



**FAIRSFair**  
Fostering Fair Data Practices in Europe

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# D5.8 PAN-EUROPEAN UPTAKE

## FINALREPORT

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### Abstract

The final version of the report maps the portfolio of the project's dissemination results and its subsequent assets against the particular target stakeholder group and includes updated figures for effective FAIR uptake in Europe.

## Versioning and contribution history

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## Abbreviations and Acronyms

Acronym	Definition
EGFC	European Group of FAIR Champions
EOSC	European Open Science Cloud
ESFRI	European Strategy Forum on Research Infrastructures
FAIR	Findable, Accessible, Interoperable, Reusable
HEI	Higher Education Institution
HLAC	High Level Advisory Board
LMICS	Low and Middle Income Countries
RDA	Research Data Alliance
RDA VSIG	Research Data Alliance Vocabulary Services Interest Group
RDA IG ETHRD	Research Data Alliance Interest Group on Education and Training on Handling of Research Data
RI	Research Institution
SSHOC	Social Sciences & Humanities Open Cloud
SME	Small & Medium Enterprises
SRIA	Strategic Research and Innovation Agenda
STM Association	International Association of STM Publishers
TDR	Trustworthy Digital Repository
TFiR	Turning FAIR into Reality
EUA	The European University Association
WG	Working Group
WP	Work Package

## Executive Summary

The Charter of the EOSC Task Force on Researcher Engagement and Adoption, set-up in September 2021, states that *“The overarching principle for developing EOSC is that research has to be at the core of the EOSC initiative. Thus, deep engagement with research communities is fundamental in order to understand their needs and requirements and ensure that the way in which EOSC operates and the existing and future community services are of use and value to researchers and respect the academic sovereignty of scientific results, research data and digital objects”*.<sup>1</sup>

Over the last 36 months, FAIRsFAIR has provided practical solutions for the implementation of FAIR data principles throughout the research data life cycle. This has been achieved by fostering FAIR data culture and the uptake of good practices in making data FAIR. The FAIRsFAIR project addressed the development and concrete realisation of academic quality data management, procedures, standards, metrics and related matters, based on the FAIR principles.

The engagement of European stakeholders was fundamental across all the activities. To that end, a mix of channels was used with the ultimate aim to ensure active participation and an overall feeling of being part of an enlarged community. For example, a bottom-up approach was established wherever possible and relevant; adaptation and flexibility ensured that the best engagement channels were used to reach each target community.

It is important to highlight how the outbreak of the COVID-19 pandemic and the resulting decision to organise workshops as online events had a positive impact on allowing interested participants in several activities to be reached. In particular, the switch to online events was instrumental in involving professionals from universities and other higher education institutions, who usually experience a different set of capacity and budgetary challenges, in attending physical events held outside or far from their countries. But this was also true for other events including the Synchronisation Force series, the national roadshows and the data steward instructor training. The participation of different stakeholders in the online workshops greatly enriched the discussions and contributed to shift the focus from Europe-centric issues involving FAIR research data with international insights and experiences.

In order to present the impact achieved, this document presents the activities performed and analyses the related results around the FAIRsFAIR main stakeholders. **Chapter 1 introduces the FAIRsFAIR EOSC target community**, namely the core stakeholder initiatives, the EOSC governance actors and other horizontal initiatives that have been at the core of the engagement plan from the very beginning of the project. The work done with the **FAIR Champions** and the successful undertaking of the **national roadshows** in engaging with national stakeholders is also presented in this section.

**Chapter 2 describes the engagement & impact towards individuals:** data managers, practitioners and data stewards in Europe and beyond benefitted from FAIRsFAIR professionalisation and data stewardship programmes, organised in collaboration with CODATA and RDA. Policy makers are also

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<sup>1</sup> The Charters of the Task Forces are available at <https://www.eosc.eu/task-force-faq>

included in this chapter, where we explain the work done with a range of policymakers at different levels to provide them with instruments to guide their institutions in participating in the FAIR ecosystem. By the end of the project, almost 200 individuals will have been trained by the FAIRsFAIR data steward instructor training events, another 120 will have been engaged from Low-Income and Middle-Income Countries (LMICs), and more than 400 professionals from universities and other higher education and research institutions will have been directly reached by FAIRsFAIR professionalisation training activities.

**Chapter 3 presents the impact at the level of institutions.** The outcomes of the repository support programme are presented, together with an overview of the channels and methodologies adopted to ensure participation and successful implementation of the programme with the 10+12 selected institutions. The impact towards universities and higher education institutions is also one of the great results of the project, with 188 universities, of which 25 outside Europe, engaged in FAIRsFAIR activities and an excellent uptake in terms of visibility and dissemination. Providers of services that enable the use of persistent identifiers, metadata aggregation and semantic artefacts have also been at the core of FAIRsFAIR cooperation, to boost awareness and share practices related to a nascent FAIR assessment framework for software and services.

The **FAIRsFAIR Competence Centre**, conceived as a virtual hub that will continue as a legacy of reference for best practices and guidelines for FAIR uptake for different communities, is presented in **Chapter 4**.

**Chapter 5** recaps on the channels used and some of the approaches that turned out to be particularly effective in outreach and engagement, including **open calls, online communication and the social media strategy** which all together contributed to an incredibly rich online community of 5,500 members from all the key stakeholder categories.

Finally, **Chapter 6** concludes with the **FAIRsFAIR Synchronisation Force lessons learnt & legacy**. It offers a blueprint that will be a legacy of reference for best practices and guidelines for FAIR uptake by many different communities and those who will continue the synchronisation path successfully started by FAIRsFAIR.

## 1. Introduction - FAIRSF AIR community overview

FAIRSF AIR's stakeholder community within the EOSC ecosystem can be grouped into three main groups: the core stakeholders, the EOSC governance actors and other horizontal initiatives.

**The core FAIRSF AIR target stakeholders.** FAIRSF AIR's primary stakeholders were originally identified as the INFRAEOSC-5a-c projects, the subgroup that includes project funded within the "Implementing the European Open Science Cloud (H2020-INFRAEOSC-2018-2020)" call<sup>2</sup> with the main main objective to set up an operational framework for supporting the overall governance of the EOSC. This group includes the four regional projects covering all corners of Europe, as well as the thematic project ExPaNDS plus FAIRSF AIR and EOSC Secretariat:



**EOSC-Nordic**<sup>3</sup>'s overall objective is to foster and advance the take-up of EOSC at Nordic level by coordinating relevant initiatives taking place in Finland, Sweden, Norway, Denmark, Iceland, Estonia, Latvia and Lithuania; bringing them to bear in the context of the EOSC. The project aims to foster and coordinate all EOSC-relevant initiatives within the Nordic & Baltic countries and exploit synergies to achieve greater harmonisation at policy and service-provisioning level not only across the Nordic and Baltic region, but also with other countries, in compliance with EOSC agreed standards and practices.



**EOSC-Pillar**<sup>4</sup> gathers representatives of the fast-growing national initiatives for coordinating data infrastructures and services in Austria, Belgium, France, Germany, and Italy, to establish an agile and efficient federation model for open science services covering the full spectrum of European research communities.



**EOSC-Synergy**<sup>5</sup> expands the capacity and capabilities of the EOSC by leveraging the experience, effort and resources of national publicly funded digital infrastructures in a coherent way, therefore acting also as an incentive for national resource providers. EOSC-Synergy extends the EOSC coordination to participating countries by harmonising policies and federating relevant national research e-Infrastructures, scientific data and thematic services, bridging the gap between national initiatives and EOSC. The participating countries are: Spain, Portugal, UK, Czech Republic, Slovakia, Poland, the Netherlands, and Germany.

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<sup>2</sup> <https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/infraeosc-05-2018-2019>

<sup>3</sup> <https://www.eosc-nordic.eu/>

<sup>4</sup> <https://www.eosc-pillar.eu/>

<sup>5</sup> <https://www.eosc-synergy.eu/>



**NI4OS-Europe**<sup>6</sup> aims to be a core contributor to the EOSC service portfolio, commit to EOSC governance and ensure inclusiveness at the European level for enabling global open science. The project supports the development and inclusion of the national Open Science initiatives in 15 Member States and Associated Countries in the EOSC governance. NI4OS-Europe aspires to instil within the community the EOSC philosophy and FAIR principles. It also provides technical and policy support for the on-boarding of service providers into EOSC.

## ExPaNDS

**ExPaNDS**<sup>7</sup> is the EOSC Photon and Neutron (PaN) Data Service. PaN Research Infrastructures are service providers with high relevance for the success of EOSC. Through ExPaNDS for national PaN RIs and PaNOSC for PaN ESFRIs, coherent FAIR data services will be enabled to the scientific users of all European PaN facilities, universities and even industry.



**EOSCsecretariat.eu**<sup>8</sup> delivers 360° support to the EOSC Governance while working openly and inclusively with communities to co-create an all-encompassing European Open Science Cloud. It coordinates the InfraEOSC-05 Collaboration.

In early 2020 these projects signed a **Collaboration Agreement in support of the EOSC Governance** to collaborate on a wide range of topics, in order to enhance synergies in all mutual activities related to the EOSC, under the umbrella of a *Cross-Project Collaboration Board* where also the [European Strategy Forum on Research Infrastructures](#) (ESFRI) projects were involved. The ESFRI cluster projects were launched in 2019 in order to implement interfaces to integrate computer and data management solutions, to create cross-border and open cooperation spaces and to promote clouds via the EOSC portal for a larger user community:



**EOSC-Life**<sup>9</sup> brings together the Biological and Medical ESFRI to create an open, digital and collaborative space for biological and medical research. The project will publish FAIR data and a catalogue of services provided by participating RIs for the management, storage, and reuse of data in the EOSC.



**ENVRI-FAIR**<sup>10</sup> connects the Environmental Research Infrastructure (ENVRI) community to the EOSC. The overarching goal is for all participating Research Infrastructures to build a set of FAIR data services, enhancing the efficiency

<sup>6</sup> <https://ni4os.eu/>

<sup>7</sup> <https://expands.eu/>

<sup>8</sup> <https://www.eoscsecretariat.eu/>

<sup>9</sup> <https://www.eosc-life.eu/>

<sup>10</sup> <https://envri.eu/home-envri-fair/>

and productivity of researchers, supporting innovation, and enabling data- and knowledge-based decisions to answer global challenges.



**ESCAPE**<sup>11</sup> establishes a single collaborative cluster of next-generation ESFRI facilities in the area of astronomy- and accelerator-based particle physics in order to implement a functional link between the concerned ESFRI projects and EOSC.



**SSHOC**<sup>12</sup> develops the social sciences and humanities area of EOSC, transforming the current data landscape with its disciplinary silos and separate facilities into an integrated, cloud-based network of interconnected data infrastructures.



**PaNOSC**<sup>13</sup> brings together strategic European research infrastructures in the area of Photon and Neutron science with the goal of contributing to the construction and development of the EOSC. The mission is to contribute to the realisation of a data commons for Neutron and Photon science.

These actors were therefore conceived from the very beginning as the prime stakeholders of FAIRsFAIR activities and were systematically engaged across all work packages. Both ESFRI clusters and 5b projects were invited to co-organise FAIRsFAIR activities, events and reports. Joint workshops were organised as well, such as the event organised in November 2020 “FAIR Assessment and Certification in the EOSC region”<sup>14</sup> with the 5b projects.

In addition, the FAIRsFAIR High-Level Advisory Committee (HLAC) and the European Group of FAIR Champions (EGFC), initiated by the project to work as FAIR ambassadors, were actively involved in the project activities as representatives of thematic communities and of specific user group needs.

**The EOSC governance.** Up to early 2021 the Working Groups of the EOSC Executive Board played an important role as well. Five **EOSC Working Groups**<sup>15</sup> were established by the EOSC Executive Board: FAIR, Landscape, Rules of Participation, Architecture and Sustainability. The **Working Group on FAIR**<sup>16</sup> was charged with implementing FAIR data principles by defining the associated requirements for the development of EOSC services in order to foster cross-disciplinary interoperability. During the EOSC Executive Board (EB) meeting on 24 May 2019<sup>17</sup> FAIRsFAIR proposed an approach to synchronising EOSC-related projects and the EOSC Working Groups. The Executive Board members supported the strategy and suggested that the FAIRsFAIR approach could serve as an example for all EOSC-related projects to ensure convergence of planning and positioning. In the framework of a

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<sup>11</sup> <https://projectescape.eu/>

<sup>12</sup> <https://sshopencloud.eu/>

<sup>13</sup> <https://www.panosc.eu/>

<sup>14</sup> <https://zenodo.org/record/4486280>

<sup>15</sup> <https://www.eoscsecretariat.eu/eosc-working-groups>

<sup>16</sup> <https://www.eoscsecretariat.eu/working-groups/fair-working-group>

<sup>17</sup> <https://www.fairsfair.eu/news/eosc-eb-meeting-fairsfair-example-all-eosc-projects>

Collaboration Agreement between FAIRsFAIR and the EOSC Secretariat, the Synchronisation Force also provided appropriate input to the Executive Board Working Groups.

In the course of 2021 the organisational structure of the EOSC governance saw new bodies (the EOSC Association) and new projects (EOSC Future, EOSC Enhance) funded to support EOSC pilot everyday operations. The engagement with them continued at the level of engagement with individuals. In September 2021 five new EOSC Advisory Groups were created focusing on overarching themes that are important for the realisation of EOSC, each one consisting of Task Forces with members working on specific topics<sup>18</sup>. 25 FAIRsFAIR partners have been selected to join 12<sup>19</sup> out of the 13 task forces created.

**Other horizontal initiatives.** In order to expand the group of end users and beneficiaries of the project activities, FAIRsFAIR worked closely with many other domain-agnostic or horizontal e-Infrastructure projects. These include **OpenAIRE** (see for instance the FAIRsFAIR and OpenAIRE joint workshop on 28 April 2021 which aimed to discuss the role of national-level initiatives to advance skills development for research data management<sup>20</sup>); **ARCHIVER and OCRE procurement projects** to deal with the theme of long-data preservation of data and services (Ingrid Dillo, FAIRsFAIR coordinator is also member of ARCHIVER Expert Board); **EUDAT** and in particular the **B2Find** service network; all the other FAIR related initiatives including the **Gofair, FAIRSharing, FAIR4Health** projects. This category also includes the national bodies and initiatives engaged via the National Roadshows as well as funders and publishers. The **Research Data Alliance** also represents a strategic base for the FAIRsFAIR activities, with many members of the consortium active in different Working and Interest Groups of the Alliance (e.g., the Research Data Alliance Vocabulary Services Interest Group and the Research Data Alliance Interest Group on Education and Training on Handling of Research Data). The way FAIRsFAIR interacted with the above mentioned stakeholders is presented in the following sections of this document.

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<sup>18</sup> <https://www.eosc.eu/task-force-faq>

<sup>19</sup> FAIRsFAIR partners are present in the following Task forces: Data Stewardship Curricula and Career Paths, EOSC Financial Sustainability, FAIR Metrics and Data Quality, Infrastructure for Quality Research Software, Long-term Data Preservation, PID Policy and Implementation, Research Careers, Recognition, and Credit, Researcher Engagement and Adoption, Rules of Participation Compliance Monitoring, Semantic Interoperability, Technical Interoperability of Data and Services, Upskilling Countries to Engage in EOSC

<sup>20</sup> <https://www.fairsfair.eu/articles-publications/national-policy-and-support-actions-research-data-skills-impact-and>





July 2021

Figure 1 FAIRsFAIR EOSC community overview



## 1.1. Talking country to country: a blueprint of the National Roadshow series programme

During the 23 September 2020 meeting, FAIRsFAIR High Level Advisory Committee (HLAC) provided targeted recommendations on FAIRsFAIR lines of action. One of these recommendations referred to the need to better connect with national initiatives:

From the report of the meeting with the HLAC<sup>21</sup>: *“The need to better connect with national initiatives has emerged prominently across all the action lines. To respond to this need, FAIRsFAIR is exploring a series of channels for target dissemination towards research communities at national levels, which include the organisation of regional roadshows targeting specific communities and topics, leveraging on direct support from local contact points such as RDA Europe National Nodes, OpenAIRE NOADs, EOSC regional initiatives (5b projects), Digital repositories at national level and, of course, the FAIR Champions.”*

In order to respond to this recommendation, FAIRsFAIR delivered a series of National Roadshows with the aim of encouraging FAIR adoption in different European countries. The purpose was to extend the current network beyond the projects and initiatives that FAIRsFAIR already collaborates with, by establishing another platform to promote FAIRsFAIR recommendations, good practices, and assessment tools.

**The National Roadshow model.** To structure and facilitate the organisation of the events, a similar approach was adopted and replicated across the series, which includes the following:

- **Facilitator at country level.** As a first step, one or more national facilitators were identified at the start, chosen strategically to identify the topic of the event, the target community and the channels for promotion. National facilitators included universities and national Open Science coordinators and were coupled with a representative of FAIRsFAIR outreach & dissemination team.
- **Semi-structured agenda.** A combination of fixed and optional modules was provided to the facilitators and event organisers to start drafting the event agenda.
- **National topic & target stakeholders.** The topic of each roadshow was adapted to the needs and level of awareness of the national target audience.
- **Reuse of materials.** FAIRsFAIR presentations were at the disposal of colleagues across the roadshows. This ensured effort and knowledge optimisation, and efficiency in the event organisation. In addition, collaboration and sharing of the materials were central to the organisation of the roadshows.
- **Flexibility.** Language, agenda, registration process, and location were adjusted to accommodate facilitator and participant needs.

The primary audience of the National Roadshows was the RDM community in the various countries, ranging from data support staff to policy makers in universities. The main topics covered were:

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<sup>21</sup> The Journey to FAIR: Advice from the FAIRsFAIR Experts, 29 October 2020  
<https://www.fairsfair.eu/articles-publications/journey-fair-advice-fairsfair-experts>

- FAIRsFAIR tools
- Support for FAIR data through policy enhancement
- Professionalising data stewardship & the role of researchers
- Policies and management of research data repositories
- FAIR best practices

Topline figures

- 10 events, 9 organised with up to 170 attendants , 1 upcoming (January 2022)
- 9 virtual events
- 1 hybrid event (Portugal)
- 4 bilingual or in national language (Spain, Portugal, Romania, Italy)
- 13 facilitators engaged from outside the consortium
- FAIR Champions and HLAC involved (Spain, Finland, The Netherlands, Italy, Lithuania)
- 2 government department representatives attended the events (Spain and Lithuania)

## FAIRsFAIR Roadshow Series

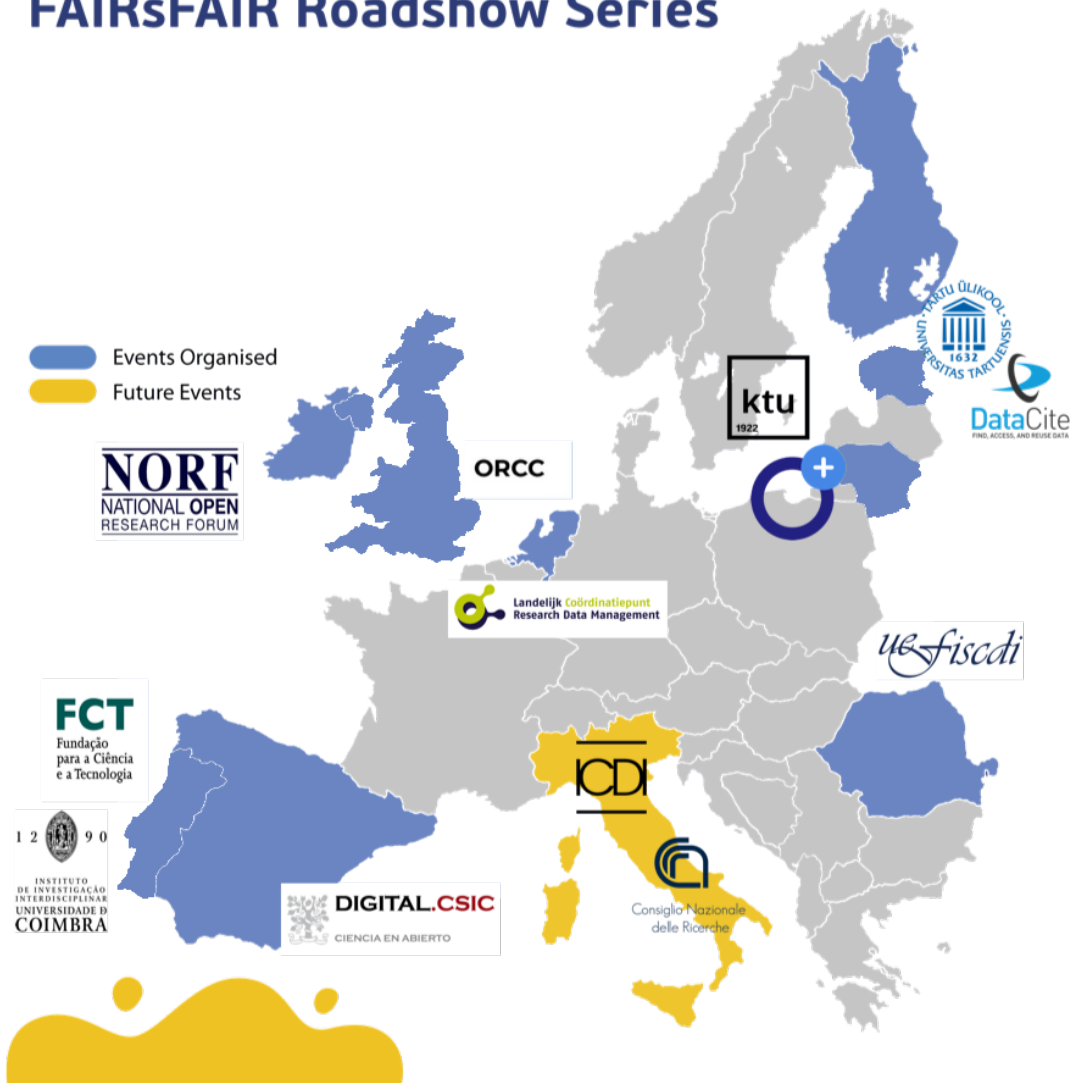







Figure 2 overview of the National Roadshow series and the facilitator bodies engaged

 **Robin Rice**  
@sparrowbarley

My browser is full of tabs for further reading from the stimulating @FAIRsFAIR\_EU UK workshop today. Glad I only have to track RDM and Open Research developments, maybe research culture too, but have colleagues to be experts on Open Access. Don't know how others do it all.

1:15 PM · Nov 26, 2021 · Twitter Web App

2 Retweets 6 Likes

Nov 2021 · 30 days

TWEET HIGHLIGHTS

**Top Tweet** earned 1,944 Impressions

👉 Calling all #University teachers, data #stewards, trainers, managers of University #curricula: @FAIRsFAIR\_EU is finalising a teaching and training #handbook for High Education Institutes. Stay tuned! Claudia Engelhardt @uniGoettingen 🇪🇸 Estonia #Roadshw  
[zenodo.org/record/5665493...](https://zenodo.org/record/5665493...)  
[pic.twitter.com/AGo7WGr5mS](https://pic.twitter.com/AGo7WGr5mS)

FAIR-related content in curricula & training

- Map the current integration of FAIR principles in university curricula and teaching and analyse the landscape of available FAIR data trainings in Europe
- Deliver a FAIR data competence framework for higher education and professionals to support the development of a FAIR data culture and the uptake of FAIR data principles
- Translate the competence framework into model curricula and university courses
- Support embedding of FAIR data education in university programmes and doctoral training through a series of workshops and knowledge-sharing



16 23

 **André Vieira**  
@andremvieira · Nov 26

The Portuguese @FAIRsFAIR\_EU roadshow is starting! A great opportunity to share the main results and contributions to help implementing #FAIRdata practices, during the Portuguese #RDM Forum #ForumGDI



  6  3 

 **Fachinformationsdienst Romanistik**  
@FIDRomanistik

Der Fachinformationsdienst #Romanistik (FID) wird betrieben von der @ulbbonn und der @stabihh.

[Follow](#)

Figure 3 sample feedback tweets on the recent National Roadshows in Estonia, Portugal and UK



## 1.2. The European Group of FAIR Champions

FAIR Champions work as FAIR ambassadors to their communities, sharing FAIRsFAIR project outputs with their networks at events, distributing materials to their contact lists and directing others to relevant use cases or people. Over the course of the project the European Group of FAIR Champions has grown to 15 people from 8 countries. The first 8 Champions were invited personally shortly after the start of FAIRsFAIR. Later, two calls for more Champions were published. This led to even more relevant expertise within the Group of FAIR Champions, who have backgrounds in research, digital preservation, libraries, publishing, and software engineering.

Four dedicated meetings with FAIR Champions have been organised, to inform them and discuss recent outputs and developments in the project. To promote further networking, these meetings were sometimes combined with HLAC meetings. In addition, several Champions took part in the project events, for example in the Synchronisation Force workshops and in national Roadshows, where they contributed valuable information about FAIR development and were fundamental in engaging with their communities<sup>22</sup>. The outputs produced by the FAIR Champions and the other expert groups that the project engaged with (HLAC and the Synchronisation Force core team that will be actively running until the end of the FAIRsFAIR Project in February 2022) will impact future reports, projects and FAIR implementation, continued knowledge-exchange on FAIR and lessons learnt can serve the future FAIR ecosystem well.



Figure 4 overview of the cohort of FAIR Champions engaged in the project

<sup>22</sup> The specific contribution of the FAIR Champions to the project events, deliverables and reports has been detailed in previous deliverables. See D5.2 and D5.4 FAIRsFAIR communication, marketing & engagement plan, final version.

## 2. FAIRsFAIR core action lines: stakeholder engagement & impact achieved on individuals

### 2.1. Purpose for engagement

Providing practical solutions and supporting the uptake of good practices in making data FAIR are key objectives of the project. Increasingly data stewards (or those performing data stewardship activities) play an essential role in research data management and the implementation of FAIR, not only helping researchers, but also interacting with and advising other stakeholders in their institution. The activities in WP6 “FAIR Competence Centre” are aimed at supporting individual researchers, data stewards and others involved in support roles through the delivery of training, support and resources, building a network of trainers equipped with FAIR data skills. The focus of the activity has been on **practitioners** who support research data management in universities and other research performing organisations.

### 2.2. Support to data managers, practitioners and data stewards in Europe and beyond

#### 2.2.1. Exploited channels and activities performed

The first data steward school took place in Trieste in Italy in August 2019 as part of the **CODATA-RDA Summer School for Research Data Science**<sup>23</sup>. Six participants from 5 different countries and 6 institutions took part in the pilot programme; they were identified through an open call for applications. The programme was reviewed at a workshop at the 14th RDA Plenary in Helsinki in October 2019. Planning took place to revise the structure based on pilot feedback with the aim of running the course alongside the CODATA-RDA Summer School in 2020.

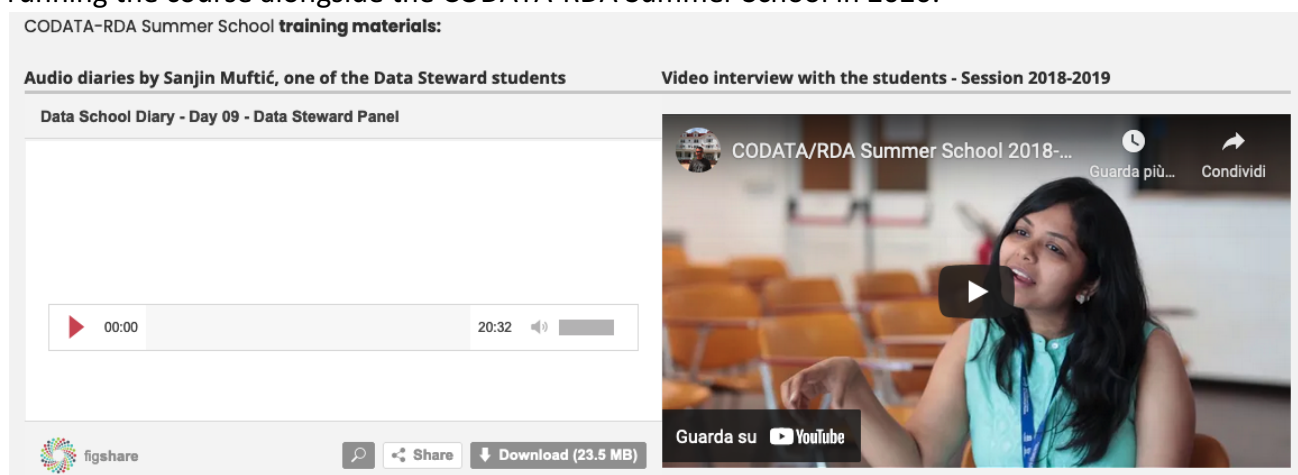


Figure 5 Preview of CODATA-RDA Summer schools diaries and interviews from the physical event in Trieste

<sup>23</sup> <https://www.fairsfair.eu/events/codata-rda-summer-school-research-data-science>



Due to the COVID-19 pandemic, the approach to both the Summer Schools and data steward instructor training had to be significantly re-thought in order to move to online delivery due to travel restrictions and suspension of in-person events. A series of **FAIRsFAIR-CODATA-RDA Data Steward Training online workshops**<sup>24</sup> was then planned to be organised between 2020 and 2021. The goal of this training series was to equip data stewards with the foundational skills of research data science and a solid grounding in responsible research practices. The training was organised at the request of the universities and participation was possible through invitation from the same institutions.

The pilot with the **University of Manchester** was undertaken on 16, 17 and 18 November 2020 to refine and deliver an online instructor train-the-trainer series. The final format for the training sessions was settled on as three half-day sessions over a week (Monday, Wednesday and Friday) with homework set in between combining asynchronous and synchronous working. The [FAIRdata Forum](#) was used to facilitate the delivery of the sessions and discussion between participants and remains available after the event for continued engagement.

Utilising the **EUA network**, an email call to EUA members identified institutions who were interested in working with FAIRsFAIR to deliver data steward train-the-trainer events in their region. Three regional instructor training programmes were delivered in partnership with local hosts: **Belgium** (the **University of Ghent** and the **Flanders Open Science Board**, in collaboration with **EOSC Pillar**, 7, 9 and 11 June 2021), **Ireland** (the **University College Cork** and **National Open Research Forum**, 12, 14 and 16 July 2021) and **Poland** (**Gdansk University of Technology** and the **EOSC Pillar** and **EOSC Synergy projects**, 6-7 September 2021).



Figure 6 European partner universities in the FAIRsFAIR Data Steward Training series

In order to further expand the reach of the training an open call for applications from individuals was launched to deliver two more training events conducted in late **November and early December 2021**.

### 2.2.2. Support to individual researchers in LMICs

FAIRsFAIR has supported the CODATA-RDA Schools of Research Data Science<sup>25</sup> which are focused on building core data science skills. The Schools are aimed at **Early Career Researchers in low and middle income countries** (LMICs). During the course of the project three summer schools have been run. In 2019 the school ran as an in-person two-week event in Trieste, Italy and had **38 participants from 18 countries**. For 2020 the impact of COVID-19 required the school to be run as an online event. This was a reduced programme, aimed at alumni of past schools and had **123 participants from 42**

<sup>24</sup> The full list is saved here <https://www.fairsfair.eu/events/training>

<sup>25</sup> <https://www.datascienceschools.org/>

**countries.** In 2021 the event was again run online but as a fully online school spread over 10 weeks with a combination of asynchronous and synchronous working and a commensurate number of teaching hours as the physical schools. **82 people attended from 34 countries.** With the move to an online format in 2021 and the support of FAIRSFair participation was opened up beyond LMICs to include more European countries. Data steward training events were also organised and held online in **Costa Rica (National University of Costa Rica, 7, 9, 10 December 2020, 21 participants)** and **Botswana (University Library of Botswana, 17, 19, 21 May 2021, 31 participants).**

Year	Type of event	Impact
2019	Trieste, Italy	38 participants from 18 countries
2020	Online	123 participants from 42 countries
2021	Online, spread over 10 weeks	82 people from 34 countries

Table 1 Overview of researchers from LMIC countries supported between 2019 and 2021

### 2.2.3. Impact & results achieved

Working in collaboration has been a significant element in the delivery of activities firstly building on and working with the established **CODATA-RDA Schools of Data Science** to develop the data steward strand and then with the **EOSC Synergy<sup>26</sup>** and **EOSC Pillar<sup>27</sup>** projects on the delivery of the revised instructor training programme.



The FAIRSFair data steward instructor training events reached **124 individuals - data stewards and research infrastructure managers - in 10 countries and over 70 institutions** through a series of regional instructor/train-the-trainer events and the initial pilot data stewards school that took place. An open call accommodated **further 69 individuals from 25 countries and 56 institutions.** The open calls were oversubscribed with limited places across the two events. The training has been well received resulting in concrete actions for participants, as outlined by the blog posts that were published after the events.

*“When asked about the best aspects of the workshop, participants valued the interactive and hands-on approach of the event (“exercises got us actively engaged in the material”, “combination and practice and theory”), the networking opportunity that was offered (“getting to meet new people”, “sharing experience with other participants”), as well as the discovery of new resources that they can apply to their daily job (“getting to know new tools which can help me to improve as a data steward and improve my training sessions”, “catalogue of training resources”).”*

**Blog post by Paula Oset Garcia, Ghent University about the Data Stewards Training - Belgium<sup>28</sup>**  
**July 2021**

<sup>26</sup> <https://www.eosc-synergy.eu/>

<sup>27</sup> <https://www.eosc-pillar.eu/>

<sup>28</sup> Data Stewardship Training - Belgium, blogpost <https://www.fairsfair.eu/articles-publications/data-stewardship-training-belgium>, also published in the CODATA-RDA Data Schools Newsletter

*“Participants valued the interactive and hands-on approach of the workshop and the networking opportunity that was offered”*

**FAIRSF AIR-CODATA-RDA Data Steward Training Series - Poland. Blogpost by Katarzyna Dudek, Piotr Krajewski<sup>29</sup>**

*“Our next steps will be to work with people across the University who are well positioned to help develop an approach to resourcing data stewardship at The University of Manchester, and this will be the focus of an ongoing project for the 2021/22 academic year.”*

**Eleanor Warren, Research Services Librarian at The University of Manchester about the Data Stewardship Training in Manchester<sup>30</sup>**

Training materials have been made available via the Competence Centre Training Library<sup>31</sup> on the FAIRSF AIR website as well as being deposited in Zenodo in the FAIRSF AIR Community. The materials have a Creative Commons CC-BY licence to facilitate re-use.

More details about the activities will be reported in the upcoming WP6 project deliverables (D6.4, D6.5, D6.6 and D6.7) due at the end of February 2022.

## 2.3. Policy-makers

### 2.3.1. Engagement Aims

Based on an initial landscape assessment in 2019,<sup>32</sup> FAIRSF AIR developed a series of recommendations for policy enhancement in 2020<sup>33</sup> to support the realisation of a FAIR ecosystem. A policy analysis was conducted amongst a range of stakeholders, including national policy-makers, funders, publishers and institutions to reach as many who are involved in influencing the implementation of FAIR. Recommendations were targeted to these groups. The FAIRSF AIR policy support programme aims to help a broad range of policy-makers at different stages of the policy

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<https://mailchi.mp/b571f6d8d0ce/newsletter-december-2020-codata-rda-schools-for-research-data-science-6274558?e=222ec15aa9>

<sup>29</sup> Data Stewardship Training – Poland, blogpost <https://www.fairsfair.eu/articles-publications/fairsfair-codata-rda-data-steward-training-series-poland>

<sup>30</sup> [Data Stewardship Training - Manchester | FAIRSF AIR](#)

<sup>31</sup> <https://www.fairsfair.eu/competence-centre/training-library>

<sup>32</sup> Davidson, Joy, Engelhardt, Claudia, Proudman, Vanessa, Stoy, Lennart, & Whyte, Angus. (2019). D3.1 FAIR Policy Landscape Analysis (v1.0). FAIRSF AIR. <https://doi.org/10.5281/zenodo.5537032>

<sup>33</sup> Davidson, Joy, Grootveld, Marjan, Whyte, Angus, Herterich, Patricia, Engelhardt, Claudia, Stoy, Lennart, & Proudman, Vanessa. (2020). D3.3 Policy Enhancement Recommendations (1.0). Zenodo. <https://doi.org/10.5281/zenodo.5362183>



making process to consider and, where appropriate, act on our recommendations to better support the emergence of a FAIR ecosystem.

### 2.3.2. Awareness raising of FAIRsFAIR policy-making

FAIRsFAIR used various channels to raise awareness of policy-making analysis and recommendations amongst policy-makers in Europe. The project shared results in the **SPARC Europe** Analysis of Open Science Policies in Europe bi-annual reports and attended regular meetings with the **EOSC National Policies and Governance Task Force**<sup>34</sup>. In addition, presentations were organised at various roadshows and international events, including the **RDA4EOSC Webinar - Supporting the alignment of organisational research data management policies**<sup>35</sup> in April 2021, the **EOSC Symposium and the Open Science Fair 2021**<sup>36</sup> with workshops on the topic of FAIRsFAIR policy. FAIRsFAIR was also invited to present its policy work at a **Science Europe member event in January 2021**<sup>37</sup>.



Figure 7 Key dissemination channels for policy making activities

### 2.3.3. Open Call for Support

In January 2021, FAIRsFAIR issued an open call for expressions of interest from the policy-maker community to reach and engage with the different target groups. The objective of the call was to involve policy-makers at different levels in aligning their policies with the project's recommendations and to verify and discuss results<sup>38</sup>. FAIRsFAIR aimed to work with up to 25 policy makers across a broad range of stakeholder groups at national, funding body, organisational, research infrastructures, and repository levels. The project sought to engage with policymakers at different stages of policy development and implementation to see how the recommendations might find their way into new or already existing policies.

<sup>34</sup> The task force is one of the six created in the framework of the infraEOSC 05 Collaboration Agreement <https://www.eoscsecretariat.eu/news-opinion/working-together-eosc-collaboration-agreement>

<sup>35</sup> <https://www.rd-alliance.org/rda4eosc-webinar-supporting-alignment-organisational-research-data-management-policies-7th-may-1300>

<sup>36</sup> <https://www.opensciencefair.eu/2021/workshops/let-s-discuss-about-fairifying-os-policies>

<sup>37</sup> <https://www.scienceeurope.org/events/launch-event-rdm-guide-2nd-edition/> During the webinar 'Aligning Research Data Management Across Europe – The Next Step', Science Europe launched the extended edition of its Practical Guide to the International Alignment of Research Data Management. The updated RDM guide with the DMP and repository chapters and the accompanying DMP templates is available via <https://scienceeurope.org/our-priorities/research-data/research-data-management/> The difference between the two versions is the recent addition of a DMP evaluation rubric, was the topic of this webinar. Vanessa Proudman (SPARC Europe), Angus Whyte (DCC) and Ingrid Dillo (DANS), representing FAIRsFAIR, gave feedback on the draft rubric.

<sup>38</sup> <https://fairsfair.eu/form/open-call-policy-enhancement-support>



Figure 8 Promotional banner for the Open call for policy enhancement support

The engagement started during the second half of 2021 and will run through to early 2022. FAIRsFAIR is engaging with four cohorts of policy-makers. These are:

- Policy-makers who already have a policy in place
- Policy-makers who have a draft policy in development
- Policy-makers who are in the earliest stages of policy development
- Umbrella initiatives aiming to support a wider community of policy-makers.

Each policy-maker participating in the support programme selected the cohort that best aligned with their aims. The cohort composition is illustrated in figure below.

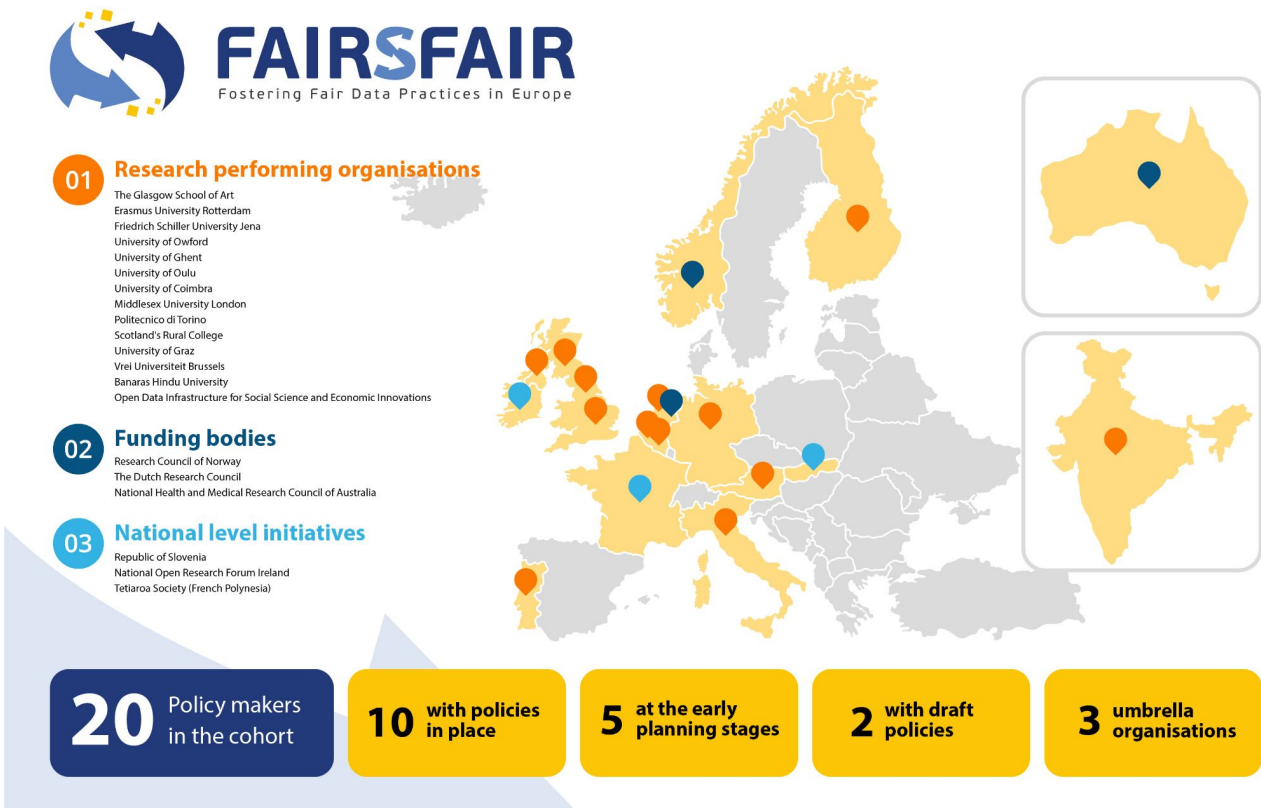


Figure 9 FAIRsFAIR Policy Support Cohort

The policy makers represent various stakeholders groups and stages of policy development. Among the participants:

- 14 are research performing organisations (HEIs, research infrastructures)
- 3 are funding bodies
- 3 are national level initiatives

Among these participants:

- 10 participants in the cohort already have policies in place
- 2 participants in the cohort have draft policies being developed
- 5 participants are at the early stages of policy planning and development
- 3 participants represent umbrella organisations and are keen to reuse the support outputs with their own communities

#### 2.3.4. Policy Support Programme

For those 12 policy-makers in the cohort with policies or draft policies, FAIRsFAIR reviewed these against its set of policy enhancement recommendations<sup>39</sup> and provided a brief summary report outlining findings and recommendations for good practice. The summary reports were sent to the policy-makers for validation ahead of their participation in the first of three online workshops being run for the cohort. Below is an outline of the three support workshops:

- The first workshop was held in October 2021 and summarised the findings of the policy reviews and shared specific examples of good practice. It also identified common areas where further work may still be needed.
- An additional introductory workshop was run in October 2021 for those in the early planning stages of policy development to provide an overview of good practice and tips to consider to make the process most effective.
- A second workshop for the full cohort will be run in January 2022 and will provide an overview of FAIRsFAIR's Assessing Capability Maturity and Engagement with FAIR-enabling Practices (ACME-FAIR) framework and provide guidance on how to carry out a self-assessment of FAIR-enabling practices.
- A final workshop for the full cohort will be run in February 2022 and will focus on the role of structured and machine-readable policies in supporting the vision of the European Open Science Cloud. A key aim will be to foster collective discussions on which policy elements should be included as standard in Open Science policies to support future monitoring of the policy landscape. The workshop will aim to include relevant stakeholders beyond the policy support cohort from funders to national or institutional policymakers or publishers.

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<sup>39</sup> Davidson, Joy, Grootveld, Marjan, Whyte, Angus, Herterich, Patricia, Engelhardt, Claudia, Stoy, Lennart, & Proudman, Vanessa. (2020). D3.3 Policy Enhancement Recommendations (1.0). Zenodo. <https://doi.org/10.5281/zenodo.5362183>

### 2.3.5. Impact & results achieved

During the first workshop, the cohort was introduced to the review instruments and report templates and asked to provide feedback. When polled at the event, all 12 policy-makers in the cohort that had policies or draft policies to be reviewed were unanimous that the policy report structure was effective as can be seen in figure below.

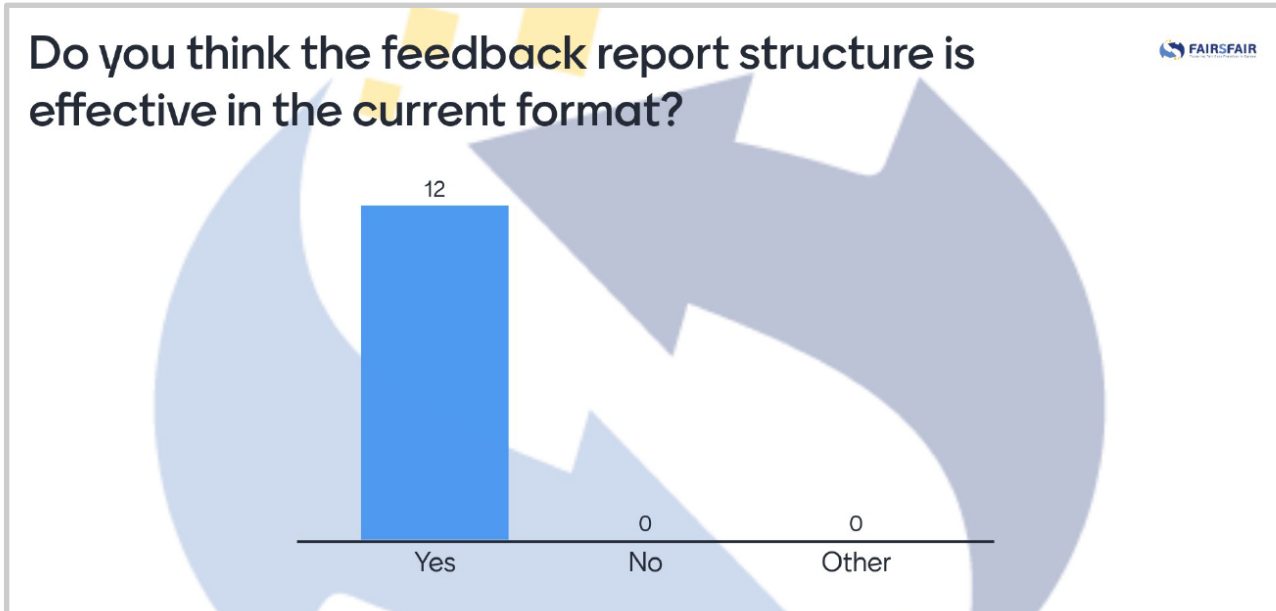


Figure 10 Menti poll results from First Policy Support Workshop, October 28th, 2021.

The FAIRsFAIR team also asked all those participating in the first policy support workshop whether they thought they would act on any of the FAIRsFAIR recommendations. This poll was open to the full cohort - not just those who had received policy review reports. Almost all attendees indicated that they would act on the recommendations shared.

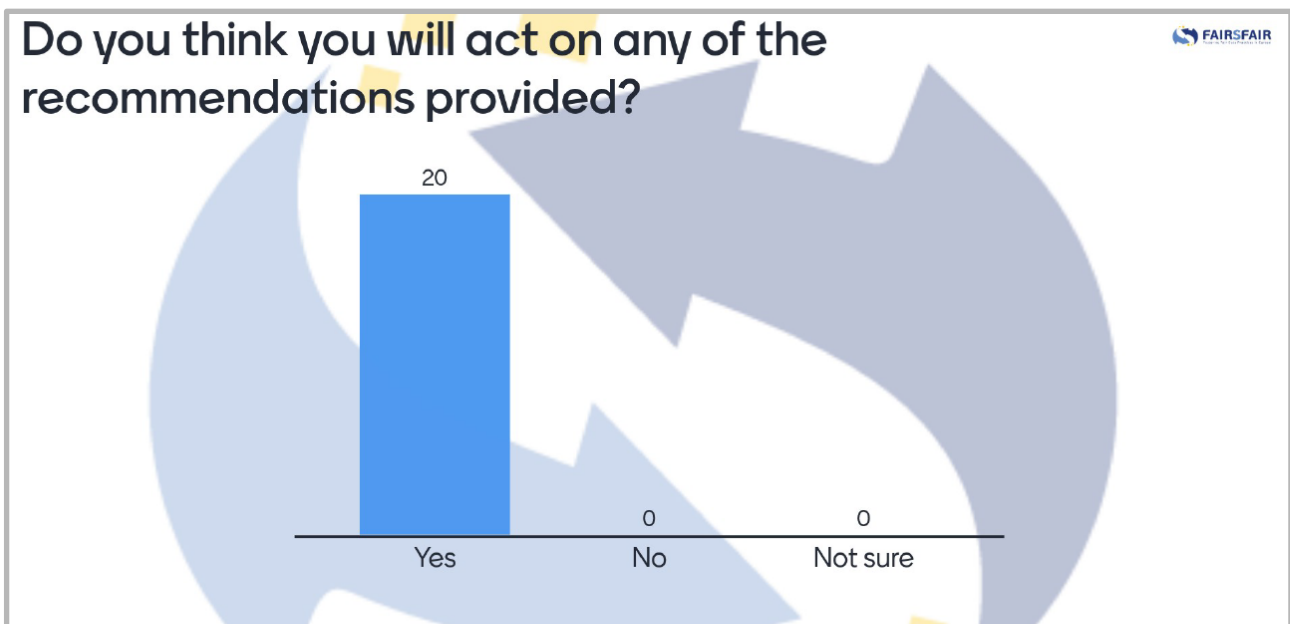


Figure 11 Menti poll results from First Policy Support Workshop, October 28th, 2021.

FAIRSFair expects that the FAIRSFair policy resources will be useful for individual organisations and umbrella organisations wishing to support policy development and review among the communities they represent. The project team has also invited feedback from the support cohort on the review instruments and report template and will also make these available for public comment in late 2021. It is anticipated that they will be useful for a wider range of policy makers at all levels wishing to assess how well their policies align with FAIR and when seeking recommendations on good practice in the future.

### 3. Impact at the level of institutions

In the section below the impact on FAIRSFair stakeholders is analysed taking into account the target type of institutions addressed by the project.

#### 3.1. Data repositories

Supporting data repositories on their journey towards trust and FAIR is one of the core objectives of the FAIRSFair project. Recognising the central role data repositories play in making and keeping data FAIR over time, the **FAIRSFair support programme**<sup>40</sup> helped repositories with achieving trustworthy repository certification and becoming more FAIR-enabling.

##### 3.1.1. Purpose for engagement

FAIRSFair adopted a two-pronged approach<sup>41</sup> to developing standards for the FAIR certification of repositories:

- Support for data repositories towards achieving CoreTrustSeal certification<sup>42</sup>
- Support for the “FAIRification” of repositories and improvement of data FAIRness and interoperability

The support programme involved a diverse range of ten data repositories from across Europe. There is a good representation of data repositories in terms of geographical spread as well as scientific domains. In return, the data repositories share their invaluable knowledge on how trustworthy repository practices best enable FAIR data. Their observations and common issues in the certification process help create better guidance and support material for the wider repository community, developing recommendations for integrating FAIR into the CoreTrustSeal requirements.

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<sup>40</sup> <https://www.fairsfair.eu/application-results-open-call-data-repositories>

<sup>41</sup> See D3.5 Description of FAIRSFair's Transition Support Programme for Repositories  
<https://zenodo.org/record/4058340#.X4XB54txeM9>

<sup>42</sup> <http://www.coretrustseal.org/>



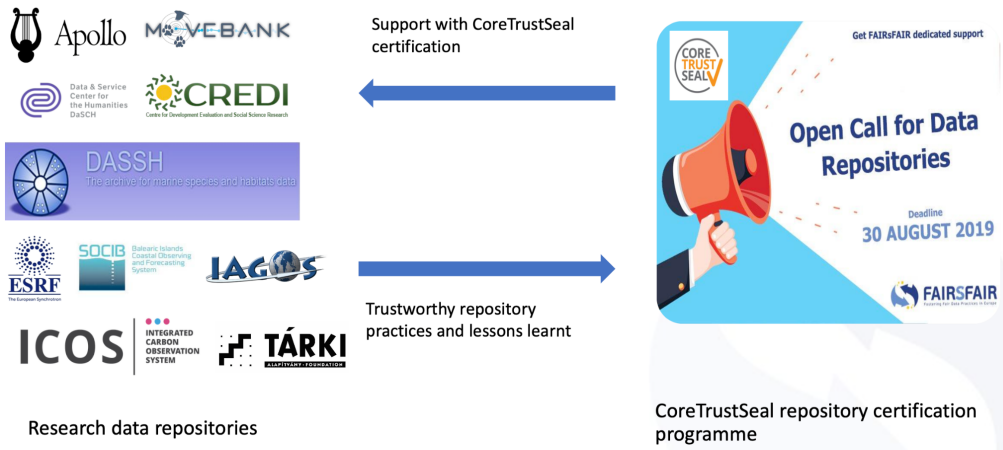


Figure 12 Two-way approach of the FAIRSFAR repository support programme

In the area of repository standards and certification, FAIRSFAR has also examined the CoreTrustSeal as an entry level candidate for Trustworthy Digital Repository (TDR) status within a FAIR context. The results have provided an alignment between the 16 CoreTrustSeal Requirements and the FAIR Data Principles, RDA FAIR Indicators and the related F-UJI digital object tests. An associated capability maturity approach provides a multi-tier self-assessment approach for repositories to evaluate their current status and to define future goals in achieving TDR status while demonstrating that they are FAIR-enabling.

## The programme in detail

- collaborative workshops
- test peer-review of CoreTrustSeal applications by experts as preparation for formal submission to the CoreTrustSeal process
- 1-on-1 support and advice
- a variety of practical tools to support services and individuals in their FAIR data practices
- a dedicated helpdesk
- peer community support



### Preservation Policy Planning - Worksheet

This worksheet has been developed to support national repositories in the FAIRSFAR repository support programme in getting CoreTrustSeal certified. It is part of a series of resources prepared by FAIRSFAR to support services and individuals in their FAIR data practices. Depending on your situation, it may also be used as a template to develop your own. The worksheet has been carefully validated from the Digital Preservation Coalition's (DPC) policy checks and the CoreTrustSeal's metadata aspects. The worksheet is not endorsed by the CoreTrustSeal board and will not guarantee repository certification.

**Objectives:**

- To identify the status of relevant policy components to have a preservation policy in place.
- To structure and plan the writing process of the preservation policy.

**Steps to start the writing process of a preservation policy:**

1. Component
2. Existing situation
3. Status
4. Challenges/Options
5. Report
6. Recommendations
7. Decision
8. Deadline

**Instructions:**

- To start, indicate the status of each policy component in the table and then plan an integrated development of the policy and related documents and related activities in the table below. Indicate the status of each component in the table below. Indicate the status of each component in the table below.
- Identify the people who are responsible for each component and who will be involved in the process.

### Roadmap

Timeline from MS1 to MS11. Key milestones include: MS1-MS3: Digital preservation & metadata; MS4-MS6: Digital preservation & metadata; MS7-MS9: Digital preservation & metadata; MS10-MS11: Submit content & metadata.

**Activities:**

- Activity/Task 1: [ ]
- Activity/Task 2: [ ]
- Activity/Task 3: [ ]
- Activity/Task 4: [ ]
- Activity/Task 5: [ ]

**Risk Assessment Table:**

Risk	Risk level

Figure 13 Detail of the repository support programme factsheet



### 3.1.2. Exploited channels and activities performed

Since the launch of the support programme in February 2020, the **10 selected data repositories** have actively participated in a number of FAIRsFAIR and external activities to get them up to speed with the FAIR data principles and CoreTrustSeal requirements. Some of the examples are highlighted below:

- The data repositories participated in five international support workshops organised by FAIRsFAIR in the framework of the repository support programme, sharing their knowledge, exchanging lessons learnt and listening to experts in the field. One workshop was organised as a face-to-face event and the other four as virtual events.
- The participants have also actively contributed to policy drafting, consultations and other initiatives as part of the FAIRsFAIR programme.
- Some of the repositories have also contributed to a number of external activities that showcase their experience with the repository support programme and good practices:
  - For example, the **SOCIB data repository (Spain)** has shared its experience with the support programme and how effective it is in achieving the CTS certification in the National Roadshow series in Spain and the FAIRsFAIR support webinar in 2021<sup>43</sup>.
  - In addition, the **Apollo repository of the University of Cambridge (United Kingdom)** and the **ESRF data repository (France)** have provided lightning talks on their experiences with the support programme during the International Conference on Open Repositories in 2021<sup>44</sup>.
- Regular one-on-one support and advice have been made available throughout the programme to support the data repositories in preparation for the CoreTrustSeal certification.

The *CoreTrustSeal+FAIR* enabling alignment and related capability-maturity model have received feedback from the supported repositories and made available publicly to ensure comments from a range of experts. Communications channels with the CoreTrustSeal Board have remained open. The FAIRsFAIR project will provide final feedback to the Board based on FAIRsFAIR experiences and outputs at the end of the project.

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<sup>43</sup> <https://www.fairsfair.eu/events/fairsfair-roadshow-spain-0>

<sup>44</sup> <https://or2021.openrepositories.org/>

Finally, in addition to the one-to-one support, FAIRsFAIR also delivered a series of **free Repository Support Webinars**<sup>45</sup> to help repository managers become familiar with FAIR-enabling practices. Each webinar provided an overview of a specific FAIR-enabling activity, shared information on recent developments within FAIRsFAIR and other initiatives as well as offered examples of good practice, practical tips and recommendations.

The webinars were designed to allow for interaction with the participants and accordingly the agenda for each included ample time for questions and discussion. The webinars were limited to a maximum of one and a half hours each to allow participants to join without a huge commitment of time on their part. Each webinar was recorded and made available through the FAIRsFAIR website so that those unable to attend the live session are able to review the content at their leisure.

Webinars in the series to date include:

- **Certified Digital Preservation:** Practical tips for repositories on aligning with CoreTrustSeal in their Digital Preservation policies (November 2021)
- **Metadata exchange issues** - when standard meets reality. Lessons learned from B2FIND (October 2021)
- **Assessing the FAIRness of data holdings:** Using F-UJI to make your repository more FAIR-enabling (September 2021)
- **Using registries** to improve the visibility of your repository service (July 2021)
- **The role of Repositories in enabling Persistent Identifier (PID) Graphs** (April 2021)

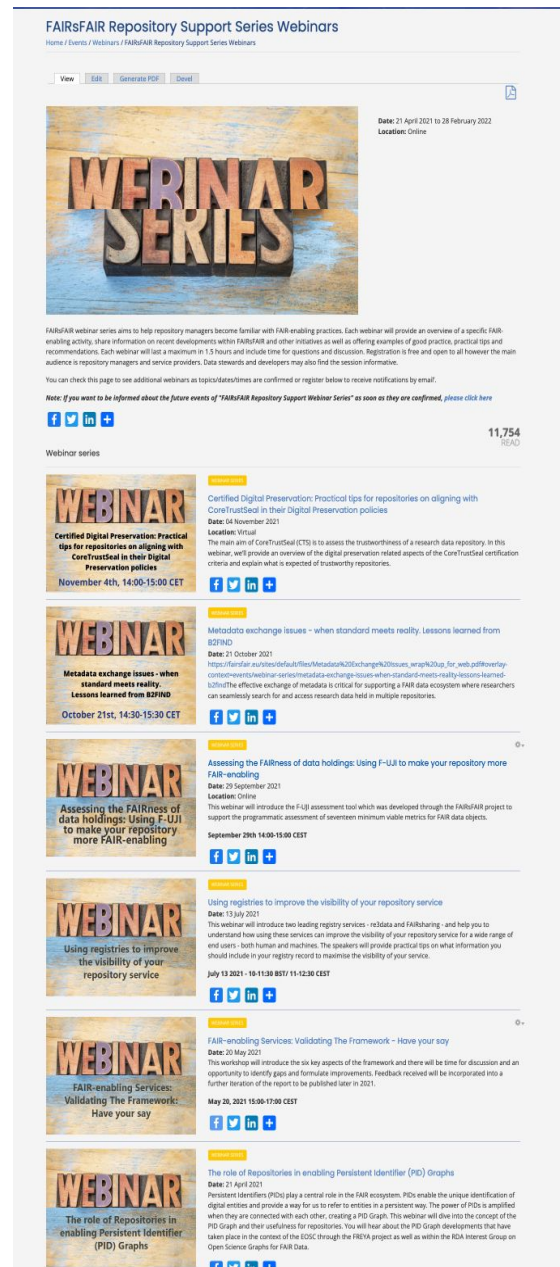


Figure 14 FAIRsFAIR Repository Support webinar series dedicated page

Last but not least, additional webinars are planned before the end of the project in February 2022.

<sup>45</sup> <https://fairsfair.eu/events/webinars/repository-support-webinars>



### 3.1.3. Impact & results achieved

The efforts of the FAIRsFAIR support programme and its partners have borne considerable fruit. Some of the key results are presented below:

- Up until December 2021, **nine out of ten repositories have already submitted their applications to CoreTrustSeal and the other repository are on their way to doing so.** This high number demonstrates the strong commitment and dedication of the selected repositories to becoming more FAIR-enabling and trustworthy and the effectiveness of the target support and methodology adopted by the FAIRsFAIR programme.
- Besides five collaborative workshops for the data repositories, **ten test peer-reviews of CoreTrustSeal applications have been carried out.** This exercise has helped the data repositories to apply for the CoreTrustSeal certification in a planned and consistent way.
- Within the support programme, a number of services and practical tools, including FAIR Aware and the F-UJI too, have been developed to support the data repositories on their journey to becoming more trustworthy and FAIR-enabling<sup>46</sup>.

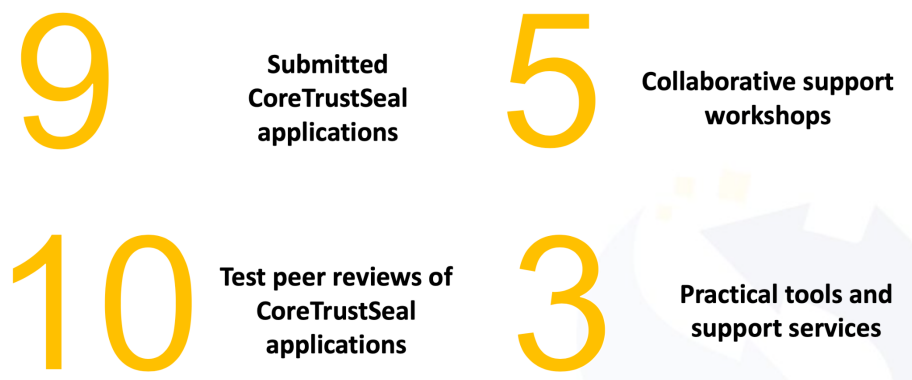


Figure 15 Overview of some of the key results of the FAIRsFAIR support programme for repositories

In addition to the activities in Europe, the support programme team has also been actively engaged with its global peers. Some other relevant repository support initiatives where the team has been involved include the **American Geophysical Union community, the Australian Research Data Commons and the Portage Network in Canada.** The team continuously strives to share lessons learned and together identify good practices that can be promoted to help other repositories.

*“For our repository trust, reproducibility and actual reuse were the main drivers for certification. FAIRsFAIR support was extremely useful for us.”*

**Rudolf Dimper, ESRF data repository, France**

*“The programme really helped us to understand what to do and how to face each requirement and, especially, the relations between them. They were also quite proactive reviewing the different iterations of our documentation, and provided useful, extensive feedback.”*

<sup>46</sup> For further reference see the roadmapping exercise and the stakeholder exercise

<https://doi.org/10.5281/zenodo.3741693> and the checklist <https://doi.org/10.5281/zenodo.5779791>

*“The guidance in the right direction to start with the certification process was very helpful as well as the 1-on-1 feedback discussions with FAIRsFAIR team members.”*

**Anonymous feedback gathered from the end-of-programme questionnaire**

The CoreTrustSeal Support Programme and work to align with FAIR through the **CoreTrustSeal+FAIR enabling capability-maturity approach** has gone beyond direct benefits to repositories. Communication channels between EOSC projects (specifically FAIRsFAIR, EOSCNordic and SSHOC) have led to exchanges of experience on support and on the alignment of CoreTrustSeal and FAIR. All three projects cooperated on the output **FAIR+Time, Preservation for a Designated Community**<sup>47</sup>, and the **EOSC-Nordic project will take the CoreTrustSeal+FAIR enabling work beyond the lifespan of FAIRsFAIR** by evaluating it with their own cohort of supported repositories<sup>48</sup>. FAIRsFAIR will provide feedback to the CoreTrustSeal Board that will be incorporated into their periodic review, with successful proposals integrated into the next version of their requirements.



Figure 16 Call for contributions to the FAIR+Time, Preservation for a Designated Community report

#### 3.1.4. Data repositories contributing to FAIR assessment

In the area of FAIR data assessment, FAIRsFAIR has developed both metrics for data assessment and the F-UJI FAIR data assessment tool<sup>49</sup> to perform FAIR data assessments against these metrics. F-UJI focuses on how FAIR data are in existing repositories. FAIRsFAIR also launched the FAIR-Aware tool<sup>50</sup> that has a focus on FAIR awareness and education by providing researchers and data stewards with practical guidance on how to make new data more FAIR. In the design of both tools, repositories

<sup>47</sup> The draft working paper FAIR + Time: Preservation for a Designated Community was prepared in collaboration with the SSHOC and EOSC-Nordic projects. It seeks to present key concepts and expand on them to specify the standards and assessments required for an interoperable ecosystem of FAIR data preserved for the long term in generalist and specialist FAIR-enabling trustworthy digital repositories (TDR) for a defined designated community of users.

<https://www.fairsfair.eu/news/fair-time-preservation-designated-community-eosc-nordic>

<sup>48</sup> See also the adoption story <https://www.fairsfair.eu/news/eosc-nordic-fairification-study-testing-f-uji>

<sup>49</sup> <https://github.com/pangaea-data-publisher/fuji>, <https://www.f-uji.net> (web version) and

<sup>50</sup> <https://www.fairsfair.eu/fair-aware>

played an essential role. **FAIRSFair has integrated pilot repositories into the process of developing F-UJI, the automatic FAIR data assessment tool.** Since FAIR data assessment is a continuous process, the iterative consultation process was very fruitful in the design of the F-UJI tool. The tool has been extensively tested with nine data repositories. **Not only has FAIRSFair received feedback from them on improving the tool, but the tool has also provided them practical guidance on how the repositories can increase the level of data FAIRness in their repositories.**

Furthermore, both the **F-UJI and the FAIR-Aware tools have potential to become an integral part of the EOSC ecosystem.** In the current EOSC and FAIR landscape, many initiatives and projects are working on the topic of FAIR assessment. FAIRSFair is a frontrunner in aligning the variety of FAIR data assessments in Europe. The work around FAIR object testing benefits a wide variety of stakeholders. Potential stakeholders are publishers who expressed interest in the tool during the **STM Research Data Year**<sup>51</sup>. Funders are also interested in the tool which is expressed in a MoU between FAIRSFair and the Wellcome Trust to support the FAIR-ware project. Commercial repositories such as **Figshare**<sup>52</sup> have expressed interest in assessing and demonstrating the FAIRness of their data holdings.

## 3.2. Universities, higher Education Institutions and research institutions

Universities, other higher education institutions and research institutions are among the core target groups of the FAIRSFair project's activities. Supporting the development of FAIR data culture at the institutional level through the development of a FAIR competence framework is one of the main objectives of the project. The involvement of the higher education and research sector is therefore beneficial in order to develop comprehensive tools that address their needs and priorities in the context of FAIR research data.

### 3.2.1. Purpose for engagement

Higher education institutions were heavily involved in activities organised within FAIRSFair's Work Package 7 (WP7) "FAIR Data Science and Professionalisation". WP7 aimed at bringing the project's results closer to the university sector, including its leaders, lecturers and professors, data practitioners and policy makers. The ultimate objective of WP7 is to support the integration of FAIR data-related skills and content in university programmes and curricula at the bachelor, master and doctoral levels.

### 3.2.2. Exploited channels and activities performed

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<sup>51</sup> Read also the interview with Joris van Rossum, Director for Research data, and Eefke Smit, Director of Standards and Technology of the International [STM Association](https://www.stm-association.org/) here <https://www.fairsfair.eu/articles-publications/role-publishers-implementing-fair-policies-and-practice-rdm-interview-joris>

<sup>52</sup> <https://figshare.com/>

Across the project's lifetime, WP7 partners completed a **landscape analysis**<sup>53</sup> to map the state of play of FAIR data education in Europe, **desk research**<sup>54</sup> of an existing competence framework for FAIR data science and the development of the project's own "**FAIR Competence framework for higher education**"<sup>55</sup>. These deliverables built a comprehensive framework for the development of the two final results of the WP: **the adoption handbook "How to be FAIR with your data - A teaching and training handbook for universities"**<sup>56</sup> and the **report "Good practices in FAIR Competence Education"**, due by the end of the project.

Both documents will tangibly support higher education institutions in equipping students, researchers and the staff with the skills needed to practice FAIR research data management. As end-users, universities were deeply involved in the definition of these deliverables, through a series of events and other activities. Input from the sector was particularly welcomed in order to ensure that the proposed document would concretely represent practical tools for universities in their efforts to improve teaching and training provisions for FAIR data science.

In order to ensure reaching a wider pool of interested institutions, the promotion of the results and activities was conducted through the exploitation of the main social media channels, newsletters and targeted email exchanges. These included both channels established by the FAIRSF AIR project and channels provided by its individual partners.

To foster the involvement of higher education institutions and stakeholder organisations with the project's activities and results, WP7 organised two series of workshop in 2020 and 2021:

- **Stakeholder workshops.** A series of three online events organised in collaboration with stakeholder organisations during which presentations and discussions were focused on different themes related to FAIR data education and training to exploit potential synergies with them. Events in this series included workshops on "*Integrating FAIR data science competences in higher education curricula: the role of academic and research libraries*"<sup>57</sup> with **LIBER Digital Skills for Library Staff & Researchers Working Group**; "*National policy and support actions for research data skills - impact and experiences*"<sup>58</sup> with **OpenAIRE** and "*Learning lessons from FAIR data implementation. Good practices from universities across Europe*"<sup>59</sup>.
- **University workshops.** A series of three online events organised by the European University Association in collaboration with three universities that are partners of the FAIRSF AIR project (**University of Minho, University of Amsterdam and University of Göttingen**) on different topics addressing how higher



<sup>53</sup> <https://zenodo.org/record/3629683#.YYo012DMKUI>

<sup>54</sup> <https://zenodo.org/record/4009007#.YYo0-2DMKUI>

<sup>55</sup> <https://zenodo.org/record/5361917#.YYo1D2DMKUI>

<sup>56</sup> Pre-publication of the document due in December is available here

<https://zenodo.org/record/5665493#.Ya572VPSJTY>

<sup>57</sup> <https://www.fairsfair.eu/articles-publications/integrating-fair-data-science-competences-higher-education-curricula-role>

<sup>58</sup> <https://www.fairsfair.eu/events/national-policy-and-support-actions-research-data-skills-impact-and-experiences-0>

<sup>59</sup> <https://www.opensciencefair.eu/2021/workshops/learning-lessons-from-fair-data-implementation-good-practices-from-universities-across-europe>

education institutions can better integrate FAIR data competences in their programmes and curricula at the different levels. Events in this series included workshops on “FAIR data competences in doctoral education programmes<sup>60</sup>” (May 2021), “Training the trainers: Data Management and FAIR data principles in university curricula<sup>61</sup>” (September 2021), and “Practical implementation of FAIR-related content in university curricula and teaching<sup>62</sup>” (October 2021).

All events organised in the context of the two series were followed by **blog posts** summarising the workshop’s discussions and results. Blog posts were then published on the FAIRSFAR website under the section Articles & Publications<sup>63</sup> and promoted on social media channels. To support the disseminations of the event’s results, EUA also conducted a Twitter campaign in November and December 2021 looking back at all the workshops organised by WP7 and providing links to the articles.

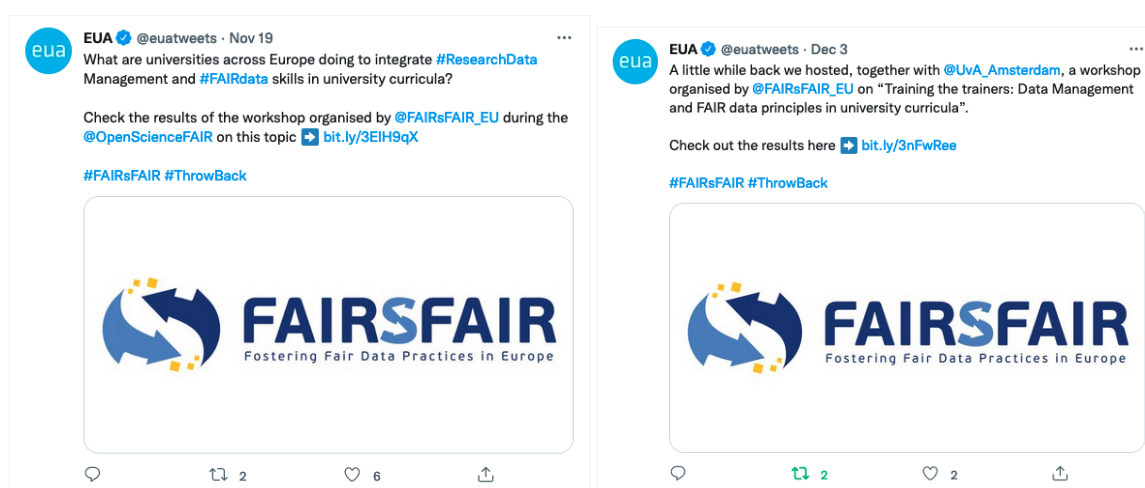


Figure 17 Sample EUA tweets about the training events - Autumn 2021

The engagement of the university sectors was also fostered in order to gather input and feedback for the development of different WP7 deliverables. In 2019, a survey targeting universities was run in order to collect quantifiable information and examples from the higher education sector that could feed into the report “FAIR in European Higher Education<sup>64</sup>”. To this end, two focus groups were also organised to collect qualitative insights from stakeholders. The “Universities, Research Data Management and the FAIR Principles” focus group took place in Madrid on 30 October 2019 and was hosted by the University Carlos II of Madrid. The focus group on “Teaching (FAIR) Data Management and Stewardship” took place on 19 November 2019 and was hosted by the University of Amsterdam. Collectively, the two focus groups gathered **51 participants from different European countries**.

<sup>60</sup> <https://www.fairsfair.eu/events/fair-data-competences-doctoral-education-programmes>

<sup>61</sup> <https://www.fairsfair.eu/events/fairsfair-event/training-trainers-data-management-and-fair-data-principles-university>

<sup>62</sup> <https://www.fairsfair.eu/events/fairsfair-event/practical-implementation-fair-related-content-university-curricula-and>

<sup>63</sup> <https://www.fairsfair.eu/articles-publications>

<sup>64</sup> <https://zenodo.org/record/5361815#.YYulcWDMI2w>

The development of the adoption handbook *“How to be FAIR with your data - A teaching and training handbook for higher education institutions”* also benefited from the involvement of the higher education sector. In particular, the deliverable was the result of a collaborative effort involving a group of around **40 collaborators representing data professionals, teachers and trainers from different European and international universities as well as stakeholders in the field**. The writing process was organised through a series of **6 book sprint events**<sup>65</sup> that took place in June 2021. The document also underwent a community review during the summer of 2021 to gather additional feedback and input from the sector.

### 3.2.3. Impact & results achieved

Events organised by FAIRsFAIR’s WP7 targeted and reached professionals from universities and other higher education and research institutions; it gathered more than **400 participants**. Looking at the specific number of higher education institutions represented, this amounts to approximately **188 universities, of which 25 were institutions from countries outside Europe**.

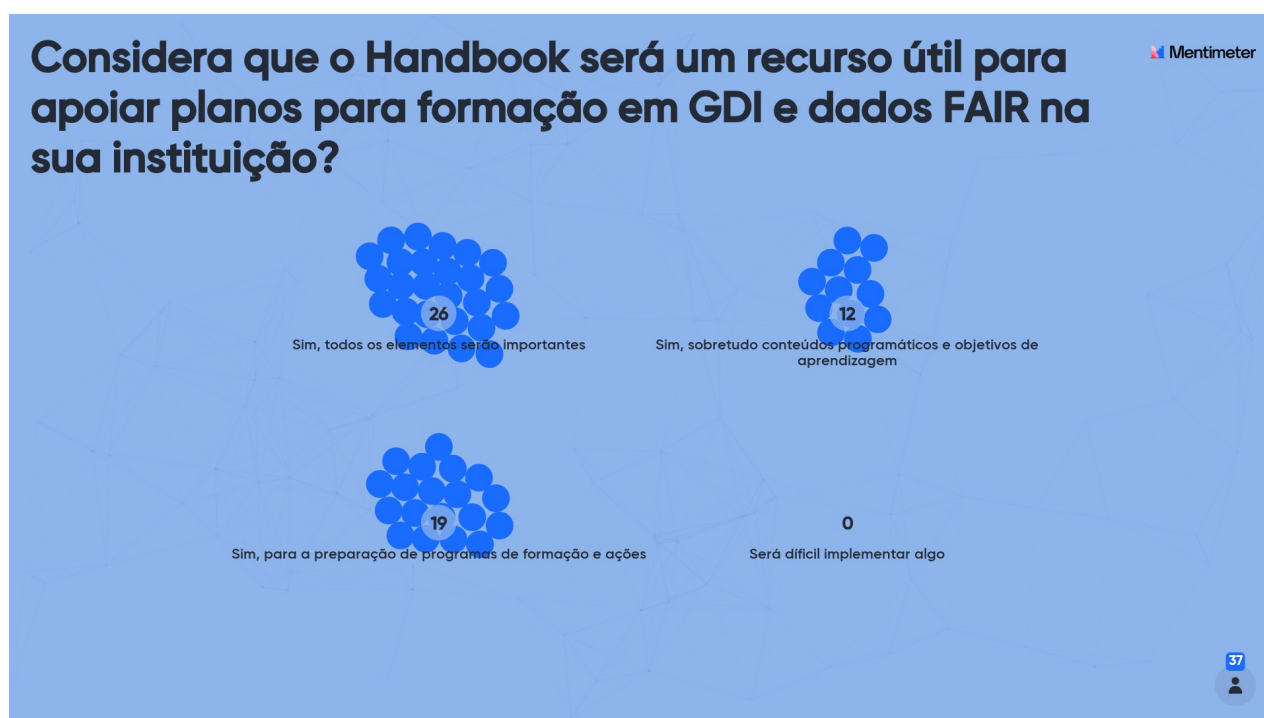


Figure 18 Question about the usefulness of the handbook raised during the Portuguese Roadshow, November 2021

**Do you consider that the Handbook will be a useful resource to support the development of training on RDM and FAIR data in your institution?**

4. Yes, all the elements will be relevant: 26
5. Yes, mainly lesson plans and learning outcomes: 12
6. Yes, to prepare training programmes: 19
7. It will be difficult to implement: 0

<sup>65</sup> <https://www.fairsfair.eu/events/booksprint-fair-adoption-handbook-universities>



## 7.1. Specialised service providers

### 7.1.1. Purpose for engagement

By specialised service providers we mean FAIR enabling infrastructure or services other than data repositories. FAIR supporting repositories are not enough to facilitate a FAIR service ecosystem and implementation of the FAIR data principles. The creation and maintenance of an ecosystem of interoperable and technically resilient services require a wide range of registries and similar services that create supporting structures for the researcher through the research process and for the data and other outputs during their entire lifecycle. The main types of specialised services addressed in this project have been **services that enable the use of persistent identifiers, metadata aggregation and managed semantic artefacts**. In practice there has been cooperation and interaction with different service and data catalogues and with a large part of the community providing semantic interoperability services.

### 7.1.2. Exploited channels and activities performed



FAIRSFair cooperated with service catalogues such as data schema registries **re3data.org**<sup>66</sup> and **FAIRsharing**<sup>67</sup>. Both of these have ambitions to implement and support the FAIR ecosystem through for the use of well managed identifiers and machine-actionable content. The FAIRSFair project has also signed a **memorandum of understanding** with

FAIRsharing. In the memorandum it was agreed that FAIRSFair and FAIRsharing would work jointly on areas of common interest, such as a common definition on what the FAIR principles mean for data repositories, services, semantic artefacts and other research outputs, and other similar things. In practice, the work has focused on **information exchange** on interpretations and definitions of the FAIR implementation profile. Susanna-Assunta Sansone from FAIRsharing has also contributed in valuable ways as a **FAIR Champion**. The re3data repository catalog service participated in a FAIRSFair organised **hackathon** on the FAIR Data Point in October 2021<sup>68</sup>, which created a good use case for implementing the DCAT2 vocabulary also on service level. In September 2021, FAIRSFair jointly organised with OntoCommons<sup>69</sup> and FairSharing the workshop "*Applying FAIR principles to open science and industry to drive innovation: challenges and opportunities*", during the Open Science FAIR 2021<sup>70</sup>. The workshop was dedicated to data managers, applied researchers (e.g., industrial applications), open science researchers, and ontologists/knowledge engineers looking for guidance towards making their data FAIR.

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<sup>66</sup> <https://www.re3data.org/>

<sup>67</sup> <https://fairsharing.org/>

<sup>68</sup> <https://www.fairsfair.eu/events/make-your-repository-fair-enabling>

<sup>69</sup> <https://www.ontocommons.eu/>

<sup>70</sup> <https://www.fairsfair.eu/events/applying-fair-principles-open-science-and-industry-drive-innovation-challenges-and>



Metadata interoperability issues have also been addressed with regard to aggregation. This has also been in collaboration with **Eudat B2Find**. The results were presented in a **common webinar** in October 2021<sup>71</sup>.

The FAIRsFAIR team established strong cooperation with semantic services; for example, the community of experts behind large ontology services like **Bioportal**<sup>72</sup> have been providing feedback and comments on the recommendations made for FAIR semantics as well as the minimal metadata model created. There have been several **workshops, webinars** and **calls**, as well as **presentations in conferences** (the Research Data Alliance plenaries, SciDataCon and other similar events). Both **web pages, Google drive documents** and **GitHub** have been used as platforms for interaction and cooperation and facilitate engagement, commitment and uptake. For similar reasons, **interviews** were conducted with experts and persistent identifier service providers in preparation of FAIRsFAIR Deliverable 2.1<sup>73</sup>.



The **Software Heritage Fund**<sup>74</sup> has also been linked to the project and contributed significantly as a partner to the milestone report on FAIR Software<sup>75</sup>. The collaboration was also recently stated during the 5 year anniversary event and the video they made for that occasion<sup>76</sup>.

### 7.1.3. Impact & results achieved

In June 2021, 79 experts from 17 different communities participated in a **virtual workshop on the common minimum metadata for semantic artefacts**<sup>77</sup>, which shows the great value FAIRsFAIR work has had for this very specialised community. The frequent downloads of the deliverables on FAIR semantics (more than 800), show that there is a great need for this kind of basic guidelines to support the implementation of the FAIR principles for specialised services.

**Re3data and EUDAT B2Find** have both taken steps to enhance the implementation of the FAIR principles during collaboration in conjunction with the FAIRsFAIR project.

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<sup>71</sup> <https://www.fairsfair.eu/events/webinar-series/metadata-exchange-issues-when-standard-meets-reality-lessons-learned-b2find>

<sup>72</sup> The most comprehensive repository of biomedical ontologies <https://bioportal.bioontology.org/>

<sup>73</sup> <https://doi.org/10.5281/zenodo.5535719>

<sup>74</sup> <https://www.softwareheritage.org/>

<sup>75</sup> See M2.15 Assessment report on FAIRness of research software, <https://doi.org/10.5281/zenodo.4095092>

<sup>76</sup> <https://www.youtube.com/watch?v=Ez4xTKJO2o>

<sup>77</sup> <https://www.fairsfair.eu/events/common-minimum-metadata-semantic-artefact>



## 8. FAIRsFAIR Competence Centre

Every research community has its own particular opportunities and barriers for FAIR data uptake and compliance. Established practices, data types and sizes, data gathering processes and techniques, as well as precise community requirements, influence the way different domains approach the FAIR principles. Competence Centres are envisaged as a model of engagement and support for research communities, with the ultimate goal of providing skills, training and related materials that are essential for mainstreaming FAIR practices within a strong research data ecosystem that turns digital technologies into reality.

By working with a broad range of communities, FAIRsFAIR brought together a virtual competence centre that will continue as a legacy of reference for best practices and guidelines for FAIR uptake for many different communities. **The FAIRsFAIR Competence Centre is to be conceived as the overarching system that was built across the 36 month timeframe of the project, as a virtual place to go for advice, training and services, to maximise synergies and make efficient use of resources and project outputs.**

FAIRsFAIR Competence Centre's<sup>78</sup> concept is illustrated by the figure below. It is a shared hub of expertise whose operations develop around 3 main roles, namely Advisory (training resources, guidance), dissemination (exchanges on the fairdata forum), and harmonisation (metadata interoperability)<sup>79</sup>. Below you can find a more detailed description of the main roles of the Competence Centre:

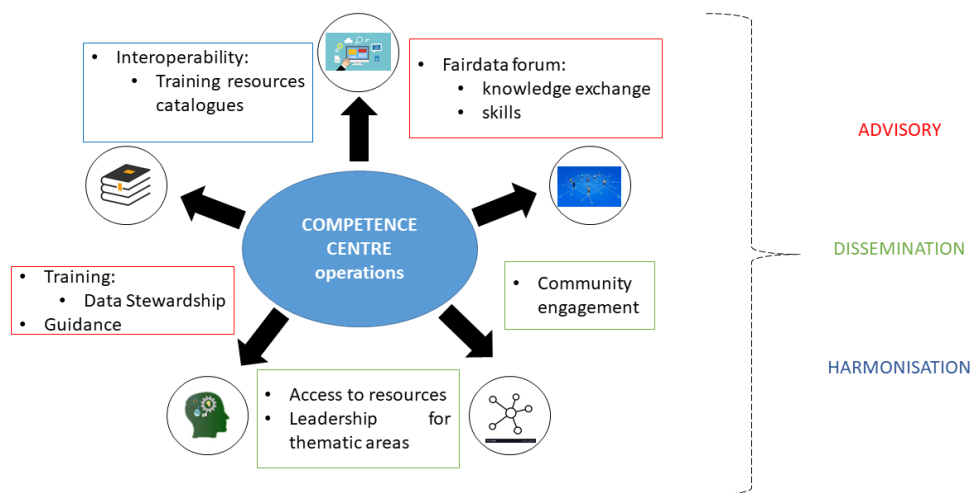


Figure 19 Overview of the FAIRsFAIR Competence centre

<sup>78</sup> <https://fairsfair.eu/competence-centre>

<sup>79</sup> See D6.2 Initial Core Competence Centre Structures and D6.3 Established Competence Centre for Variety of Communities

***Advisory: networking space to enable stakeholder collaborations and routing people to expertise in thematic areas.***

Building on the concept that a competence centre is a shared hub of expertise that connects people and resources, the task of creating a virtual competence centre has been approached through the development of an online space, the FAIRdata Forum<sup>80</sup>, which acts as a space for community engagement. The forum has also been used as a platform to support Data Stewardship training, in a concerted FAIRsFAIR-CODATA-RDA’s efforts, as detailed in section 2.2 above.

***Harmonisation: to consistently describe resources relating to FAIR data stewardship; provide leadership in harmonisation of policies, tools and resource.***

One of the aims of the Competence Centre is to collaborate with communities on training materials and contribute to developing standards for describing these. It is contributing to joint initiatives that address the problems of a fragmented landscape, specifically addressing the core issues of classification and exposure of metadata as the most challenging, but highest priority, to the interoperability of training resource catalogues.

***Dissemination: dissemination of training material and courses; enable sharing of best practices.***

Dissemination constitutes another role of FAIR Competence Centre and has materialised through activities on the Forum (collection of posts and exchanges) but also, by the provision of training material for the Training Library<sup>81</sup>. A Moodle course Data Steward Training is also being developed and will be made available by the end of the project (using the EOSC Synergy Learn platform).

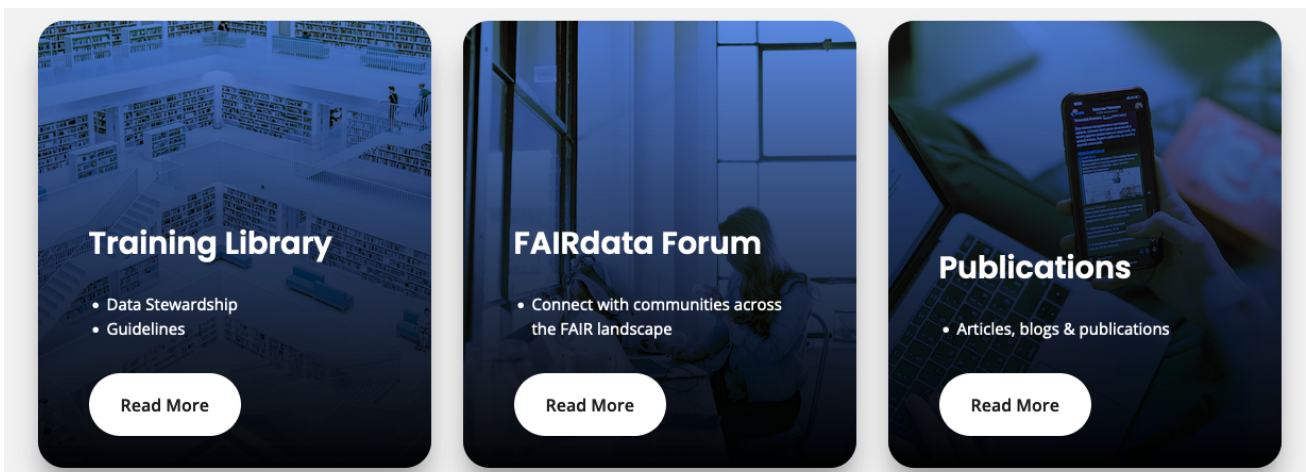


Figure 20 FAIRsFAIR Competence Centre – online view

<sup>80</sup> <https://fairdataforum.org/>

<sup>81</sup> <https://www.fairsfair.eu/competence-centre/training-library>

## 9. Channels for stakeholder uptake - overview

As detailed in the previous sections, a great variety of channels was adopted to reach different stakeholders, ensuring flexibility with respect to the specific engagement needs and adapting strategies over time to accommodate user feedback and to maximise the results.

### 9.1. Organisation of events, webinars and focus groups

The **organisation of events** was used across all work packages and activities. More than 65 events have been directly organised by FAIRsFAIR; this has been an extremely successful channel, looking both at the relevant number of participants (average of 86 participants per event and 131 participants per webinar) and also at the feedback that was collected from the audiences, which supported the development of tools as well as the delivery of reports (e.g. Policy Reports were validated by over 25 different Policy Makers). **FAIRsFAIR organised 29 workshops, 10 webinars, 9 national roadshows, 4 summer schools, 2 focus groups, several training sessions, that all together ensured a continuous engagement with the audience** (See Annex 1).



Figure 21 Overview of FAIRsFAIR events

The **organisation of webinars**, which was increased during the COVID-19 pandemic, was another effective way to disseminate information about project latest developments. The 10 webinars organised had an average participation of 120 individuals per session, maximised by views of the

recordings on FAIRsFAIR YouTube channel<sup>82</sup>. Webinars were also the channel used to engage **with data repositories, with a webinar series created exclusively for them** during the support programme (detailed in section 3.1 above) to provide repository professionals with a consistent format where they can find common answers to shared questions, a place to debate on practices and ultimately a recurring meeting looking forward to.

## 9.2. Open calls and surveys

Open calls and surveys were used by the FAIRsFAIR project as ways to engage more formally with targeted stakeholders; these aimed, among other things, to identify those stakeholders who might benefit for project support, to collect information on specific topics, or to invite feedback on project deliverables and outputs.

**A total of 9 surveys and open calls were organised** during the project (see Table 2), with different purposes. For instance, **52 and 35 applications were received for the Repository support open calls**, for the CoreTrustSeal Certification and the interoperability support call respectively. From the “FAIR policies and practices” survey, **over 100 responses** were received (40% from universities, 30% from research infrastructures and 10% from research organisations, from several different countries), which were crucial for FAIRsFAIR to deliver the several recommendations for policy makers, data repositories and practices to support FAIR data principles. **Over 70 individuals** applied to assess their current policies towards FAIR practices and almost **60 experts applied** to contribute to the FAIRsFAIR **handbook for practical implementation of FAIR in curricula and become one of the** co-authors of the document. The table below gives details of each of the open calls and surveys issued by the project

N	Type	What	Date	Audience
1	Open Call	<a href="#">Support for data repositories towards achieving CoreTrustSeal certification</a>	July 2019	Data Repositories
2	Open Call	<a href="#">Support for the “FAIRification” of your repositories</a>	July 2019	Data Repositories
3	Survey	<a href="#">FAIR policies and practices</a>	August 2019	<i>Researchers, Repository managers and data practitioners</i>
4	Survey	<a href="#">Semantics and interoperability</a>	August 2019	<i>Data curators, architects, developers</i>
5	Survey	<a href="#">Research data and FAIR data principles</a>	September 2019	Higher education institutions
6	Open Call	<a href="#">Policy enhancement support</a>	November 2020	Policy Makers

<sup>82</sup> <https://www.youtube.com/channel/UCE4wSBnNIBfu6SqlBaIMfNg>

N	Type	What	Date	Audience
7	Open Call	<a href="#">FAIR experts: Apply and join the Booksprint for FAIR - Adoption Handbook for Universities</a>	April 2021	Data Experts and Higher Education Institutes
8	Survey	<a href="#">Implementation stories related to the PID Graph notebooks</a>	June 2021	Data Managers
9	Survey	<a href="#">Community review for teaching and training handbook on the FAIR principles</a>	July 2021	Higher education institution

Table 2 FAIRSFAR Open Calls and Surveys

### 9.3. Publications and scientific papers

At the time of writing, 9 FAIRSFAR consortium partners published scientific papers acknowledging the work done by FAIRSFAR were published at international conferences and magazines. The F-UJI tool, FAIR Semantics, FAIR repositories are some examples of topics tackled in the peer-reviewed papers submitted during the project lifetime.

N	Title	Where	Date
1	<a href="#">The TRUST Principles for digital repositories</a>	Scientific Data	May 2020
2	<a href="#">Integrating data and analysis technologies within leading environmental research infrastructures: Challenges and approaches</a>	Ecological Informatics	June 2020
3	<a href="#">Conceptualizing and Assessing the FAIRness of Environmental Scientific Data in Trustworthy Digital Repositories</a>	AGU2020	August 2020
4	<a href="#">F-UJI: An Automated Assessment of the FAIRness of Research Data</a>	Geospatial Sensing 2020	August 2020
5	<a href="#">From Conceptualization to Implementation : FAIR Assessment of Research Data Objects</a>	Data Science Journal	September 2020
6	<a href="#">Recommendations for Services in a FAIR Data Ecosystem</a>	Patterns (Cell Press)	September 2020
7	<a href="#">FAIR Semantics and the NVS conference</a>	IMDIS 2021	April 2021
8	<a href="#">FAIR + Time: Preservation for a Designated Community</a>	-	May 2021
9	<a href="#">White paper: The Future of FAIR</a>	Springer Nature	July 2021

Table 3 FAIRSFAR peer-reviewed articles and papers

### 9.4. Engaging stakeholders for community review

FAIRSFAR was able to bring together a wide community of individuals highly interested in FAIR data practices. The project engaged with community members to disseminate projects activities and request feedback on documents and other key outputs. A community review process was set in place from the early stages of the project to ensure wider sharing of the project documents, coordinated by WP5. It ensured that for those documents where a public review process was needed, a series of actions were taken to ensure wide dissemination of the community review, including email marketing communication towards target projects and initiatives (e.g. EOSC Cluster Projects, EOSC Secretariat, RDA Working Groups, EOSC 5B Projects, OpenAIRE), social media dissemination, newsletters.

How we ensure RfC are continuously promoted?					
What to communicate	Dissemination piece	Channel	Timing	Notes	Responsible person
Details of the deliverable	Publication of Deliverable on Zenodo	Zenodo	Within 2 w/days from deliverable submission		Deliverable's author(s)
Details of the deliverable	Message	WP5 lists	Within 2 w/days from deliverable submission; included in upcoming WP5 call agenda	The more details you provide, the more detailed the communication will be	Deliverable's author(s)
Recent RfC open	Newsletter	FAIRSFAR newsletter	Upcoming release of the newsletter		Letizia
Launch of the RfC	Message	EOSC WGs	Monthly		PCO
Launch of the RfC	Dedicated PR	CORDIS	Within 5 w/days from publication on Zenodo		Rita
Launch of the RfC	Message	EOSC Liaison platform	Monthly	It can source the news piece	Rita
Launch of the RfC	Message	ESFRI Clusters	Monthly		Rita
Launch of the RfC	Message	5b projects - comms list	Monthly	eosc-5-comms@eosccsecretariat.eu	Rita
Recent RfC open	Message	FAIRSFAR consortium (mailinglist, Basecamp)			Sara
Launch of the RfC	Message	All@ + Basecamp	Monthly		Sara
Launch of the RfC	Message	FAIR Champions	Monthly		Sara
Launch of the RfC	Dedicated news piece	FAIRSFAR website	Within 5 w/days from publication on Zenodo	On-time communication by deliverable's authors to WP5 is fundamental!	Serenella
Launch of the RfC	Dedicated article	Linkedin Article	Within 5 w/days from publication on Zenodo		Serenella
Recent RfC open	News piece	FAIRSFAR website	Monthly	Combining current deliverables open for RfC	Serenella
Launch of the RfC	Social media	Twitter, Linkedin posts	The day the publication of the news item		Serenella
Details of the deliverable	Social media	Twitter, Linkedin posts	Continuous until deadline	At least 3 posts / deliverable	Serenella
Launch of the RfC	Message	Other	Monthly	It depends on documents, i.e. RDA Groups	TBD

Figure 22 Sample preview of the Request for comments promotional campaign

## 9.5. Presence at third-party events

During the project timeframe, FAIRSFAR was promoted at **over 70 third-party events** (see Annex 2). Due to the advent of the COVID-19 pandemic, most of these events were online, with the positive side-effect of engaging with a more global audience. The visibility was reached through presentations, organisation of joint workshops, presence at panel discussions, virtual exhibition booths and poster/paper submissions.



## 9.6. Online communications & outcomes



Figure 23 FAIRSF AIR twitter header

From March 2019 to November 2021, all FAIRSF AIR partners engaged continuously with target stakeholders in terms of communication and dissemination activities. These activities have created the foundation for an effective dissemination plan and efficient exploitation of FAIRSF AIR results.

As of November 2021, the FAIRSF AIR online stakeholder community has **5,500 members from different stakeholder categories** including **3,800 social media followers** (+100% from 1,900 D5.2 March 2020) and **1,350 registered on the FAIRSF AIR website** (+237% from 400 D5.2 March 2020), together

with **363 newsletter subscribers**. These individuals were engaged not only via online communication activities, but also thanks to the organisation of events, webinars, surveys, open calls, partners' networks, and the establishment of synergies with initiatives that match and complement the FAIRSF AIR mission, mostly related to Open Science and the European Open Science Cloud (EOSC).

In order to ensure reaching a wider audience, the promotion of the results and activities of the FAIRSF AIR project was conducted through the exploitation of the main social media channels, newsletters and targeted email exchanges. These included both channels established by the FAIRSF AIR project and channels provided by its individual partners.

### 9.6.1. Social media

The social media activity of FAIRSF AIR mostly focuses on its **Twitter**, **LinkedIn** and **YouTube** channels, providing an instant form of communication with community members and potentially interested people. Through frequent activity and interaction, the outreach team is ensuring continual visibility of the project's efforts such as events, news posts, articles, publications, and announcements.

#### Twitter

As of November 2021, the community has grown into a total of **3,006 Twitter followers** (+82% from 1654 D5.2 March 2020), where the **1,436 tweets** (in line with the targeted 1440 tweets by the end of the project) **achieved over 1,878,500 impressions**, thanks to frequent posts, mentions and retweets from relevant profiles in our stakeholder communities.

Almost 7% of website traffic comes from the FAIRSF AIR social media channels which offer the opportunity for direct and immediate engagement with users. Twitter alone had more than **1,878,500 impressions** from the beginning of the project and proved a highly efficient conduit through which to invite users to join events, provide feedback on FAIRSF AIR outputs, apply for funding, share interviews and testimonials from stakeholders, and offer news.



## Sample of most popular FAIRsFAIR Tweets



Figure 24 Sample of popular FAIRsFAIR tweets

### Sample of most popular Mention Tweets of FAIRsFAIR

The online community is very active, not only sharing FAIRsFAIR updates with their networks but also publishing their own messages about FAIRsFAIR activities.



Figure 25 Sample of popular mention tweets of FAIRsFAIR

### LinkedIn

The LinkedIn account of the FAIRsFAIR project has reached **416 followers** as of November 2021 (+560% from 63 D5.2 March 2020), thanks to frequent posts, mentions and retweets from relevant profiles in our stakeholder communities.



Figure 26 Examples of successful posts on FAIRsFAIR LinkedIn



## YouTube

All the relevant videos and webinars produced by FAIRsFAIR are uploaded to the FAIRsFAIR YouTube channel, and collected in specific playlists where necessary (webinars, specific events). As of November 2021, the FAIRsFAIR channel features a total of **58 public videos, 75 subscribers and more than 4,000 views.**

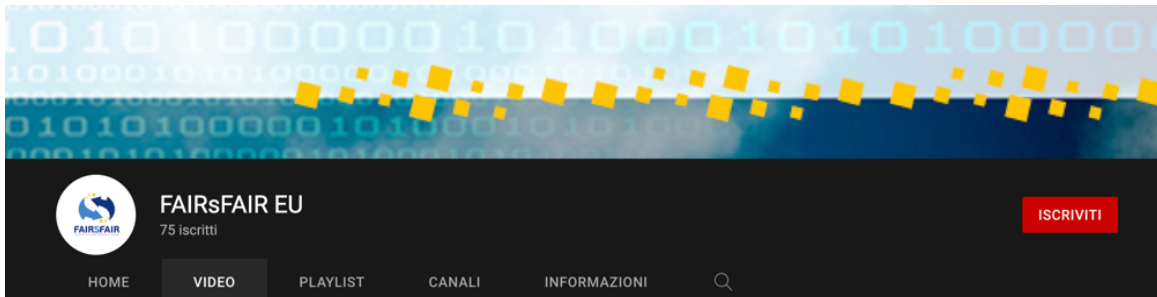


Figure 27 FAIRsFAIR YouTube header

## FAIRsFAIR Hashtags

To increase audience reach, appropriate hashtags related to FAIR data, open science and data management have been used.

List of Hashtags used in FAIRsFAIR Social Media Channels
#researchdata, #developer #knowledge #metadata #interoperability #FAIRdata #OpenScience #openscience #repositories #datascience #semantic #dataresearcher #datamanagement #datarepositories #FAIRpractices #datapolicies #FAIRprinciples #digitaldata #datasources #dataintegration #certification #datapolicies #datainteroperability #libraries #researchdata #datamanagers #FAIRness

Table 4 Sample list of hashtags used in FAIRsFAIR social media channel

### 9.6.2. Newsletters

FAIRsFAIR Newsletters include details about upcoming and past events, as well as achievements and relevant messages for the FAIRsFAIR community. Its content is shaped around the milestone results of the work plan, featuring comments and articles published on the FAIRsFAIR website. So far, **15 newsletters** were circulated (more than the 12 target set for the end of the project) to an audience of more than **363 contacts** engaged in the FAIRsFAIR community. This community has shown interest in receiving constant updates from the project, after participating in FAIRsFAIR events.

The percentage rate of opened articles has been quite stable during the project activity. A percentage rate of open issues between 37.3 and 60.8 is good and shows interest in the content of the project<sup>83</sup>.

<sup>83</sup> For instance, the open rates for the FAIRsFAIR newsletters compare favourably to others in similar domains, see: <https://blog.hubspot.com/sales/average-email-open-rate-benchmark>

N	Title	Date	Total opens (%)	Total clicks (%)
1	FAIRSFAR Newsletter N°1: Open Call for Data Repositories, workshops at the OS Fair and more	02.08.2019	53.8	17.5
2	FAIRSFAR Newsletter N°2: Open consultation ongoing, calls for support of repositories closed, RDA co-located event and more	20.09.2019	60.8	25.9
3	FAIRSFAR Newsletter N°3: Around Europe In 60 Days - News From Porto, Espoo, Amsterdam And Elsewhere!	14.11.2019	57.4	20.0
4	FAIRSFAR Newsletter N°4: The year in review and what's next	19.12.2019	52.7	23.9
5	FAIRSFAR Newsletter N.5: Register for our 1st Webinar, FAIRSFAR "Landscape Analysis and Competence Centres outputs" online! And more	03.02.2020	57.3	19.5
6	FAIRSFAR Newsletter n.6: The latest FAIRSFAR deliverables, and other news from the project	30.03.2020	49.8	15.4
7	FAIRSFAR Newsletter n.7: FAIRSFAR Synchronisation Force meetings online, our session at EOSC-hub Week, latest publications and upcoming events.	10.06.2020	46.1	16.3
8	FAIRSFAR Newsletter n.8: New FAIR data management tools, survey outcomes and recommendations, upcoming events.	06.10.2020	44.4	20.2
9	FAIRSFAR Newsletter N.9: FAIR Assessment And Certification In The EOSC Region, FAIRSFAR Competence Centre And Our Season's Readings. Happy Holidays!	22.12.2020	43.3	12.7
10	FAIRSFAR Newsletter N.10: Our Midterm Review, FAIRSFAR Week 2021, Interview with Isabel Bernal!	08.03.2021	43.1	12.9
11	FAIRSFAR Newsletter N.11: The FAIRSFAR Week 2021 Is Ready To Start. Check The Calendar, Register And Join Us!	07.04.2021	37.9	13.8
12	FAIRSFAR Newsletter N.12: The FAIRSFAR Repository Support Series Webinars!	20.04.2021	39.9	7.1
13	FAIRSFAR Newsletter N. 13: The Synchronisation Force has its Concluding Discussion on 10 June   the FAIRSFAR National	28.05.2021	37.3	6.0

N	Title	Date	Total opens (%)	Total clicks (%)
	Roadshow Series with the next dates & the new readings!			
14	FAIRsFAIR Newsletter N.14: Events & News In Summer Season   The FAIR+Time Working Paper   The FAIR-Aware Tool In French   Adoption Stories & More!	26.07.2021	38.1	11.9
15	FAIRsFAIR Newsletter N.15: The Third Report of the Synchronisation Force is out, the new FAIRsFAIR Competence Centre, 4 National Roadshows in November & much more	29.10.2021	37.9	11.9
		<b>Average</b>	<b>46.7</b>	<b>15.6</b>

Table 5 FAIRsFAIR newsletters

## 10. FAIRsFAIR Synchronisation Force lessons learnt & legacy: a blueprint

There probably are not many research projects, research infrastructures, or research funders that do not address FAIR in one way or another. The need for aligning FAIR-related activities is huge. Therefore FAIRsFAIR set up a Synchronisation Force to establish a dialogue among the various projects and actors in both the EOSC and FAIR ecosystems whose work touches on FAIR in order to:

- Maximise coordination and minimise unnecessary overlap or duplication;
- Encourage the dovetailing of projects' and actors' activities with those of the EOSC Governance Boards;
- Promote mechanisms to support collaboration on turning FAIR into reality.

The FAIRsFAIR Synchronisation Force consists of project members: two representatives from each work package, plus a core team of four. They engaged in two activities:

- the three annual FAIRsFAIR Synchronisation Force workshops engaging with the broad spectrum of FAIRsFAIR stakeholders.
- participation in all Task Forces under the collaboration agreement with the EOSC 5b projects.

Workshops were chosen as the best platform to create a dialogue between the key stakeholders working in the dynamic landscape of FAIR activities in relation to EOSC. Although the workshops were planned to be held as face-to-face meetings, they were restructured as virtual workshops due to the COVID-19 restrictions. The three workshop reports<sup>84</sup> present findings and recommendations gathered in three different reports. The outcomes of such an intense and continuous synchronisation efforts resulted in the "Recommendations for a FAIR EOSC - White Paper FAIRsFAIR Synchronisation Force 2021"<sup>85</sup>, providing a set of prospective recommendations for how to encourage ongoing alignment and synchronisation around FAIR, Open Science and EOSC, published in November 2021.

The Synchronisation Force workshop series was perceived as very useful, as can be seen in the outcomes of the the post event survey run after the third event:

### **What was the main value of the 2021 Synchronisation Force workshop for you?**

*The opportunity to give our say and get an overview of what is going on*

*Unique summary of inputs from a lot of people on these subjects*

*A reality check for the European Commission regarding the implementation of the EOSC*

*Find collaborators for realising project objectives together*

<sup>84</sup> Coen, G., Mokrane, M., Pittonet, S., Hodson, S., & van Kessel-Hagesteijn, R. (2020). D5.3 Report on the First Synchronisation Force Workshop (1.0). FAIRsFAIR. <https://doi.org/10.5281/zenodo.5361052> ; Dillo, I., Grootveld, M., Hodson, S., & Pittonet Gaiarin, S. (2020). Second Report of the FAIRsFAIR Synchronisation Force (D5.5) (1.0). Zenodo. <https://doi.org/10.5281/zenodo.5361417> ; Grootveld, M., Hodson, S., Pittonet Gaiarin, S., Davidson, J., & Dillo, I. (2021). D5.6 Report 3 of the Synchronisation Force (V1.0\_DRAFT). Zenodo. <https://doi.org/10.5281/zenodo.5336658>

<sup>85</sup> <https://zenodo.org/record/5744786>





*“I find the mapping exercise conducted by the Synchronisation Force incredibly valuable. It helps to identify those areas where much progress is being made and gaps where more work is needed. I agree that the understanding of FAIR has greatly improved over recent years, we have made good progress on defining metrics, and lots is currently being done on defining interoperability frameworks to enable data exchange across communities, notably in the EOSC Future project which is bringing together the infrastructures and research clusters. Research*

*performing organisations are also increasingly active in this space, but there is still a lot of work to do to connect their support and services into the EOSC ecosystem.”*

**Interview with Sarah Jones, member of the EOSC Board of Directors, October 2021<sup>86</sup>.**

The outputs produced by the Synchronisation Force will impact future reports, projects and FAIR implementation, while the methodology adopted and the lessons learnt in the organisation of the series can be useful to boost continued knowledge-exchange and serve the future FAIR ecosystem well. For this reason, here is what was learned about the approach we took in the last two years:

- **The interactive approach turned out to be effective.** We didn’t give presentations, but worked our way through the 27 recommendations from the ‘Turning FAIR into Reality’ report (2018)<sup>87</sup>, together with the attendees. The active engagement of participants before and during the event was really high, and several attendees kept up with this during the six consecutive sessions that made up one workshop (both in 2020 and in 2021). This means this approach is feasible.
- **Virtual workshops** allow more people and initiatives to attend than face-to-face meetings. This leads to richer findings. On the downside it requires quite an effort from the organisers; the whole Synchronisation Force was involved in chairing sessions and taking notes.
- **Asking attendees to provide information about their projects’ deliverables in a joint spreadsheet<sup>88</sup> works well.** In advance of the workshop the Synchronisation Force published a spreadsheet that lists all TFIR recommendations. Per recommendation the participants were asked to provide information about their project’s deliverables and activities that address this recommendation: both “in place” and “planned” to be fleshed out during the live event. The Synchronisation Force didn’t pretend to judge the quality of the information provided by and about so many initiatives: we can’t read all deliverables, nor attend all trainings or apply all tools. Asking the project representatives to summarise the most important outcomes and reports facilitated the analysis and was a good way to survey any work relevant to FAIRSF AIR.

<sup>86</sup> <https://www.fairsfair.eu/articles-publications/fairsfair-interview-sarah-jones-eosc-engagement-manager-g%C3%A9ant-eosc-association>

<sup>87</sup> <https://op.europa.eu/en/publication-detail/-/publication/7769a148-f1f6-11e8-9982-01aa75ed71a1/language-en/format-PDF/source-80611283#:~:text=this%20report.,stakeholders%20in%20Europe%20and%20beyond>

<sup>88</sup> All materials used during the event are published on Zenodo <https://zenodo.org/record/5336658#.Ya8dE1PSJTY>

- By the same token and lacking globally accepted FAIR metrics, it is difficult to conclude from this kind of input how far we are on the journey towards FAIR. For this reason the workshop reports provide information about **FAIR-related activity, not about progress**. We think it is crucial to be transparent about this. The overview therefore is not exhaustive. We distinguish three levels of activity: *many activities, some activities, hardly any activities*. These levels are based on the collective judgement emerging from the workshops: they were discussed and ultimately approved with participants. The utility of this is to provide an **indication of where effort is currently being focussed and to identify areas where more effort may be needed**.
- **Visuals help a lot**. Workshop attendees appreciate the FAIRsFAIR image of FAIR-related initiatives in EOSC very much, as it helps them to get a much-needed overview of the landscape. The diamonds infographic was also effective in passing the message of the amount of work undertaken, while the graphical representation of the recommendations included in the White Paper as “orbits” of the work to be done by the nascent EOSC task forces.



Figure 28 Visual representation of the recommendations presented in the FAIRSFAR White Paper

## 11. Conclusions

The prime motivation of all the activities described in the document was the continued collaborative and synchronisation approach undertaken by the FAIRSF AIR project, which managed not to lose the focus on users and put them at the core of its entire programme.

The impact achieved by the FAIRSF AIR project in mobilising research communities, at the level of individuals as well as institutions, will stay as a legacy for the future activities in the framework of the European Open Science Cloud. The approach taken towards the target stakeholders, the channels exploited, the attention to the national dimension, the new and traditional instruments adopted and the lessons learnt will be passed to the new bodies and projects that will start in 2022, also thanks to this and the other reports delivered by the project. Among these bodies we count the *EOSC Task Force on Research Engagement and Adoption*, while we believe that the inputs presented can be of interest also to the task forces in the *Advisory Groups on Research Careers and Curricula*, namely the *TF on Data Stewardship Curricula and Career Paths*, the *TF on Research Careers, Recognition, and Credit* and the *TF on Upskilling Countries to Engage in EOSC*.

With respect to the outreach and impact achieved and described in this report, sustainability aspects are currently being discussed in particular for the following key outputs:

**FAIR Champions, HLAC, and the Synchronisation Force core team.** Advisory bodies are extremely valuable to ensure external views are brought in. Members also effectively act as ambassadors to their communities, sharing the outcomes with their networks at events, distributing materials to their contact lists and pointing to relevant use cases or people. The outputs produced by these groups will impact future reports, projects and FAIR implementation, continuation of knowledge on FAIR and their lessons learnt can serve future initiatives. It might be worth considering maintaining contacts with some of these groups beyond the end of the project.

**FAIRSF AIR Synchronisation efforts.** The FAIRSF AIR Synchronisation Force successfully mobilised a series of strategic actors in the INFRAEOSC framework, including the FAIR Task Force, the EOSC Policy Task Force, the ESFRI cluster projects and others. The approach used turned out to be very effective, involving the participants into target discussions around each of the TFIR recommendations. A White Paper was recently delivered and provides recommendations to the EOSC Partnership and the EOSC Association Task Forces in three areas related to the Strategic Research and Innovation Agenda (SRIA) of the EOSC: 1) FAIR by Design, 2) sustainability of the components: the federated data layer, and 3) a strategic and targeted approach to training. It will be shared with the EOSC Association, inviting any relevant group there to take action and continue the series of events.

**FAIRSF AIR Roadshows.** The series of events “FAIR National Roadshows” organised in 2021-2022 extended the current FAIRSF AIR network, introducing another platform to promote FAIRSF AIR recommendations, good practices, and assessment tools. The blueprint of the national online roadshow programme, and lessons learnt could also stimulate further national events after the end of its project to further roll-out similar events.

## Annex 1 Events organised by FAIRsFAIR

N	Date	Event	Location	Audience	Activity
1	2019-04-12	<a href="#">EOSC-hub Week 2019</a>	Czech Republic	Future service providers and users of EOSC	Joint workshop with EOSC-hub, OpenAIRE, RDA Europe
2	2019-04-24	<a href="#">Workshop Linking Open Science in Austria</a>	Austria	Researchers, open science facilitators, repository managers, policy makers, funders and librarians	Joint workshop with EOSC-hub, OpenAIRE, RDA Europe
3	2019-08-05	<a href="#">Data Steward School</a>	Italy	Data Stewards	Co-organised with CODATA and RDA
4	2019-09-15	<a href="#">Open Science FAIR</a>	Portugal	Policy makers, funders, researchers, research Infrastructures, repository managers, publishers, libraries, service providers.	5 workshops co-organised with OpenAIRE, FIT4RRI, EOSC-hub, RDA and EOSC Secretariat
4.1	Services to support FAIR Data – Formulating recommendations for EOSC workshop				
4.2	Fostering a FAIR research culture - what works? workshop				
4.3	Making EOSC Training more FAIR workshop				
4.4	Time to Professionalise Data Stewardship workshop				
4.5	How identifiers can help you in Open Science workshop				
5	2019-10-21	<a href="#">RDA plenary - Workshop Building the data landscape of the future: FAIR Semantics and FAIR Repositories</a>	Finland	EOSC and Research Data Communities: Researchers, RIs in EOSC cluster projects, ESFRI, research data experts, RDA	Co-located workshop
6	2019-10-23	<a href="#">Synchronisation Force internal meeting</a>	Finland	Governance bodies of FAIRsFAIR	
7	2019-10-30	<a href="#">Focus Group on Research data policies and the FAIR data principles</a>	Spain	Universities and academic leadership involved in research data policies	Focus Group
8	2019-11-19	<a href="#">Focus Group on Teaching (FAIR) data management and stewardship</a>	The Netherlands	Universities and academic leadership involved in research data policies	Focus Group

N	Date	Event	Location	Audience	Activity
9	2019-11-25	<a href="#">EOSC Symposium First FAIRsFAIR Synchronisation Workshop</a>	Hungary	EOSC Working Groups, FAIRsFAIR Synchronisation Force, FAIR Task Force from EOSC 5B projects	Co-located workshop
10	2019-11-26	<a href="#">EOSC Symposium 2019</a>	Hungary	EOSC community, Research & Academia, Business organisations, Research Infrastructures, policy makers, funding agencies, industry, HPC centers, SDOs, publishers, Data service providers.	5 sessions
10.1	Action towards FAIR in practice workshop				
10.2	FAIR Metrics - FAIR Data Assessment in European Digital Repositories: Requirements and Use Cases				
10.3	EOSC Skills and Training				
10.4	FAIR Services Certification				
10.5	Impact of Requirements of FAIR on Technical Architecture workshop				
11	2020-02-06	<a href="#">FAIRsFAIR 1st Certification Support Workshop for Data Repositories</a>	The Netherlands	Data Repositories	Workshop
12	2020-02-17	<a href="#">IDCC 2020 - Ten things you can do to support the FAIR data culture</a>	Ireland	Data Professionals	Co-located workshop
13	2020-02-27	<a href="#">EOSC Working Group Training &amp; Skills</a>	The Netherlands	Trainers, or training coordinators, within the EOSC projects and associated organisations.	Co-organised with OpenAIRE, EUDAT, EOSC Secretariat and EGI
14	2020-04-29	<a href="#">Minimum Metadata Schema for semantic artefacts</a>	Online	Experts on vocabulary services, semantic tools and interoperability	Webinar
15	2020-04-29	<a href="#">FAIRsFAIR Second Synchronisation Workshop</a>	Online	Working Groups of the EOSC Executive Board, the ESFRI clusters, the INFRAEOSC5 projects	Workshop
16	2020-05-06	<a href="#">Common metadata interfaces for repositories workshop</a>	Online	Experts on vocabulary services, semantic tools and interoperability	Webinar
17	2020-05-19	<a href="#">EOSC Hub Week - FAIR Certification of</a>	Online	EOSC projects /governance, semantic	1 session



N	Date	Event	Location	Audience	Activity
		<a href="#">Repositories and other Data Services</a>		tools and interoperability, national service providers, research infrastructures, scientific communities, repository managers, universities	
18	2020-05-20	<a href="#">Feedback and input on FAIR requirements for persistence and interoperability</a>	Online	Research support staff, repository staff, research infrastructure staff, researchers, policy makers	Webinar
19	2020-06-01	<a href="#">Open Repositories Conference - How Repositories can contribute their FAIR share</a>	Online	Repository managers, Research data librarians, Data stewards	Co-located workshop
20	2020-06-23	<a href="#">Liber Conference 2020</a>	Online	Library professionals	Co-located workshop
21	2020-08-31	<a href="#">2020 CODATA-RDA School of Research Data Science</a>	Online	Data Managers	Co-organised with CODATA and RDA
22	2020-10-08	<a href="#">FAIR Competences Framework for Academia Design Workshop</a>	Online	Experts on research data management skills in higher education	Workshop
23	2020-10-15	<a href="#">FAIRsFAIR FAIR Semantics workshop</a>	Online	Stakeholders in the semantic community	Workshop
24	2020-10-29	<a href="#">Training Resource Catalogue Interoperability Workshop</a>	Online	Data Interoperability Professionals	Workshop
25	2020-11-16	<a href="#">Manchester FAIRsFAIR-CODATA-RDA Data Steward Training Series</a>	Online	Data Stewards	Co-organised with CODATA and RDA
26	2020-11-19	<a href="#">Certification Support Workshop</a>	Online	Data Repositories	Workshop
27	2020-11-30	<a href="#">International FAIR Convergence Symposium 2020</a>	Online	Researchers, data experts, funders, and science policy makers	2 sessions

N	Date	Event	Location	Audience	Activity
<b>27.1</b>	Data Stewardship and FAIR Competences in Academic Curricula				
<b>27.2</b>	Making your repository more FAIR-enabling				
<b>28</b>	2020-12-07	<a href="#">Costa Rica FAIRsFAIR-CODATA-RDA Data Steward Training Series</a>	Online	Data Stewards	Co-organised with CODATA and RDA
<b>29</b>	2020-12-09	<a href="#">Prototype implementation of the FAIR-related features - a demonstration</a>	Online	Tester and developer repositories	Workshop
<b>30</b>	2021-01-21	<a href="#">Clearing some of the highest FAIR hurdles: PIDs, Metadata and Semantic Interoperability for Data Stewards and Service Providers</a>	Online	Data Stewards and Service Providers	Webinar
<b>31</b>	2021-02-19	<a href="#">FAIRness of Services: A Closer Look at the FAIRsFAIR Framework</a>	Online	Providers of data services	Workshop
<b>32</b>	2021-03-02	<a href="#">National Roadshow Netherlands</a>	Online	Data support staff, researchers and data policy makers	Co-organised with LCRDM and DANS
<b>33</b>	2021-03-16	<a href="#">National Roadshow Ireland</a>	Online	Research data support staff	Co-organised with NORF Working Group on FAIR data
<b>34</b>	2021-04-07	<a href="#">FAIRsFAIR 2021 Week</a>	Online	FAIR data community	
<b>35</b>	2021-04-21	<a href="#">The role of Repositories in enabling Persistent Identifier (PID) Graphs</a>	Online	Data Repositories	Webinar
<b>36</b>	2021-04-28	<a href="#">National policy and support actions for research data skills - impact and experiences</a>	Online	National platforms, projects and organisations in skills development and policy for RDM and FAIR data.	Workshop co-organised with OpenAIRE
<b>37</b>	2021-04-29	<a href="#">FAIRsFAIR Third Synchronisation Force Workshop</a>	Online	EOSC Ecosystem, ESFRI clusters, FAIR Task Force from INFRAEOSC-5 projects, EC project officers.	Workshop

N	Date	Event	Location	Audience	Activity
38	2021-05-03	<a href="#">2021 - CODATA-RDA School of Research Data Science – South Africa</a>	Online	Early-career African researchers (M-level to postdoc) and professionals with the foundational data science skills	Co-organised with CODATA and RDA
39	2021-05-06	<a href="#">CoreTrustSeal Assembly of Reviewer Workshop series</a>	Online	CoreTrustSeal Assembly of Reviewers	Workshop
40	2021-05-07	<a href="#">RDA4EOSC Webinar - Supporting the alignment of organisational research data management policies</a>	Online	Research Data Managers and Policy Makers	Webinar co-organised with RDA4EOSC
41	2021-05-17	<a href="#">Botswana FAIRsFAIR-CODATA-RDA Data Steward Training Series</a>	Online	Data Stewards	Co-organised with CODATA and RDA
42	2021-05-20	<a href="#">FAIR-enabling Services: Validating The Framework</a>	Online	Providers of data services	Workshop
43	2021-05-26	<a href="#">FAIR data competences in doctoral education programmes</a>	Online	High Education Institutes	Workshop co-organised with EUA Council for Doctoral Education
44	2021-06-01	<a href="#">Booksprint for FAIR Adoption Handbook for Universities</a>	Online	Experts selected from the <a href="#">Open Call FAIR experts</a>	Workshop
45	2021-06-02	<a href="#">National Roadshow Finland</a>	Online	Data support staff, researchers and data policy makers	Co-organised with CSC
46	2021-06-04	<a href="#">Common Minimum Metadata for Semantic Artefact</a>	Online	Semantic Artefacts Experts	Workshop
47	2021-06-07	<a href="#">FAIRsFAIR, EOSC-Pillar, EOSC-Synergy and Ghent University Instructor Training Workshop</a>	Online	Data Stewards	Co-organised with CODATA and RDA
48	2021-06-23	<a href="#">National Roadshow Spain</a>	Online	Research Data community members, data creators and librarians	Co-organised with URICI and CSIC

N	Date	Event	Location	Audience	Activity
49	2021-07-07	<a href="#">National Roadshow Romania</a>	Online	Data support staff, data stewards, researchers and data policy makers	Co-organised with UEFISCDI.
50	2021-07-12	<a href="#">FAIRsFAIR, EOOSC-Synergy and NORF Data Steward Instructor Training</a>	Online	Data Stewards	Co-organised with CODATA and RDA
51	2021-07-13	<a href="#">Using registries to improve the visibility of your repository service</a>	Online	Data Repositories	Webinar
52	2021-09-06	<a href="#">2021 CODATA-RDA School of Research Data Science</a>	Online	Researchers dealing with data	Co-organised with CODATA and RDA
53	2021-09-06	<a href="#">FAIRsFAIR-CODATA-RDA Data Steward Training Series Poland</a>	Online	Data Stewards	Co-organised with CODATA, RDA, Gdańsk University of Technology and MOST DANYCH
54	2021-09-15	<a href="#">Training the trainers: Data Management and FAIR data principles in university curricula</a>	Online	Teachers and trainers of research data management	Co-organised with EUA and the University of Amsterdam
55	2021-09-29	<a href="#">Assessing the FAIRness of data holdings: Using F-UJI to make your repository more FAIR-enabling</a>	Online	Data Repositories	Webinar
56	2021-10-04	<a href="#">Resilient FAIR solutions</a>	Online	Data Infrastructures	Workshop
57	2021-10-12	<a href="#">Practical implementation of FAIR-related content in university curricula and teaching</a>	Online	Teachers and trainers of research data management	Co-organised with EUA and the University of Göttingen
58	2021-10-13	<a href="#">Make your repository FAIR enabling</a>	Online	Developers from the selected developer repositories	Hackathon
59	2021-10-21	<a href="#">Metadata exchange issues - when standard meets reality. Lessons learned from B2FIND</a>	Online	Data Repositories	Webinar
60	2021-11-04	<a href="#">Certified Digital Preservation: Practical</a>	Online	Data Repositories	Webinar

N	Date	Event	Location	Audience	Activity
		<a href="#">tips for repositories on aligning with CoreTrustSeal in their Digital Preservation policies</a>			
61	2021-11-10	<a href="#">National Roadshow in Lithuania</a>	Online	Researchers, data support staff, data stewards, and data policy makers	Co-organised with KTU and OpenAIRE NOAD
62	2021-11-18	<a href="#">National Roadshow in Estonia</a>	Online	Researchers, data support staff, data stewards, and data policy makers	Co-organised with University of Tartu Library and DataCite Estonia Consortium
63	2021-11-26	<a href="#">National Roadshow Portugal</a>	Portugal	Repositories and data centers, information specialists, librarians, archivists and data curators, IT specialists and researchers	Co-organised with FCT and University Coimbra
64	2021-11-26	<a href="#">National Roadshow UK</a>	Online	Professionals in the open research space	Co-organised with EOSC Synergy, JISC and ORCC
65	2021-11-29	<a href="#">FAIRsFAIR &amp; EOSC Synergy Data Steward Instructor Training Workshops</a>	Online	Research data support roles in Higher Education or Research Institutions	Co-organised with EOSC Synergy
66	2022-01-25	<a href="#">FAIRsFAIR 2022 Final Event</a>	Online	Everyone interested in FAIRsFAIR legacy	Workshop

## Annex 2 FAIRsFAIR presence at third party events

N	Date	Event	Location	Audience	Activity
1	2019-04-12	<a href="#">EOSC-hub Week 2019</a>	Czech Republic	Future service providers and users of EOSC	Joint workshop
2	2019-09-03	<a href="#">iPRES 2019</a>	The Netherlands	Repository managers, preservation and curation experts	Presentation
3	2019-09-05	<a href="#">EOSC-Life 'FAIR Enough'</a>	Belgium	EOSC-Hub, EOSC-Life, FAIR4HEALTH, FAIRPlus, FAIRsFAIR and GoFAIR	Open discussions
4	2019-09-10	<a href="#">Building EOSC through the H2020 projects current status and future directions</a>	Belgium	EOSC-related projects funded by the DGs CNECT and RTD	Poster
5	2019-09-15	<a href="#">Open Science FAIR</a>	Portugal	Policy makers and funders, researchers, research Infrastructures and researchers, repository managers, publishers and content providers, libraries, service providers and innovators.	Workshops, co-organised Poster Exhibition stand
6	2019-09-25	<a href="#">EPOS Implementation Phase Project final event</a>	Spain	Scientists, representatives of international initiatives and Research Infrastructure	Roundtable
7	2019-11-26	<a href="#">EOSC Symposium 2019</a>	Hungary	EOSC Coalition of Doers, Research & Academic institutions and Communities, Business organisations, EOSC related projects, eInfrastructures and Research Infrastructures, policy makers, funding agencies, industry, HPC centers, SDOs, citizen scientists, publishers, data service providers.	Workshops
8	2020-01-23	<a href="#">Open Science Workshop</a>	Slovenia	Researchers	Presentation
9	2020-02-06	<a href="#">Open ENVRI community meeting</a>	Germany	Environmental Research Infrastructures	Presentation
10	2020-02-17	<a href="#">IDCC 2020</a>	Ireland	Organisations and institutions across all disciplines curating data	Workshop
11	2020-02-25	<a href="#">RDA Deutschland Tagung 2020</a>	Germany	Data Managers	Poster
12	2020-03-05	<a href="#">DINI/nestor workshop</a>	Germany	Repository managers	Presentation
13	2020-05-18	<a href="#">EOSC Hub Week</a>	Online	EOSC Community	Poster
14	2020-05-21	<a href="#">FAIR data maturity model WG workshop</a>	Online	Members RDA FAIR data maturity model	Presentation
15	2020-06-01	<a href="#">Open Repositories 2020</a>	South Africa	Repository community	Presentation



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16	2020-06-16	Webinar of the Portuguese librarian network	Online	Librarians	Presentation
17	2020-06-19	<a href="#">RDA Global Adoption week</a>	Online	Data Managers	Presentations
18	2020-06-20	<a href="#">2nd workshop das Bibliotecas do Ensino Superior - Novos Espaços e Estratégias para Aprendizagem, Fluência Digital e Experimentação</a>	Online	University Librarians	Presentation
19					
20	2020-06-25	Webinar of the Dutch funder ZonMw	Online	Data managers	Presentation
21	2020-06-29	<a href="#">European Astronomical Society Annual Meeting, EAS 2020</a>	Online	Astronomy data professionals	Presentation
22	2020-06-30	<a href="#">Thüringer FDM-Tage 2020</a>	Online	Data Management Researchers of all Thuringian universities and colleges	Presentation
23	2020-07-08	<a href="#">Symposium MaDICS</a>		Astronomy Data professionals	Presentation
24	2020-08-05	<a href="#">FREYA and EOSC: Persistent Identifiers in Research Disciplines Workshop</a>	Online	EOSC projects	Presentation
25	2020-08-07	<a href="#">FSCI online 2020</a>	Online	Data Managers	Panel
26	2020-08-24	<a href="#">University of Zurich Open Science Summer School</a>	Online	Doctoral students and postdocs of all Swiss universities, universities all academic disciplines	Presentation
27	2020-08-31	<a href="#">Geospatial Sensing 2020</a>	Online	Geospatial professionals	Paper
28	2020-09-03	6th EOSC FAIR Working Group meeting	online	Computing and engineering; libraries and archives; researchers	Presentation
29	2020-09-22	<a href="#">WeMissiPRES (aka iPRES 2020)</a>	Online	Computing and engineering; libraries and archives; researchers and their audiences	Presentation
30	2020-10-01	<a href="#">ExPaNDS FAIR workshops</a>	Online	Photon and neutron instrument scientists and other facility staff	Presentation
31	2020-10-06	<a href="#">Open Science strategic approaches and the importance of open research data</a>	Online	Romanian R&I community meets	Presentation
32	2020-10-06	<a href="#">2nd ESFRI RIs-EOSC Workshop "Research</a>	Online	ESFRI, ESFRI RIs and EOSC stakeholders	Panel

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		<a href="#">Infrastructures shaping EOSC</a>			
33	2020-10-21	<a href="#">German Astronomical Society virtual</a>	Online	Astronomers from computing	Presentation
34	2020-10-27	<a href="#">EOSC-Pillar Webinar: The role of policies for a sustainable EOSC</a>	Online	Funding bodies, universities, EOSC stakeholders	Presentation
35	2020-11-02	<a href="#">University of Strasbourg 'Open Access Week'</a>	Online	Science Professionals	Presentation
36	2020-11-18	<a href="#">The Dutch Data Prize: Together We Share</a>	Online	Data Professionals	Presentation
37	2020-11-19	<a href="#">Realising the European Open Science Cloud</a>	Online	Social science and humanities researchers, data experts, research funders, policy makers, research infrastructures, service providers, research libraries and archives, the EOSC Ecosystem and ESFRIs	Presentation Booth
38	2020-11-30	<a href="#">International FAIR Convergence Symposium 2020</a>	Online	Researchers, data experts, funders, and science policy makers	Poster
39	2020-12-01	AGU 2020	Online	Earth and space scientists, students	Papers
40	2020-12-08	<a href="#">EUA-FAIRsFAIR webinar: Building FAIR data policies and services within universities</a>	Online	HEI staff	Presentations
41	2021-01-12	<a href="#">Congreso de Bibliotecas Universitarias Y especializadas</a>	Online	Librarians and Information Professionals	Presentation
42	2021-01-18	DANS Open Science workshop for OpenAIRE National Open Access Desks	The Netherlands	Open science ambassadors	Presentation
43	2021-01-22	<a href="#">FAIR data management and research data in doctoral education</a>	Online	Researchers	Presentation
44	2021-01-27	<a href="#">Webinar An introduction to domain specific Data Management Plans</a>	Online	Data Manager	Presentation
45	2021-01-27	<a href="#">Science Europe: Working Group on Data Sharing and Supporting Infrastructures</a>	Online	Data Management	Presentations
45	2021-02-03	<a href="#">EOSC-Nordic FAIRification webinar</a>	Online	Data Repositories	Presentation

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46	2021-02-08	<a href="#">SSHOC DARIAH Train-the-trainer Bootcamp</a>	Online	Trainers, data supporters, librarians and data stewards in the humanities and social sciences	Presentation
47	2021-02-20	<a href="#">RDA Plenary ESFRI Clusters at RDA House of Commons</a>	Online	Research Data Community	Panel
48	2021-03-02	<a href="#">3rd EMMC International Workshop 2021</a>	Online	Industry, Academia, Policy Makers	Presentation
49	2021-03-18	<a href="#">FAIR forever? FAIRer for longer: Digital preservation and the European Open Science Cloud</a>	Online	Research Data Managers	Presentation
50	2021-03-22	<a href="#">STM Research Data webinar</a>	Online	Data Managers	Presentation
51	2021-04-14	<a href="#">IMDIS 2021</a>	Online	Ocean Data Managers	Presentation
52	2021-04-19	<a href="#">The ESFRI Clusters at RDA House of Commons</a>	Online	ESFRI cluster projects, RDA community and EOSC audience	Presentation
53	2021-04-19	<a href="#">IDCC 2021</a>	Online	Data Managers	Presentations
54	2021-04-19	<a href="#">EGU 2021</a>	Online	Geoscience scientists and researchers	Presentation
55	2021-04-20	<a href="#">RDA Plenary</a>	Online	Research Data Professionals	Presentations
56	2021-04-21	<a href="#">EUA Annual event</a>	Online	Universities	Booth
57	2021-04-29	<a href="#">EOSC-Nordic webinar FAIRification STEP 3</a>	Online	Data Repositories	Presentation
58	2021-05-06	<a href="#">Open Science e Research Data Management ITALIAN</a>	Online	Research Data Managers	Presentation
59	2021-05-10	<a href="#">SSHOC Open Science and Research Data Management Train-the-Trainer Bootcamp (IASSIST pre-conference workshop)</a>	Online	Research Data Managers	Panel
60	2021-05-27	<a href="#">NWO Life2021</a>	Online	Researchers	Presentation
61	2021-06-03	<a href="#">EOSC-Nordic WP4 workshop: From Self-Assessment to Certification with FAIR Results</a>	Online	Data Repositories	Presentation
62	2021-06-07	<a href="#">Open Repositories 2021</a>	Online	Data Repositories	Presentation
63	2021-06-15	<a href="#">EOSC Symposium 2021</a>	Online	EOSC and open science community	Presentations

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64	2021-09-20	<a href="#">Open Science FAIR</a>	Online	Open science communities and services	Workshops (some co-organised)
65	2021-09-30	<a href="#">ExPaNDS Symposium for Librarians and Data Managers</a>	Online	Photon and Neutron librarians and data managers	Presentation
67	2021-10-19	<a href="#">EGI Conference 2021</a>	Online	e-infrastructure	Paper
68	2021-10-19	<a href="#">iPRES 2021</a>	China (Beijing) and Online	Digital preservation community	Presentation
69	2021-10-20	<a href="#">The Road towards EOSC as seen from the national level</a>	Online	Romanian Open Science	Presentation
70	2021-10-27	<a href="#">IDW 2021 / SciDataCon</a>	Online	Data Science	Workshop
71	2021-10-28	<a href="#">Laserlab-Europe and ELI Research Data Management Workshop</a>	Online	Laser-based inter-disciplinary researchers	Presentation
72	2021-10-28	<a href="#">Ethics and Explainability for Responsible Data Science (EE-RDS)</a>	Online	Data scientists	Presentations
73	2021-11-03	<a href="#">RDA 18th Plenary Meeting - Virtual</a>	Online	Research Data Professionals	Presentation Posters
74	2021-11-04	<a href="#">Webinar on "User Experience with FAIR evaluation tools and services, for example the 'FAIR Evaluation Services'"</a>	Online	Data Management Services Providers	Presentation
75	2021-11-05	<a href="#">Data You Document is the Data We Love</a>	Online	Researchers	Presentation
76	2021-11-17	<a href="#">Research Data Stewardship in UCC workshop</a>	Online	Support Staff	Presentation