into multiple stakeholder categories and organisation types. As a result, the chart of these organisations shows individuals or groups that belong to more than one category.

**The represented organisation types**



### 3. Support Programme Engagement Results

FAIR-IMPACT provides three support routes to help our key stakeholder groups become more FAIR-enabling<sup>1</sup>. Route 1 support provides in-kind support in the form of guidance and one-to-one support. Route 2 support is administered via cascading grants to enable testing of specific tools, approaches and methods. Route 3 support is provided via our series of FAIR Implementation Workshops which are free and open to anyone to join.

**Four open calls** for support have been launched so far - two for financial support and two for in-kind support. A final open call for financial support will be launched in September 2024.

The first open call for financial support included two support actions - the 'FAIRness Assessment Challenge' and 'Enabling FAIR Signposting and RO-Crate for content/metadata discovery and consumption'<sup>2</sup>. The call opened at the end of March 2023 and a total of 51 applications were received. A total of 32 applicants were invited to join the support actions based on the evaluation of applications. The support actions ran from September to November 2023 and the cohort was made of participants from 19 countries including Member States, Associated and other countries. The majority indicated that they are RPOs (32%) with Service Providers and Data Infrastructures coming second (30%), and Research Communities & Infrastructures and Individuals in Science, Scientific Societies and Academies coming third (25%). A slight majority of the participants in the cohort come from the Natural Sciences (29%) closely followed by Engineering and Technology (24%). It is important to note that a high proportion of participants identified as being Multidisciplinary (24%). Medical and Health Sciences and Humanities were less well represented in the applications received to the first open call but we ensured that we had representation from both groups in the cohort of successful applicants (9% and 6% respectively).

Overall, the feedback from the participants from the first two support actions was very positive. Participants said the support action helped them improve their knowledge in the topics and gave them an opportunity to have some focus time to work on them. They also valued the opportunity to network and getting to know others interested in implementing similar solutions. Some participants contacted their platforms and repository managers to implement new features extending the impact to other users of those platforms and repositories.

A panel of participants from the first two support actions provided a summary of their experiences during FAIR-IMPACT's Community Event<sup>3</sup> in January 2024.

<sup>1</sup> <https://fair-impact.eu/fair-impact-open-calls-support>

<sup>2</sup> <https://fair-impact.eu/1st-open-call-route-2-support-closed>

<sup>3</sup> <https://fair-impact.eu/events/fair-impact-events/fair-impact-community-event>

**14:40-15:00 Panel discussion with support action participants**

Following FAIR-IMPACT [first open call](#), successful applicants joined one of two support actions that were delivered from September to November 2023. One was a FAIRness Assessment Challenge using tools such as F-UJI, FOOPS, and O'FAIRE, and the other focused on enabling FAIR Signposting and RO-Crate to support content/metadata discovery. This panel discussion will share the experiences of some of the participants in these first two support actions.

Chair: **Joy Davidson**, Digital Curation Centre

Panel members:

- **Dieuwertje Bloemen**, LIBIS @ KU Leuven
- **Agneta Ghose**, DCEA, Aalborg University
- **Bora Lushaj**, Erasmus University Rotterdam
- **Chokri Ben Romdhane**, CNUST
- **Magdalena Szufliita-Żurawska**, Open Science Competence Center, Gdańsk University of Technology Library
- **Alsu Shakirzyanova**, Datrix SPA
- **Dagmar Waltemath**, Medical Informatics Laboratory, University Medicine Greifswald

Figure 4: Participants to the panel discussion with support action participants at the FAIR-IMPACT's Community Event in January 2024

Some of the positive impacts that panellists mentioned include:

- Being better able to benchmark current practices with regard to FAIR and having a clearer idea on where improvements can be made
- Understanding that you shouldn't take the scores provided by FAIR assessment tools at face value. Instead, you need to understand what they are measuring and what the scores are actually telling you
- Being better able to make the case to senior management that a new repository system was necessary to support improved metadata requirements
- Helping to progress longer term actions in their domain and nationally
- Better able to make use of FAIR assessment tools in PhD level training to move beyond theoretical understanding of FAIR to a hands-on, practical understanding of FAIR

The **second open call** was for in-kind support targeting three key stakeholder groups - RPOs, Repositories and Data Service Providers, and National Level Initiatives<sup>4</sup>. The call opened at the end of August 2023. The **three support programmes** were designed to mirror the steps outlined in the FAIR Implementation Framework (Figure 2).

<sup>4</sup> <https://fair-impact.eu/2nd-open-call-support-opens-30-august>

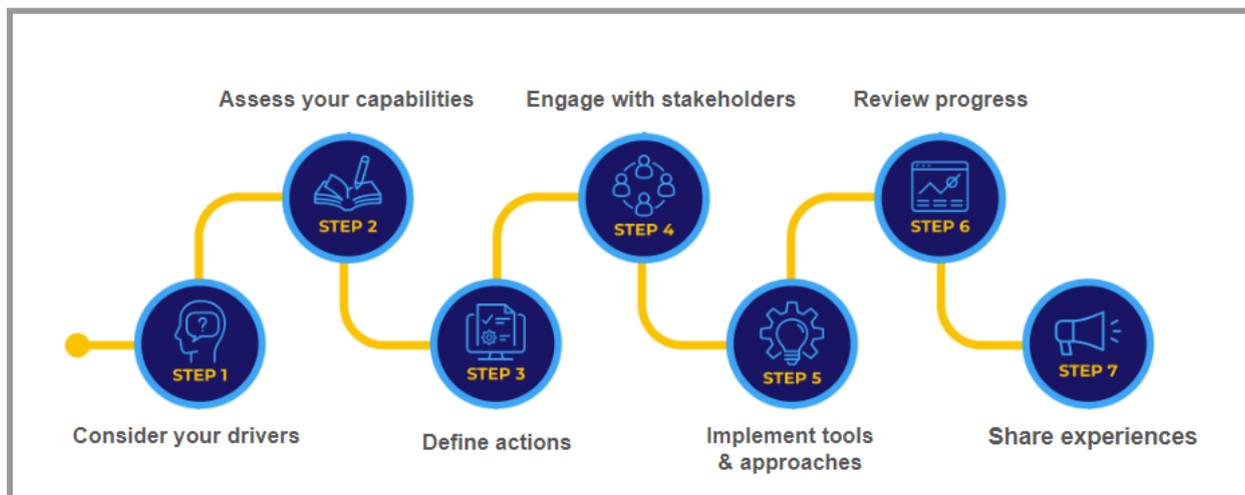


Figure 5 FAIR Implementation Framework

The three support programmes kicked-off in February and March 2024 and will run to September 2024. The cohorts are made of more than **50 participants from 27 participating organisations from 15 countries** including Member States, Associated and other countries.

The third open call was for financial support and was launched at the end of January 2024. It provided five support actions that applicants to apply to join<sup>5</sup>.

The support actions included:

- Assessing and improving existing research software
- Implementing the Research Software MetaData guidelines
- Creating EOSC compliant Persistent Identifier (PID) policies
- Recommendations for trustworthy and FAIR-enabling data repositories
- Improving the availability and machine readability of data policies with FAIRsharing

The call closed at the end of April with a total of **93 applications** across the five support actions. The finalisation of the cohort is currently in progress.

The fourth open call launched on 2 May 2024 and invites Repositories and Data Service Providers to apply to join the second running of our in-kind support programme<sup>6</sup>. The current open call will close on 14 June 2024.

<sup>5</sup> <https://fair-impact.eu/2nd-open-call-route-2-support>

<sup>6</sup> <https://fair-impact.eu/2nd-open-call-route-1-expert-non-financial-support-open>

All those supported by FAIR-IMPACT are required to take part in an exit interview which is used as the basis of a co-authored **FAIR Implementation Story**. These publications are intended to share some of the lessons learned and examples of good practices that have been gained through participation in the FAIR-IMPACT support actions and support programmes. The collection of stories is made available via our Zenodo community and a [dedicated area of the FAIR-IMPACT website](#)<sup>7</sup>. At the time of writing this milestone, the following Implementation stories were produced and are in the process of been uploaded on Zenodo:

#	Title	Summary	Main Author and institute
1	F-UJI for FAIRness assessment and PhD training at Gdansk University of Technology Library	The team from the Gdansk University of Technology Library and IT Center carried out a FAIRness assessment of datasets from their institutional multidisciplinary research data repository using the F-UJI tool with two goals in mind: increasing the FAIRness of the repository and learning about a tool that could be used to teach Ph.D. students about FAIR data and FAIRness assessments practically and visually.	Magdalena Szuflita-Żurawska, Gdansk University of Technology Library
2	Navigating FAIR Waters: A Journey of Transformation for Radboud University's Data Repository	A team from Radboud University's Research Data Repository used FDMM and F-UJI to assess the FAIRness of their service and as a starting point to create an action plan to improve it.	Didi Lamers, Radboud University,
3	Implementing FAIR signposting in the University of Novi Sad in-house developed eInfrastructure	The University of Novi Sad software research infrastructure development team implemented FAIR Signposting level 1 to improve the machine readability of their in-house developed platform for research outputs and information.	Dragan Ivanovic, University of Novi Sad
4	Implementing FAIR signposting to Eurac Research geospatial data catalogue	With the aim to improve the machine actionability of their Environmental Data Platform, a team from Eurac Research implemented signposting on their catalogue of geospatial datasets using a linkset document.	Piero Campalani, Climate and Disaster Risk group - Center for Climate Change and Transformation, Simone Tritini, Center for Sensing Solutions - Eurac Research
5	FAIRness assessment of Generations and Gender Programme longitudinal survey dataset	A team involved in the Generations and Gender Programme tested F-UJI, FDMM and SHARC to assess the FAIRness of their longitudinal panel survey dataset.	Arianna Caporali, French Institute for Demographic Studies (INED), Olga Grünwald, Netherlands

<sup>7</sup> <https://fair-impact.eu/implementation-adoption-stories>

#	Title	Summary	Main Author and institute
			Interdisciplinary Demographic Institute and Generations and Gender Programme (GGP)

A recent outcome that will possibly lead to effective impact with respect to engagement with National Level initiatives (NLI) with the **NLI Support programme** is the liaison with the EOSC mandated organisations via the EOSC Association. FAIR-IMPACT proposed to the EOSC Association a meeting with all EOSC mandated organisations to present them the NLI support programme and engage them for upcoming phases and support activities. After discussion with the Stakeholder Engagement and Outreach Officer of the EOSC Association, an online event will be organised with the mandated organisations and the agenda set-up in alignment with the new structure of the EOSC Task forces, namely focusing on Skills and Training: engaging with new Opportunity Area Group #5, Funding: engaging the EOSC Funders Forum, and the topics of the new task forces.

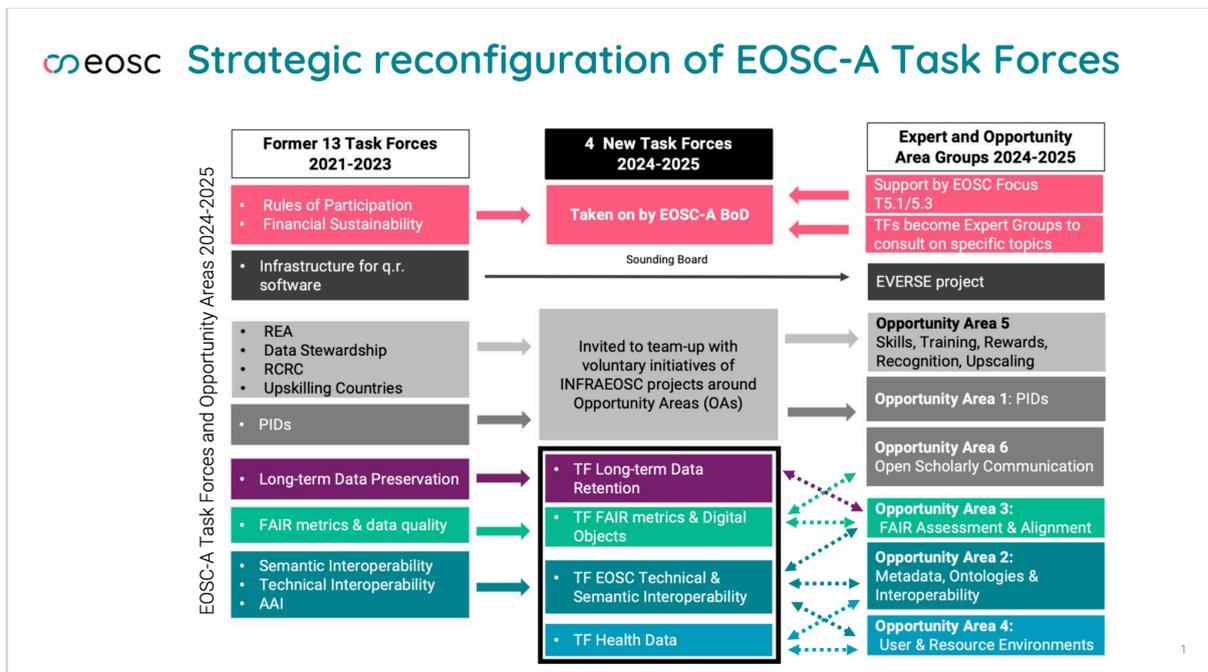


Figure 6: Reconfiguration of the EOSC-A Task Forces

## 4. FAIR-IMPACT Use Cases

The FAIR-IMPACT use cases identify practices, policies, tools and technical specifications towards a FAIR data management cycle starting with real-life use cases in four different domains (Agri-Food, Life Science, Photon & Neutron science, Social Sciences and Humanities). A series of “Use case stories” are being prepared by WP7 in collaboration with the Use case leading partners, published on the FAIR-IMPACT website and as downloadable resources via the FAIR-IMPACT Community on Zenodo.

At the time of writing the following use cases have been published and are being promoted across FAIR-IMPACT Channels:

### **Providing documentation on harmonised and citable PIDs for subsets of protected data. Use case by EMBL-EBI**

Webpage:

DOI: <https://doi.org/10.5281/zenodo.10091370>

Key topic: PIDs

Scientific domain: Life science

Leading organisation: EMBL-EBI

#### **Use case overview**

European Bioinformatics Institute is Europe’s largest provider of public biomolecular data resources. The institute is co-located with Elixir Hub and partnered up in many relevant EU projects, among others EOSC-Life, FREYA, and BY-COVID. This use case will explore PID practices in relation to complex data citation and sensitive data for the life science domain, and provide documentation on best practices to be adopted across domains. In addition to supporting life sciences, EMBL-EBI is increasingly also collaborating with other domains, e.g. social sciences in the context of Covid-19 research. EMBL-EBI provides consistent access to life science data by leveraging compact identifiers through the Identifiers.org resolution service. This service will be fine-tuned during the course of the project to ensure alignment with community FAIR practices and the broader EOSC context.

#### **Expected Impact of the Use Case**

More efficient use of PIDs in sensitive data will benefit especially research within health and medicine, and thus have great positive societal and economic value. Documented complex data citation practices in relation to PIDs support the generation of more qualitative data and effects positively on the reusability and reproducibility of research data. Co-designing the PID practices through EOSC alignment provides a research environment which is responsive to the needs of the various research communities.

## Encouraging and supporting researchers in producing FAIR computational workflows. Use case by University of Manchester

Webpage:

<https://fair-impact.eu/use-cases/encouraging-and-supporting-researchers-producing-fair-computational-workflows-use-case>

DOI: <https://zenodo.org/records/10091328>

Key topic: PIDs

Scientific domain: Life science

Leading organisation: University of Manchester - UNIMAN

This use case is based around the University of Manchester's work with Persistent Identifiers in data production workflows via its involvement in the [WorkflowHub](#) - a registry of computational FAIR workflows. WorkflowHub is sponsored by the European RI Cluster EOSC-Life, the European Research Infrastructure ELIXIR and supports multiple EOSC projects (BY-COVID, BioDT and EuroScienceGateway). Its initial users were from within the life sciences working with COVID-19 workflows, but is now used by over 140 research groups and projects across disciplines. The overall goal of this use case is to encourage and support [FAIR Computational Workflows](#), where workflow systems help researchers in producing FAIR data and recording provenance of their analysis, but also where workflows themselves become FAIR scholarly objects in their own right, appear in the scholarly knowledge graph, gets cited in academic papers, and so on.

### Expected impact of the Use Case

Through this use case work, we hope to achieve the necessary guidance for researchers to be able to get all relevant components of their computational workflows formally and persistently identified and thus be findable, reusable and citable by other researchers. This also makes it possible to capture provenance information. Furthermore, entire workflows can also become FAIR scholarly objects, equipped with their own identifiers and citing opportunities. All of these advancements significantly improve the traceability, transparency, reliability, and reproducibility of research.

To further encourage the use of this resource, there have been a number of workshops, which were well attended, including an '[Ask Me Anything](#)', which had representatives from many projects, including BioDT, BGE, BY-COVID, as well as representation from multiple Research Infrastructures. In addition, to promote this valuable resource, we have developed Project Specific guidance to assist new users, eg. BGE-tailored [guide](#) and BioDT-tailored [guide](#).

## Assessing FAIRness for Earth and Environmental Data. Use case by Dataterra and PANGAEA

### Webpage:

<https://fair-impact.eu/use-cases/assessing-fairness-earth-and-environmental-data-use-case-dataterra-and-pangaea>

DOI: <https://zenodo.org/records/10091238>

Key topic: Interoperability, Metadata & Ontologies, PIDs

Scientific domain: Earth and environmental sciences

Leading organisation: Dataterra (CNRS), Uni Bremen (PANGAEA)

In this use case, potential FAIR metrics for the Earth and Environmental Sciences community (here: solid earth and oceans excluding atmosphere and biosphere) are being discussed in collaboration with projects such as [GeoInquire](#), [FAIR-EASE](#), [Blue-Cloud](#) and [ENVRI-FAIR](#). For this purpose the FAIR habits of this community to find out if there are similarities in the use of e.g. identifiers, standards and vocabularies that justify deriving their own FAIR metrics from the existing FAIRsFAIR metrics will be analysed. We will investigate existing technical interfaces for metadata exchange and use FAIR implementation profiles of relevant data archives.

### Expected impact of the Use Case

The main impact of the use-case will be to create synergies between ongoing initiatives on FAIR and to reuse existing preliminary research on FAIR from the [GeoInquire](#), [FAIR-EASE](#), [Blue-Cloud](#) and [ENVRI-FAIR](#) projects. In particular, we will identify FAIR convergences between these projects and the data repositories involved in them. The resulting FAIR metrics will be used to derive tests in [F-UJI](#) that will be of significant help to the community in assessing and improving the FAIRness of individual datasets.

## PIDs for instruments in photon and neutron facilities science. Use case by STFC

### Webpage:

<https://fair-impact.eu/use-cases/pids-instruments-photon-and-neutron-facilities-science-use-case-stfc>

DOI: <https://zenodo.org/records/10090733>

Key topic: PIDs

Scientific domain: Photon & Neutron science

Leading organisation: STFC

The proposal of this use case is to advance the use of PIDs for instruments, such as instruments, devices, softwares and services, in the context of photon and neutron facilities (research infrastructures). This is an area of great interest in the community, for example assisting with assessing the impact of individual instruments. The RDA has a Working Group on Persistent Identification of Instruments that takes a cross-domain approach, but its specific application to PaN has not been fully explored.

## Expected outputs

It is not expected that within the FAIR-IMPACT project the work will lead to an implementation of PIDs for instruments. However it will result in a better understanding of the processes around the generation and use of such PIDs and how they could fit into the practices of photon and neutron facilities, as well as the use cases that motivate them and the implications for future implementation.

## Implementation of EOSC Interoperability Framework at STFC

Webpage:

<https://fair-impact.eu/use-cases/implementation-eosc-interoperability-framework-stfc>

DOI: <https://zenodo.org/records/10084442>

Key topic: Interoperability

Scientific domain: Photon & Neutron science

Leading organisation: STFC

The EOSC Interoperability Framework (EOSC IF) is a generic framework that can be used by all the entities participating in the development and deployment of EOSC, providing a common understanding of the requirements, challenges and recommendations that they should take into account, as well as a general set of principles on how these recommendations may be addressed.

The ambition of this use case is to create a questionnaire to compile and understand semantic practices in the use case institution. This first analysis will be done from the technical and semantic perspective defined in the EOSC IF and with dimensions inspired by its recommendations.

## Expected impact of the Use Case

Achieving this use case will allow to: i) understand semantic practices in an institution, ii) monitor the recommendations of the EOSC IF adopted and iii) improve the cataloguing of semantic practices in other domains. Results have been used to improve the WP6 questionnaire and the questions used in a testing checklist used in milestone M6.1. Results can also be used in WP4, specially in T4.2 Semantic artifact lifecycle and catalogues and to generate guidelines about usage of the components identified in the EOSC InteroperabilityFramework (EOSC IF) and that are, or will be, implemented and deployed in EOSC-related projects.

## Providing a recommendations document on PIDs usages

Webpage:

<https://fair-impact.eu/use-cases/providing-recommendations-document-pids-usages>

DOI: to be provided soon

Key topic: PIDs

Scientific domain: Life science

Leading organisation: INRAE

The main goal of this use case is the **production of a recommendations document on PIDs**, to be adopted and applied in the Institute. These recommendations concern different resource types, such as people, structures, events, sensors, documents and data. A specific effort has to be made on the versioning of PIDs and resources, especially for evolving data.

This recommendations document should lead research teams to adopt FAIR principles in their data management. Moreover, it should allow the Institute to propose new software services to implement these principles, as the Institute is responsible for registration of PIDs and related resolution.

### **Expected impact of the Use Case**

The recommendations document must inform the choice of researchers in the use of this or that PID. It should make it possible to harmonize these choices within the institute. Researchers and engineers who wish/can will be able to implement technical solutions implementing the recommendations themselves. Finally, these recommendations will allow the Institute to offer a PID management service guaranteeing their storage and resolution.

### **Referencing software source code artifacts: identifiers for digital object**

Webpage:

<https://fair-impact.eu/use-cases/referencing-software-source-code-artifacts-identifiers-digital-object>

DOI: to be provided soon

Key topic: PIDs

Scientific domain: Earth and environmental sciences, Life science, Photon & Neutron science  
Social Sciences and Humanities

Leading organisation: Software Heritage

Software Heritage is an international not-for-profit shared infrastructure supported by Unesco and Inria. Software Heritage's core missions are to collect, preserve and share the source code that is publicly available. The development history is permanently archived along the source code, in a uniform data model. Software Heritage ensures availability and traceability of software by attributing persistent and intrinsic identifiers called SWHIDs ("SoftWare Hash IDentifiers") to software source code artifacts. Currently, over 30 billion software artifacts in the Software Heritage archive are identified using SWHIDs. SWHID addresses the challenge of dealing with the different level of granularity of software artifacts: source code files, source trees, commits, and other objects typically found in version control systems. SWHID is a PID, independent of the development platform or technology, that can be computed from the designated object itself without needing a register to maintain the correspondence. The proposal is to advance the use of SWHID for referencing software source code artifacts.

### **Expected impact of the Use Case**

Dissemination of software referencing good practices among stakeholders, partners and end-users from different scientific communities.

## Advancing access interoperability with ODRL

Webpage: <https://fair-impact.eu/use-cases/advancing-access-interoperability-odrl>

DOI: to be provided soon

Key topic: Interoperability, Metadata & Ontologies

Scientific domain: Social Sciences and Humanities

Leading organisation: UESSEX-UKDS/CESSDA

The UK Data Service (UKDS) is a partnership between the Universities of Essex, Manchester, UCL, Edinburgh and Jisc and the UK service provider to the Consortium of Social Science Data Archives (CESSDA). The focus of this use case is on enabling machine actors to better interpret the currently ambiguous semantics of digital objects' access and usage conditions and secondly, to provide more specific guidance on how to encapsulate the definition and execution of access and usage conditions in FAIR signposting practices. The latter reference "license" as a link type but apart from referencing natural language license statements, this mechanism currently provides little scope for subsequent machine-actionable negotiation and execution of access/usage conditions for a digital object.

### Expected Impact of the Use Case

Working with our partners in CESSDA in the newly created Sensitive Data Working Group, UKDS will endeavour to be the exemplar for an initial real-world implementation of ODRL - Open Digital Rights Language - and will encourage and advocate for the uptake of similar practice by other Service Providers in CESSDA.

## Change triggers impacting PID generation for sensitive data within the Social Sciences

Webpage:

<https://fair-impact.eu/use-cases/change-triggers-impacting-pid-generation-sensitive-data-within-social-sciences-0>

DOI: to be provided soon

Key topic: PIDs

Scientific domain: Social Sciences and Humanities

Leading organisation: UESSEX-UKDS/CESSDA

The UK Data Service (UKDS) is a partnership between the Universities of Essex, Manchester, UCL, Edinburgh and Jisc and the UK service provider to the Consortium of Social Science Data Archives (CESSDA). The focus of this use case is on the research 'studies' of sensitive nature deposited at the UK Data Service and the subsequent derived data products. The sensitivity issue is the handling of information containing directly identifiable personal data or data that has the capacity to lead to reidentification, either through related variables within the dataset or through linkage with other data. We need to consider the implications involved in handling sensitive data for PID management and associated kernel metadata of a related identifier/object, e.g. for a repository identifier ("is currently approved to hold sensitive data") or a researcher identifier ("has current credentials for accessing sensitive data").



## Expected Impact of the Use Case

Leveraging on the expertise of a large international consortium among social science data archives, where we have access to use case specifications from across service providers ([CESSDA](#)) through the [UK Data Service](#). A well-designed guidance of PID usage for sensitive data (access and management), will provide better-aligned and documented practices that support the interoperability of organisations and digital objects, across secure environment borders. Furthermore, more efficient use of PIDs for sensitive data will benefit research, and thus have great societal and economic impact.

## 5. Engagement at national level: the National Roadshows

To better connect with national initiatives, FAIR-IMPACT is organising a series of “**FAIR National Roadshows**”<sup>8</sup>, conceived as online or on-site events with the aim of speeding up FAIR adoption by communities in different European countries. The roadshows extend the network of projects and initiatives that FAIR-IMPACT already collaborates with, introducing another platform to promote FAIR-IMPACT recommendations, good practices, and assessment tools. The National Roadshows are organised in collaboration with local facilitators, which can include university and research institutes active in the promotion and implementation of the FAIR principles in different European countries. The local facilitators are chosen strategically to identify the topic of the event, the target community and the channels for promotion.

Between September 2023 and May 2024 4 National Roadshows have been organised, another 3 have been scheduled are being organised, while others are still being planned to take place within 2024.

Multiple are the impacts of these events:

- **Collaboration with EOSC mandated organisations and visibility at EOSC governance level.** In collaboration with the EOSC Association outreach team, for each National Roadshow a representative of the mandated organisation in the given country was engaged to moderate the event. This facilitated the organisation of an EOSC oriented agenda, with inputs provided by the chairs, too, and visibility of the FAIR-IMPACT insights provided during the event towards the mandated organisation and EOSC governance. Each National roadshow is also promoted in the tripartite collaboration country pages on the EOSC website<sup>9</sup>
- **Visibility to entities and actors not yet engaged, sometimes new to the EOSC context.** The local facilitators engaged as co-organisers of the National Roadshow have the task to contribute to the agenda by providing topics or relevance for the countries and suggest speakers. They also are asked to help disseminate the event across their country and domain specific channels (email, newsletters at institute’s or network level as well as social media share), and this has already proved to be very effective with respect to the quality of the audience (i.e. target audiences appropriate to the topics discussed), interest of the participants and number of new people from the given countries that registered on the FAIR-IMPACT website.
- **Active engagement of the FAIR Champions and HLAC members.** The FAIR Champions have been asked to contribute to the event organisation. In some cases Champions and HLAC members are providing suggestions for the agenda and type of the event (Serbia, Norway, Greece, Ireland), are joining as chairs or speakers

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<sup>8</sup> <https://fair-impact.eu/events/national-roadshows>

<sup>9</sup> See for instance section “Upcoming events” in Austria <https://eosc.eu/tripartite-collaboration/austria/>

(Germany, Finland, Denmark) and in all cases are supporting the promotion of the event.

The rolling model of the series of National Roadshows is currently being discussed in the framework of the FAIR-IMPACT exploitation plan. A “National Roadshow Blueprint document”, is being drafted to be included in WP7 Communication, dissemination and exploitation reports, to provide suggestions and guidance on how to organise such a series of workshops. Information about resources needed to organise the series can be added to this, to help quantify the investment. This guidance document can be shared with initiatives and projects interested in bringing this effort forward.

At the time of writing the following National Roadshows have been organised:

#	Title / Country Date	Local facilitators, chairs	Registered participants*	Webpage
1	PIDs, Metadata, Interoperability: Open Science and Research Data Management Policies in <b>Slovenia</b> 28 September 2023	<b>University of Maribor and the Slovenian Open Science Community</b>	56	<a href="https://fair-impact.eu/events/national-roadshows/pids-metadata-interoperability-open-science-and-research-data-management">https://fair-impact.eu/events/national-roadshows/pids-metadata-interoperability-open-science-and-research-data-management</a>
2	Research Assessment and Open Science practices in <b>Serbia</b> 10 October 2023	<b>University of Belgrade, the University of Novi Sad and the Open Science Community in Serbia</b>	66	<a href="https://fair-impact.eu/events/national-roadshows/open-science-and-research-data-management-policies-serbia">https://fair-impact.eu/events/national-roadshows/open-science-and-research-data-management-policies-serbia</a>
3	FAIR practices for FAIR Dataspaces in the <b>German</b> research community 24 January 2024	<b>NFDI, the German National Research Data Infrastructure</b>	95	<a href="https://fair-impact.eu/events/fair-impact-events/fair-practices-fair-dataspaces-german-research-community">https://fair-impact.eu/events/fair-impact-events/fair-practices-fair-dataspaces-german-research-community</a>
4	Benefits of EOSC and international collaboration in service development for <b>Finnish Academia</b> <b>17 May 2024</b>	<b>CSC, University of Eastern Finland, Finnish Social Science Data Archive / University of Tampere, Federation of Finnish Learned Societies</b>	46	<a href="https://fair-impact.eu/events/national-roadshows/fair-impact-national-roadshow-finland">https://fair-impact.eu/events/national-roadshows/fair-impact-national-roadshow-finland</a>

\*(new - not already in the FAIR-IMPACT database)

Looking at the organisations mobilised for each of the countries where the roadshows took place, i.e. registered users part of the FAIR-IMPACT database, nowadays we count the following<sup>10</sup>:

**Slovenia:** ARNES, Central Technical Library of University of Ljubljana, Educational Research Institute, Elektroinštitut Milan Vidmar, FERI Maribor, Gozdarski Institut Slovenije, GOZDIS, Institute IRRIS, Institute of Criminology at the Faculty of Law, IRRIS, IZRK ZRC SAZU, Jožef Stefan Institute, Ministry of Higher Education, Science and Innovation, MVZI, National Institute of Biology, Slovenian Forestry Institute, Slovenian national building and civil engineering institute, Slovenian Social Science Data Archive, University of Ljubljana, University of Maribor, University of Maribor Library, University of Novo mesto, Univerza na Primorskem, Znanstvenoraziskovalni center SAZU, ZRS Koper

**Serbia:** BioSense Institute, Elektrotehnički institut Nikola Tesla, Embassy of Italy, Faculty of Philology, University of Belgrade (many different faculties), Faculty Of Technical Sciences, University of Novi Sad, FF UNS, IHTM Belgrade, Serbia, Institut for Oncology and Radiology of Serbia, Institut za kukuruz "Zemun Polje", Institute for Biological Research "Siniša Stanković" Institute for Literature and Art, Institute for Medical Research, Institute for the Application of Nuclear Energy, Institute for Vegetable Crops Smederevska environment, Institute of Musicology SASA, Institute of Pesticides and Environmental Protection, Institute of Technical Sciences of SASA, Institute of Veterinary Medicine of Serbia, Institute of virology vaccines and sera, Istraživač, Maize Research Institute, Maize Research Institute Zemun Polje, Ministry of Science, Technological Development and Innovation, NITRA, Scientific Veterinary Institute "Novi Sad", UKCV, University of Belgrade, University of Kragujevac, UNS Faculty of Agriculture

**Germany:** Alfred Wegener Institute, Base4NFDI, Bayreuth Universität, BBSR, Berlin Institute of Health @ Charité, Berlin-Brandenburgische Akademie der Wissenschaften, Bielefeld University Library, BIH QUEST Center for Responsible Research at Charité – Universitätsmedizin Berlin, Boehringer Ingelheim, Bundesministerium für Gesundheit / PG BIPAM, Central Institute for Mental Health, Cluster of Excellence Matters of Activity, DataCite, DESY, Deutsches Bergbau Museum, Deutsches Institut für Ernährungsforschung DIfE, Digital Science GmbH, DIN (German Institute for Standardization), DIPF, German Climate Computing Center (DKRZ), DLR, EMBL, EOSC Association, Euro-BioImaging ERIC, FAU, fdm.nrw, FDO Forum, FIZ Karlsruhe – Leibniz Institute for Information Infrastructure, Forschungszentrum Jülich, FSU Jena, Geoinformatics, Technische Universität Dresden, GEOMAR, German Aerospace (DLR), Gesellschaft für wissenschaftliche Datenverarbeitung mbH Göttingen, GESIS - Leibniz Institute for the Social Sciences, GFBio e.V. / PANGAEA / NFDI, GFZ, GHGA, Göttingen State and University Library, Göttingen State and University Library, GSH, GSI Helmholtzzentrum für Schwerionenforschung GmbH, GWDG, Harvard Medical School, Hasso Plattner Institute, Heidelberg Institute for Theoretical Studies, Heidelberg University, Helmholtz Association, Helmholtz Centre for Environmental

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<sup>10</sup> The lists refer to users registered on the FAIR-IMPACT database. Registrations come mainly but not only from the roadshows in those countries

Research, Helmholtz Centre Potsdam - GFZ German Research Centre for Geosciences, Helmholtz Metadata Collaboration, Helmholtz Munich, Helmholtz Open Science Office, Helmholtz-Zentrum Berlin, HITS gGmbH, Hochschule Mainz, Humboldt Universität Berlin, HZB, HZDR, IGDORE, IMISE University of Leipzig, Leipzig University, Institute of Molecular Biology (Mainz), IOER, Dresden, IPK-Gatersleben, Julius Kuehn Institute, Karlsruhe Institute of Technology, Leibniz Center for Agricultural Landscape Research (ZALF), Leibniz Information Centre for Economics, Leibniz Institute for Agricultural Engineering and Bioeconomy, Leibniz Institute for Astrophysics Potsdam (AIP), Leibniz Institute for Psychology (ZPID), Leibniz Institute of Freshwater Ecology and Inland Fisheries (IGB), Leibniz Institute of Vegetable and Ornamental Crops (IGZ), Leibniz Universität Hannover, Leibniz-Institut für Katalyse e.V., Rostock, Germany & NFDI4Cat, Leibniz-Institut für Psychologie (ZPID), LfBi, LfBi, Ludwig-Maximilians-Universität München, Mainz University for Applied Sciences, Mannheim University Library, Max Planck Institute for Empirical Aesthetics, Max Planck Institute of Molecular Cell Biology and Genetics, Max Planck Institute of Molecular Cell Biology and Genetics, MPIK, MPIK, Nationale Forschungsdateninfrastruktur (NFDI) , NFDI4BIOIMAGE, OFFIS e. V., PANGAEA/HMC, Physikalisch-Technische Bundesanstalt (PTB), University of Rostock, Aachen University, Senckenberg – Leibniz Institution for Biodiversity and Earth System Research, Siemens, SLUB Dresden, Splashlake GmbH, State and University Library Göttingen, Technical University of Munich, Technische Informationsbibliothek (TIB), Hannover, Thuringian Ministry of Finance, Germany, TIB – Leibniz Information Centre for Science and Technology, tsenso GmbH, UKA/RWTH/NFDI4Microbiota, Ulm University, UMH Halle, uni Hohenheim, Uni Stuttgart, Uni-Freiburg, Universität Bremen, Universität Hamburg, Universität Stuttgart, Universität zu Köln, Universitätsbibliothek Johann Christian Senckenberg, Universitätsbibliothek Kassel, Universitätsklinikum Heidelberg, Universitätsmedizin Göttingen, University and State Library Düsseldorf, University Geisenheim, University Medicine Greifswald, University of Bonn, University of Freiburg, University of Münster, University of Passau, University of Osnabrück, Verbundzentrale des GBV, VZG, World Bank, ZB MED - Information Centre for Life Sciences, ZBW - Leibniz Information Centre for Economics, Zentrum für Konstruktive Erziehungswissenschaft, ZMO

**Finland:** Aalto University, AAPA CIO Forum, Åbo Akademi University, Arcada, CSC - IT Center for Science, EUDAT, Euro-Biolmaging, Finnish Digital Agency, Finnish Environmental Institute, Finnish Geospatial Research Institute, Finnish Institute for Health and Welfare, Finnish Meteorological Institute, Finnish Social Science Data Archive, FSD, GTK, Haaga-Helia University of Applied Sciences, Hanken school of economics, Helsinki University Library, information specialist, Jamk University of Applied Sciences, LUT University, Metropolia University of Applied Sciences, National Library of Finland, Natural Resources Institute Finland (Luke), Novia University of Applied Sciences, Oulu University Library, Research Data Management Specialist, Solution Owner, Research Data Management, IT Customer Relationship Manager, Tampere University, The National Library of Finland, The University of Helsinki, Turku University of Applied Sciences, University of Eastern Finland, University of Eastern Finland, University of Helsinki, University of Jyväskylä, University of Oulu, University of Turku, University of Vaasa

The following Roadshows have been scheduled and are being organised:



#	Title / Country Date	Local facilitators, chairs	Webpage
5	Advancing Research Data Management and Open Science <b>in Austria</b> <b>18 June 2024</b>	Graz University of Technology, in Austria	<a href="https://fair-impact.eu/events/national-roadshows/fair-impact-national-roadshow-austria">https://fair-impact.eu/events/national-roadshows/fair-impact-national-roadshow-austria</a>
6	Data interoperability: from discussion to practices in <b>Norway</b> <b>16 September 2024</b>	University of Oslo Library, Sikt	Under preparation
7	FAIR Principles in national and institutional data management policies in <b>Denmark</b> <b>4 October 2024</b>	Danish e-Infrastructure Consortium (DeiC), University of Copenhagen and Copenhagen Business School, in Denmark.	<a href="https://fair-impact.eu/events/fair-principles-national-and-institutional-data-management-policies">https://fair-impact.eu/events/fair-principles-national-and-institutional-data-management-policies</a>
8	FAIR-IMPACT National Roadshow The Netherlands <b>17 October 2024</b> <b>Hybrid</b>	<a href="#">RDNL</a> Research Data Netherlands (DANS, SURF (both FI-partners), Health-RI and 4TU.ResearchData) -	Under preparation

Planning is still ongoing for roadshows in Greece, Ireland, Romania and the UK.

## 6. FAIR Implementation Framework - The Catalogue

To support the adoption and implementation of existing and emerging tools, methods and resources, FAIR-IMPACT has developed the FAIR Implementation Framework (FIF, WP2) to help different stakeholders assess their drivers for becoming (more) FAIR-enabling and their current practices. A key component of the FIF is a **catalogue or resources** (<https://catalogue.fair-impact.eu/>) that users can use to identify tools and solutions most appropriate to support them in the implementation of the FAIR Principles, with direct links to the original resources.

The catalogue was built in collaboration with Task 2.2. An initial desktop research was run to select resources that were developed by the recently completed H2020 INFRAEOSC projects. The resource review led to the identification of 36 resources - among guidelines, methodologies and practice documents, metadata & ontologies, software & tools, training materials - that were included in the catalogues. From that initial list few were added and currently 43 resources are available in the catalogue (also listed in Annex 1). More resources are currently being collected via a webform<sup>11</sup> available on the FAIR-IMPACT website. A similar evaluation mechanism is in place to assess and approve the collected resources, which will be added to the catalogue.

Google Analytics has been set on the Catalogue to monitor the traffic. The promotion campaign has started, with the first news item about the catalogue being introduced in the January newsletter. A dedicated social media campaign will be run during the upcoming months, while the catalogue will also be promoted during online events and webinars.

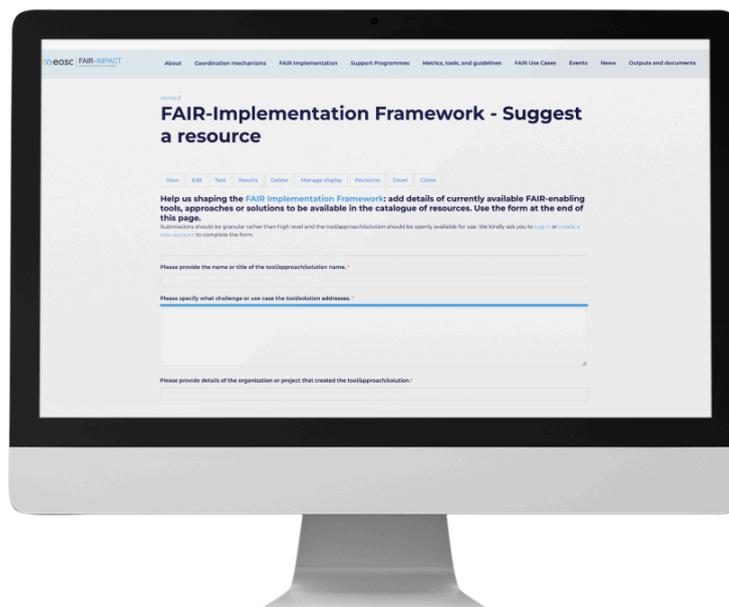


Figure 7: online form to suggest resources for the FAIR-Implementation Catalogue

<sup>11</sup> <https://fair-impact.eu/ImplementationFramework-inputform>

## 7. Synchronisation Force

The 2023 edition of the Synchronisation Force workshop featured seven online sessions from 2 November 2023 to 8 February 2024. The five core sessions covered aspects related to Metrics and assessing FAIRness, Metadata, semantics and interoperability, Persistent Identifiers, Trustworthy and FAIR-enabling repositories, Legal and organisational interoperability. Around 80 individuals from projects and initiatives in the EOSC framework, as well as beyond Europe, registered for the workshop series, each attracting 30 to more than 40 attendees.

The 2023 edition of the Synchronisation force mobilised the following projects and institutes:

**EU funded projects:** Blue Cloud 2026, BY-COVID, Comfocus, CRAFT-OA, e-IRGSP7, EGI-ACE, EOSC Focus, EOSC-FUTURE, EOSC-HUB, ESCAPE, EuroScienceGateway, FAIR IMPACT, FAIR-EASE, FAIRCORE4EOSC, FNS-Cloud, GIGAR-V, GraspOS, ISIDORE, OSTrails, RDA, RDA TIGER, SciLake, Skills4EOSC, WORLDFAIR.

**Institutes & research infrastructures:** Centre for Research and Technology Hellas, IT4Innovations National Supercomputing Center, KNAW-DANS, KU Leuven, Laboratoire d'Océanographie de Villefranche, Leibniz Universität Hannover, LifeWatch, Lund University, ICOS Carbon Portal, MARIS, NOC-BODC, Observatoire Astronomique de Strasbourg, OpenAIRE, OPERAS Research Infrastructure, Premotec GmbH, Radboud University Nijmegen, Research Software Alliance, Sikt, SOCIB, SURF, Tampere University, University of Manchester, TU Graz, TU Wien Library, UK Data Service, University of Essex, UKRI, Uni-Freiburg, Universidad Politécnica de Madrid, Universitat Politècnica de València, Université Côte d'Azur, CNRS, Inria, I3S, University of Copenhagen, University of Notre Dame, University of Trento, University Stefan cel Mare of Suceava

The impact of the Synchronisation Force event is recorded in the report released after the conclusion of the series<sup>12</sup>. It includes a few recommendations intended for consideration and review during the final Synchronisation Force session scheduled for late 2024. We briefly report them below, organised by discussion topics:

### Metrics and assessing FAIRness

- A broader community must be engaged and solicited for collaboration in developing a comprehensive catalogue of methods.
- The development, sharing, discoverability, and reuse of FAIR Implementation Profiles (FIPs) necessitate enhanced community cooperation. This collaborative effort is crucial for supporting the creation of domain-specific assessments, ensuring that the principles of FAIR are effectively implemented and tailored to specific research needs.

<sup>12</sup> <https://zenodo.org/doi/10.5281/zenodo.10959527>

- There is a pressing requirement to improve governance practices surrounding semantic artefacts.
- Conducting pre-assessment could facilitate the gradual enhancement of the FAIRness of research outputs throughout the research data lifecycle.
- Researchers require access to dedicated local support to assist the general and discipline-specific FAIRification processes of data, research software, and semantic artefacts.

### Metadata, semantics and interoperability

- Establishing a common understanding of semantic artefact definitions to minimise ambiguity is paramount. This common ground will facilitate more precise communication and interoperability across various domains.
- It is imperative to align semantic artefacts across different disciplines. While creating domain-specific ontologies and semantic artefacts is a prevalent practice, the methodologies for their development and management ought to be harmonised and shared to the greatest extent feasible. Enhancing access to and across registries could support this objective.
- The community requires expanding services that support the adoption and practical implementation of semantic artefacts. Such services are essential to ensure that the potential benefits of semantic interoperability can be fully realised across different research and data management contexts.

### Persistent identifiers

- Research communities and organisations should prioritise early and positive experiences with PIDs. Data stewards are to be instrumental in facilitating this communication, ensuring researchers understand the value and functionality of PIDs from the outset.
- PID providers are urged to ensure the long-term persistence of PID registries and the mechanisms for PID resolution. Research funders are proposed to establish a supportive funding structure to underpin the sustainability of these systems.
- PID providers are recommended to clarify the relationships between different PIDs, including how PIDs relate across different versions within a workflow and how PIDs can interlink entities, such as connecting a researcher's ORCID with a dataset's DOI. This recommendation calls for enhanced interoperability among PID systems, with encouragement from EOSC and financial backing from research funders for interoperability efforts.
- There is a call for PID providers and managers to clearly define the roles as outlined in the EOSC PID Policy, specifying who is accountable for each aspect of a PID system's maintenance. This also involves communication with research communities and their data stewards about these roles and responsibilities.

### Trustworthy and FAIR-enabling repositories

- Due to their evident advantages, support networks for repositories at all levels (thematic, national, and international) should be established.

- Increasing process transparency is vital to effectively assess repository trustworthiness, as encapsulated in the principle of "Trust through transparency."
- Repository support should include generic solutions for widespread applicability and detailed, customised support for specific local or individual needs.

### Legal and operational interoperability

- A clear management of permanent organisation names and functions needs to be provided.
- Standardised human and machine-readable licences, with a centralised source of knowledge and support on copyright and licences.
- A clear list of EOSC-recommended licences and their compatibility with Member States' recommended licences.
- GDPR compliance for personal data.

The Synchronisation Force is considered among the key functions to be sustained after the project conclusion (and included in D1.4 FAIR-IMPACT Sustainability plan). The value of the Synchronisation Force relies not just in the assessment of the implementation of the FAIR principles across initiatives and projects, but also, and most of all, in the dialogue and the discussion mechanisms the Synchronisation Force facilitates, by bringing together for short, 90 minute session actors interested in sharing practices and debating around implementation mechanisms around FAIR metrics and assessment, PIDs, metadata and semantic interoperability, FAIR enabling repositories and legal interoperability. The key result to be maintained is the set-up of this cross-disciplinary, ad-hoc community of stakeholders looking forward to the upcoming meetings and interested in getting informed about updates in the FAIR principles implementation mechanisms.

A survey was also conducted with the participants to the Synchronisation Force asking for feedback on the sustainability of the action. A few responses were received and will be taken into consideration for the organisation of the third series, scheduled from September 3rd to November 7th, 2024.

One of the received comments says:

*"It provides an excellent "exchange forum" where participants can discuss in depth how their projects/RIs/institutions are thinking about the relevant topics, how they now (or plan to) implement concrete practices, and what they believe is missing or not being taken into consideration"*

## 8. FAIR Champions as ambassadors for the project

The group of 13 EOSC FAIR Champions<sup>13</sup> selected to act as ambassadors for FAIR, engage their communities, and advocate for the adoption of the project results are pretty active across different activities of the project.

Their engagement so far is reported below:

**Sarah Barber, Affiliation: Eastern Switzerland University of Applied Sciences, Country: Switzerland.** Discuss about the collaboration with the wind energy community with respect to semantic artefact. Sara Hosted WP4 members (Clément Jonquet) giving a talk into Sarah Barber's group.

**Camilla Hagen Blixhavn, Affiliation: University of Oslo, Country: Norway.** Facilitator of the FAIR National Roadshow in Norway, scheduled on 16th September 2024.

**Giulia Caldoni, Affiliation: University of Bologna, Country: Italy.** Joined the All-hands meeting in The Hague, October 2023, dissemination of FAIR-IMPACT outcomes to the National chapter for Data Steward Community (Italy, Bologna), collaboration with GARR through Skills4EOSC.

**Javier de la Cueva, Affiliation: University of the Instituto de Empresa, Country: Spain.** Participation in the Synchronisation Force 2023 session on Legal & organisational interoperability, interviewed for T6.2 on legal interoperability, comments on use cases / schemas, preparing a podcast on Legal interoperability in collaboration with the FAIR Data podcast group.

**Romain David, Affiliation: ERINHA AISBL, Country: Belgium.** Participation & social media sharing for the event "PID best practices for complex data citation, semantic artefacts and related services, social media sharing of FAIR-IMPACT posts.

**Richard Dennis, Affiliation: Novo Nordisk Foundation Center for Stem Cell Medicine, University of Copenhagen, Country: Denmark.** Participated in the workshop on semantic artefact governance led by WP4, reviewer of applications for the 1st open calls on FAIRness assessment support, shared expertise to the discussions wrt to the link with OntoPortal/Dataverse in T4.5, reviewer of the Second report of the Synchronisation Force, 2023

**Anandhi Iyappan, Affiliation: EMBL, Country: Germany.** Facilitator and speaker at the FAIR National Roadshow in Germany, participation in WP4 semantic related activities, reviewer of applications for different open calls

**Mari Kleemola, Affiliation: Finnish Social Science Data Archive, Country: Finland.** Joined the All-hands meeting in The Hague, October 2023, facilitator and speaker at the FAIR National Roadshow in Finland, reviewer of applications for different open calls, supported

<sup>13</sup> <https://fair-impact.eu/eosc-fair-champions>

D5.1 social science for domain-specific metrics, giving her service provider perspective point of view.

**Geta Mitrea, Affiliation: University `Stefan cel Mare from Suceava, Country: Romania.** Reviewer of applications for different open calls, to be engaged as facilitator for the National Roadshow in Romania, under preparation

**Fotis Mystakopoulos, Affiliation: OPERAS AISBL, Country: Greece.** Reviewer of applications for different open calls, to be engaged as facilitator for the National Roadshow in Greece, under preparation

**Antonio Novellino, Affiliation: ETT SpA, Country: Italy.** Link with the Ocean data community and the Blue-Cloud 2026 initiative

**Susanna-Assunta Sansone, Affiliation: Oxford e-Research Centre, Country: United Kingdom.** Contributed to the discussion about the relation between semantic artefact catalogues and FAIRsharing especially with the release of T4.2.3, submitted resources for the FAIR Implementation Catalogue of resources on behalf of FAIRSharing, reviewer of applications for different open calls.

**Armin Straube, Affiliation: University of Limerick, Country: Ireland {Republic}.** Joined the All-hands meeting in The Hague, October 2023, to be engaged as facilitator for the National Roadshow in Greece, under preparation

## 9. Online engagement

The social media activity of the FAIR-IMPACT project is mainly focused on X, LinkedIn and Youtube channels. The instant and often live communication, during events, with the community members and interested parties, offers constant updates on outcomes and ensures visibility of the ongoing activities.

At the end of May 2024 (M24) the overall social media community counts almost 2K individuals/ organisations/ entities followers.

Twitter	LinkedIn	Youtube
At the end of May 2024, this social media has 1,195 Followers	At the end of May 2024, this social media community on LinkedIn gathered 723 followers	The channel has today 66 followers and 39 videos published, from interviews to webinars and event recordings

Table 1 Overview of social media followers



Figure 8: Examples of FAIR-IMPACT Social Media messages (LinkedIn, Twitter & YouTube, from left to right)

### Newsletters

At the time of this Milestone, the FAIR-IMPACT newsletter has **622** subscribers. Thirteen newsletters have been sent so far. The engagement rates of the latest issue sent out (at the beginning of May) is:

- Clicked **42.03%** (87 emails)
- Opened Messages **37.43%** (207 emails)

Issue	Title Issue	Distribution date
#6	<a href="#">Synchronisation Force 2023, results of the first open call, national roadshows &amp; events: enjoy our July newsletter!</a>	28th July 2023
#7	<a href="#">Three FAIR Implementation Workshops this August about the</a>	16th August 2023

Issue	Title Issue	Distribution date
	<a href="#">next FAIR-IMPACT OpenCall, Semantic Artefact Governance Workshop: our August newsletter!</a>	
#8	<a href="#">The second All Hands Meeting in The Hague - Events in the Spotlight and More</a>	6th October 2023
#9	<a href="#">A Lot Of Events Are Filling Up Our Autumn At FAIR-IMPACT! The New Series Of Workshops, The SynchForce 2023, Two Papers Published And Much More!</a>	14th November 2023
#10	<a href="#">16 January 2024 - start the new year with sparkles! Join the FAIR-IMPACT Community event!</a>	21st December 2023
#11	<a href="#">FAIR-IMPACT Second Open Call for Support   Apply before 31 March 2024</a>	5th March 2024
#12	<a href="#">Join us in enhancing our collective understanding of doing FAIR mapping</a>	29th April 2024
#13	<a href="#">Join the FAIR-IMPACT's Second Open Call Webinar Tomorrow   8 May 2024, 11:00 CEST</a>	7th May 2024

Table 2: Newsletters distributed in the second reporting period

### The FAIR-IMPACT website

The website consistently features current activities on the home page, with a call to action encouraging visitors to participate (see the image below).

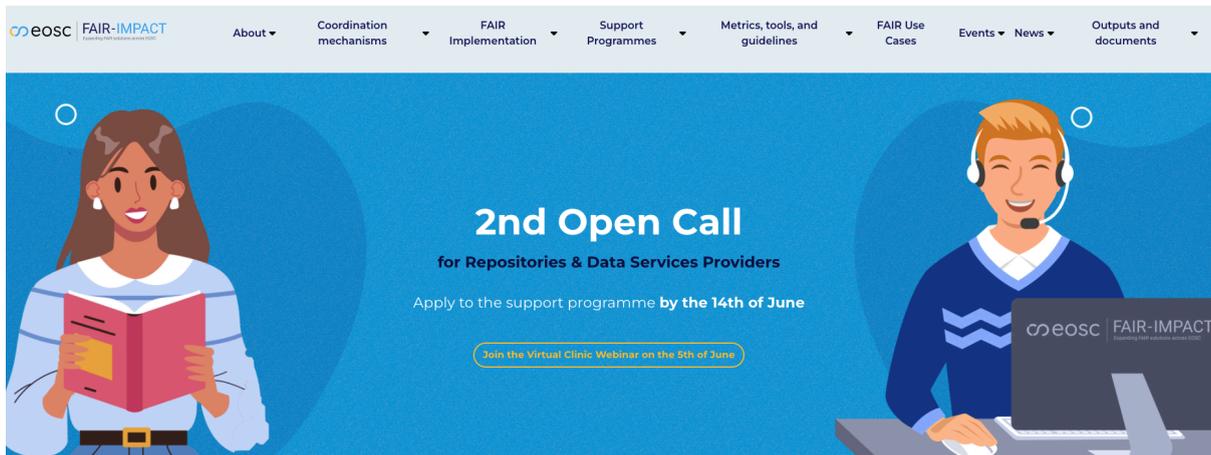


Figure 9: FAIR-IMPACT homepage hero as of May 2024

### Social media, website and FI user base

As of May 2024 the website had almost 24K sessions of organic traffic. The primary sources of this traffic are organic search and direct visits to the site. In addition, social media channels play the second in line and significant role in originating and driving organic traffic.

The graphic below shows the most represented countries by number of users.



Figure 10: Website users by country

**Note to the website traffic figures**

Concerning traffic to the project website, the following considerations need to be made: since the beginning we adopted a strict approach to user consent and cookies on the web platform. As a consequence of that, no cookie for the purpose of traffic and website usage statistics (Google Analytics) is allowed without explicit visitor consent. This strict approach has the obvious drawback that statistics in Google Analytics are severely underestimated, as users tend to reject cookies when the ability to do so is presented clearly and with no dark pattern approach to visually encourage the acceptance. We have kept completely anonymised and aggregated statistics of the acceptance rate of cookies, to get a better understanding of the more realistic number of visitors to the FAIR-IMPACT website and their visits (sessions). From May 2023 to May 2024, the analytics cookie acceptance rate has been 34,50%. In the table below we report the traffic values collected via Google Analytics and with the corrective factor applied are reported, providing more realistic estimated (extrapolated) values.

Period	Tracked in Google Analytics	Estimated values (with corrective factor applied)
Sessions	23,474	~ 68,000

## 10. Events, webinars & third-party events

### *FAIR-Implementation workshops*

The FAIR Implementation Workshop series aims to assist three key stakeholders—research-performing organisations, repositories and data service providers, and national-level initiatives—in becoming familiar with FAIR-enabling tools, approaches, and methods. To date, 12 implementation workshops have been organised since April 2023. Each workshop requires free registration and provides an overview of a specific FAIR-enabling activity, shares recent developments from both FAIR-IMPACT and other initiatives, and offers examples of good practice, practical tips, and recommendations. Each session lasts up to 90 minutes and includes ample time for questions and discussion.

Event Title	Date	Registrants
FAIR Implementation Workshop - Support for National Level Initiatives	25 Aug 2023	42
FAIR Implementation Workshop - Support for Research Performing Organisations	28 Aug 2023	71
FAIR Implementation Workshop - Support for Repositories & Data Service Providers	29 Aug 2023	69
1# Supporting FAIR adoption at the national level: Denmark	11 Oct 2023	87
Community Engagement: why it is key for Open Science and how to unleash it	23 Nov 2023	72
FAIR-by-Design Methodology: how to develop FAIR materials	4 Dec 2023	103
FAIR national plan in Germany and national initiatives to support FAIR in Romania	1 Feb 2024	20
Engaging researchers with FAIR-ness	2 Feb 2024	43
Open Access publishing in FAIR action plans	6 Feb 2024	38
2# Building FAIR skills at a national level	27 Feb 2024	99
French Data Management Clusters	4 Apr 2024	31
Assessing national current FAIR-enabling capabilities	14 May 2024	54

### *FAIR-Impact events and webinars*

A list of the FAIR-IMPACT events which were organised between April 2023 and May 2024 is provided below.

Event Title	Date	WP	Registrants
Webinar: FAIR-IMPACT's Virtual Clinic for potential applicants to the first Open Call	16 May 2023	WP2	37
Developing Guidelines for Metadata Collection and Curation for Research Software	23 May 2023	WP4	79
PID best practices for complex data citation, semantic artefacts and related services	25 May 2023	WP4	65
FAIR-IMPACT's Semantic Artefact Governance Workshop	28 Sep 2023	WP4	80
Workshop: FAIR-IMPACT's virtual clinic for potential applicants to the second open call for support	18 Oct 2023	WP4	49
Synchronisation Force 2nd Workshop - November 2023	2 Nov 2023 - 8 Feb 2024	ALL WPs	546
EOSC Compliant PID Implementations - Practical Guidelines for Implementing Best Practices	21 Nov 2023	WP4	76
Documenting mapping community practices	24 Nov 2023	WP4	87
FAIR-IMPACT Community Event	16 Jan 2024	ALL WPs	166
FAIR-IMPACT's second open call for Route 2 support	31 Jan 2024	WP2	57
Webinar: FAIR-IMPACT's virtual clinic for potential applicants to the second open call for financial support	12 Mar 2024	WP2	43
Developing a mapping process framework	30 Apr 2024	WP4	97
FAIR-IMPACT's 2nd open call for repository support programme	8 May 2024	WP2	29

### ***Third-Party events***

FAIR-IMPACT partners actively participate in relevant third party events as speakers, organising sessions or workshops, presenting posters or giving talks. Below a list of the 26 events where FAIR-IMPACT was present from May 2023 to May 2024 is provided

Event Title	Location	Date	Activity
PV2023 Adding value to and preserving scientific & technical data	Geneva (Switzerland)	2 May 2023	Presentation



Event Title	Location	Date	Activity
ELIXIR All Hands 2023	Dublin (Ireland)	8 May 2023	Poster
FDO Models (Workshop)	Online	25 May 2023	Presentation
The WorldFAIR Project within the European and International Landscape	Online	26 May 2023	Attended
IASSIST 2023	Online	7-10 Jun 2023	Presentation
EOSC National Tripartite Event France	Montpellier (France)	13-14 Jun 2023	Presentation
EOSC Concertation Meeting	Online/ Brussels (Belgium)	15 Jun 2023	Discussion
The Potential of Research Data: How Research Infrastructures Provide New Opportunities and Benefits for Society	Lund (Sweden)	19-20 Jun 2023	Panel
CS3MESH4EOSC Final Event   Science Mesh - Unlocking Open Science and Collaborative Research Landscape	Poznan (Poland)	22 Jun 2023	Promotion
Open Science Conference 2023	Online	27-29 Jun 2023	Organised workshops
Webinar: Archive your software to the Software Heritage. The example of an EOSC-Core service	Online	4 Jul 2023	Presentation
The Mythical Data Lake - webinar	Online	12 Jul 2023	Promotion
SIGDIUS Seminar	Online	13 Jul 2023	Presentation
2nd Workshop on Ontologies for FAIR and FAIR Ontologies (Onto4FAIR)	Sherbrooke, Quebec (Canada)	17-29 Jul 2023	Presentation
Sixth Annual AGROVOC Editorial Community Meeting 2023	Freising (Germany)	25 Jul 2023	Presentation
Conference on Research Data Infrastructure	Karlsruhe (Germany)	12-13 Sep 2023	Posters
Science Summit at UN General Assembly	Online/ New York (USA)	12-29 Sep 2023	Paper
63rd Jour Fixe for the German state initiative for research data management fdm.nrw	Online	19 Sep 2023	Presentation
FAIR-EASE Second Annual Meeting	Online/Madrid (Spain)	19 Sep 2023	Discussion
Taking EOSC into the future: EOSC Symposium 2023	Online/Madrid (Spain)	20-23 Sep 2023	Co-organised a session

Event Title	Location	Date	Activity
Open Science FAIR 2023	Madrid (Spain)	25-27 Sep 2023	Exhibition
Semantic Academy   Intensive School 2023	Lecce (Italy)	25-29 Sep 2023	Training
Open science - news from the perspective of open access, research evaluation and FAIR data	Online	13 Oct 2023	Presentation
ENLIGHT Workshop -Health and wellbeing in a data and AI driven context: legal challenges and opportunities	Online	19 Oct 2023	Presentation
International Data Week 2023	Salzburg (Austria)	23-26 Oct 2023	Lightning talks, organised sessions
Workshop on Open Citations & Open Scholarly Metadata 2023	Bologna (Italy)	26-27 Oct 2023	Presentation
DeiC Conference 2023	Kolding (Denmark)	7-8 Nov 2023	Presentation
Optimising FAIRness of federated Blue Data Infrastructures webinar	Online	6 Dec 2023	Presentation
EOOSC Winter School 2024	Thessaloniki (Greece)	29 Jan - 1 Feb 2024	Presentation
18th International Digital Curation Conference	Edinburgh (Scotland)	19-21 Feb 2024	Organising several workshops
Official launch of Research Portal Denmark	Frederiksberg (Denmark)	21 Mar 2024	Presentation
FAIRCORE4EOOSC Technical Project Meeting	Athens (Greece)	23-25 Apr 2024	Technical Session
CRIS2024	Vienna (Austria)	15-17 May 2024	Presentation

## 11. Conclusions and next steps

This document describes the status of the dissemination, exploitation, and communication actions implemented between M13 and M24 of the project, organised around four different engagement campaigns as detailed in *D7.1 “Dissemination, exploitation and communication Plan”* of FAIR-IMPACT, as part of “WP7 - Dissemination, exploitation and communication”.

The results and impact included in this document are the results of a collaborative effort of all FAIR-IMPACT partners, according to the effort indicated in the FAIR-IMPACT work plan.

The report covers the period from M12 (May 2023) to M24 (May 2024). The final release of this series of reports is expected in May 2025 when *D7.3 Impact report [dissemination, exploitation and communication results]* is due

## Annex 1

Title	Providing organisation	Target users	Scientific domain	Type of resource
<a href="#">ACME-FAIR</a>		Institutional (e.g., RPOs, Universities)	Domain agnostic	Guidelines, methodologies and practice documents
<a href="#">AgroPortal</a>	AgroPortal project, supported by University of Montpellier and INRAE	Data service provider (e.g., repositories, registry services), Institutional (e.g., RPOs, Universities), International (e.g., pan-European research infrastructures), National Repository or Service Manager (e.g., Funding bodies, Government)	Agricultural Sciences	Metadata & ontologies
<a href="#">Best practices for implementing FAIR vocabularies and ontologies on the web</a>	Ontology Engineering Group - Universidad Politécnica de Madrid	International (e.g., pan-European research infrastructures)	Domain agnostic	Guidelines, methodologies and practice documents
<a href="#">Chowlk</a>	Ontology Engineering Group - Universidad Politécnica de Madrid	Institutional (e.g., RPOs, Universities), International (e.g., pan-European research infrastructures), Other	Domain agnostic	Software & tools
<a href="#">CoreTrustSeal+FAIR Renabling Capability Maturity Model</a>	The FAIRsFAIR consortium	Data service provider (e.g., repositories, registry services), Institutional (e.g., RPOs, Universities)	Domain agnostic	Guidelines, methodologies and practice documents
<a href="#">Data policy support for facilities science</a>	ExPaNDS - the European Open Science Cloud (EOSC) Photon and Neutron Data Service PaNOSC - Photon and Neutron Open Science Cloud	Data service provider (e.g., repositories, registry services), Institutional (e.g., RPOs, Universities)	Natural Sciences	Guidelines, methodologies and practice documents



Title	Providing organisation	Target users	Scientific domain	Type of resource
<a href="#">Dataset Maturity Model</a>	FAIRplus consortium	Data service provider (e.g., repositories, registry services), Institutional (e.g., RPOs, Universities), National Repository or Service Manager (e.g., Funding bodies, Government)	Medical & Health Sciences, Domain agnostic	Software & tools
<a href="#">DO I-PASS for FAIR?</a>	Dutch LCRDM Task Group	Institutional (e.g., RPOs, Universities), National Repository or Service Manager (e.g., Funding bodies, Government)	Domain agnostic	Training materials
<a href="#">EcoPortal</a>	LifeWatch ERIC	Data service provider (e.g., repositories, registry services), Institutional (e.g., RPOs, Universities), International (e.g., pan-European research infrastructures), National Repository or Service Manager (e.g., Funding bodies, Government), Other	Natural Sciences	Software & tools
<a href="#">E-UJI</a>	The FAIRsFAIR project	Data service provider (e.g., repositories, registry services)	Domain agnostic	Software & tools
<a href="#">F2DS</a>	EOSC Pillar	Data service provider (e.g., repositories, registry services), Institutional (e.g., RPOs, Universities), International (e.g., pan-European research infrastructures), National Repository or Service Manager (e.g., Funding bodies, Government)	Domain agnostic	Software & tools
<a href="#">FAIR Adoption Handbook for Universities</a>	FAIRsFAIR consortium	Institutional (e.g., RPOs, Universities)	Domain agnostic	Guidelines, methodologies and practice documents
<a href="#">FAIR Connect</a>	GO-FAIR and IOS Press	Institutional (e.g., RPOs, Universities)	Domain agnostic	Guidelines, methodologies and practice documents
<a href="#">FAIR Cookbook</a>	FAIRplus consortium	Data service provider (e.g., repositories, registry services), Institutional (e.g., RPOs, Universities)	Domain agnostic	Guidelines, methodologies and practice documents

Title	Providing organisation	Target users	Scientific domain	Type of resource
<a href="#">FAIR Signposting</a>	Signposting the Scholarly Web	Data service provider (e.g., repositories, registry services), National Repository or Service Manager (e.g., Funding bodies, Government)	Domain agnostic	Guidelines, methodologies and practice documents
<a href="#">FAIR-Aware</a>	The FAIRsFAIR project	Data service provider (e.g., repositories, registry services)	Domain agnostic	Software & tools
<a href="#">FAIR-by-Design Methodology</a>	Skills4EOSC	Institutional (e.g., RPOs, Universities)	Domain agnostic	Guidelines, methodologies and practice documents
<a href="#">FAIR-enabling data policy checklist</a>	FAIRsFAIR consortium	Data service provider (e.g., repositories, registry services), Institutional (e.g., RPOs, Universities), International (e.g., pan-European research infrastructures), National Repository or Service Manager (e.g., Funding bodies, Government), Other	Domain agnostic	
<a href="#">FAIR-enabling Repository Finder</a>	The FAIRsFAIR consortium	Data service provider (e.g., repositories, registry services)	Domain agnostic	Metadata & ontologies
<a href="#">FAIR4Health Data Curation Tool</a>	FAIR4Health project	Data service provider (e.g., repositories, registry services), Institutional (e.g., RPOs, Universities)	Medical & Health Sciences	Software & tools
<a href="#">FAIR4Health Data Privacy Tool</a>	FAIR4Health project	Data service provider (e.g., repositories, registry services), Institutional (e.g., RPOs, Universities), Other	Medical & Health Sciences	Software & tools
<a href="#">FAIRassist</a>	Fairsharing	Data service provider (e.g., repositories, registry services)	Domain agnostic	Software & tools
<a href="#">FIP Wizard</a>	ENVRI-FAIR and GO-FAIR initiative	Data service provider (e.g., repositories, registry services), Institutional (e.g., RPOs, Universities), International (e.g., pan-European research infrastructures), National Repository or Service Manager (e.g., Funding bodies, Government)	Domain agnostic	Software & tools



Title	Providing organisation	Target users	Scientific domain	Type of resource
<a href="#">FOOPS!</a>	Ontology Engineering Group - Universidad Politécnica de Madrid	Institutional (e.g., RPOs, Universities), International (e.g., pan-European research infrastructures)	Engineering & Technology	Metadata & ontologies
<a href="#">Framework for assessing FAIR Services</a>	The FAIRsFAIR project	Institutional (e.g., RPOs, Universities)	Domain agnostic	Guidelines, methodologies and practice documents
<a href="#">GLODAP</a>	GLODAP	Data service provider (e.g., repositories, registry services), International (e.g., pan-European research infrastructures)	Natural Sciences	Software & tools
<a href="#">I-ADOPT</a>	RDA I-ADOPT WG	Data service provider (e.g., repositories, registry services), Institutional (e.g., RPOs, Universities), International (e.g., pan-European research infrastructures), Other	Domain agnostic	Guidelines, methodologies and practice documents
<a href="#">IVOA Validator</a>	Observatoire de Paris (France)	Data service provider (e.g., repositories, registry services)	Natural Sciences	Software & tools
<a href="#">LCT</a>	NI4OS-Europe	Institutional (e.g., RPOs, Universities)	Domain agnostic	Guidelines, methodologies and practice documents
<a href="#">LOV</a>	Ontology Engineering Group - Universidad Politécnica de Madrid	International (e.g., pan-European research infrastructures)	Domain agnostic	Software & tools
<a href="#">LS Login</a>	EOSC Life	Data service provider (e.g., repositories, registry services), Institutional (e.g., RPOs, Universities), International (e.g., pan-European research infrastructures), National Repository or Service Manager (e.g., Funding bodies, Government)	Natural Sciences	Software & tools
<a href="#">O'FAIRe</a>	AgroPortal project, supported by University of Montpellier	Data service provider (e.g., repositories, registry services)	Agricultural Sciences, Domain agnostic	Software & tools

Title	Providing organisation	Target users	Scientific domain	Type of resource
	and INRAE			
<a href="#">OGC RAINBOW</a>	The Open Geospatial Consortium (OGC)	Institutional (e.g., RPOs, Universities), International (e.g., pan-European research infrastructures), National Repository or Service Manager (e.g., Funding bodies, Government)	Domain agnostic	Software & tools
<a href="#">OntoPortal</a>	OntoPortal Alliance	Data service provider (e.g., repositories, registry services), Institutional (e.g., RPOs, Universities), International (e.g., pan-European research infrastructures), National Repository or Service Manager (e.g., Funding bodies, Government)	Domain agnostic	Metadata & ontologies
<a href="#">OOPS!</a>	Ontology Engineering Group - Universidad Politécnica de Madrid	Institutional (e.g., RPOs, Universities), International (e.g., pan-European research infrastructures)	Domain agnostic	Software & tools
<a href="#">OSC Starter Kit</a>	INOSC (International Network of Open Science Communities)	Institutional (e.g., RPOs, Universities)	Domain agnostic	Training materials
<a href="#">PaN Ontologies to support FAIR</a>	ExPaNDS - the European Open Science Cloud (EOSC) Photon and Neutron Data Service , PaNOSC - Photon and Neutron Open Science Cloud	Data service provider (e.g., repositories, registry services), Institutional (e.g., RPOs, Universities)	Natural Sciences	Metadata & ontologies
<a href="#">RePol</a>	NI4OS-Europe	Data service provider (e.g., repositories, registry services)	Domain agnostic	Software & tools
<a href="#">RO-Crate</a>	Research Object community	Data service provider (e.g., repositories, registry services), National Repository or Service Manager (e.g., Funding bodies, Government)	Domain agnostic	Guidelines, methodologies and practice documents
<a href="#">RoLECT</a>	NI4OS-Europe	Institutional (e.g., RPOs, Universities)	Domain agnostic	Software & tools

Title	Providing organisation	Target users	Scientific domain	Type of resource
<a href="#">VocBench</a>	Università degli Studi di Roma 'Tor Vergata' ISA <sup>2</sup> - Interoperability solutions for public administrations, businesses and citizens	Data service provider (e.g., repositories, registry services), National Repository or Service Manager (e.g., Funding bodies, Government)	Domain agnostic	Software & tools
<a href="#">Widoco</a>	Ontology Engineering Group - Universidad Politécnica de Madrid	Other	Domain agnostic	Metadata & ontologies
<a href="#">WORCS</a>	Department of Methodology & Statistics, Utrecht University, The Netherlands and Open Science Community Utrecht, The Netherlands	Institutional (e.g., RPOs, Universities)	Domain agnostic	Software & tools

