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| Project Title | Fostering FAIR Data Practices in Europe |
| Project Acronym | FAIRsFAIR |
| Grant Agreement No | 831558 |
| Topic | Project summary |
| Start Date of Project | 1 March 2019 |
| Duration of Project | 36 month |

**Project Summary *FAIRsFAIR - Fostering FAIR Data Practices in Europe***

FAIRsFAIR's ambition is to assist the European Open Science Cloud (EOSC) governance bodies to deliver FAIR-aligned Rules of Participation in the EOSC. These rules will be designed to establish FAIR compliance of components and practices. Moreover, FAIRsFAIR will open up and share all knowledge, expertise, guidelines, implementations, new trajectories, courses and education needed to turn FAIR Principles into reality. The project will thus contribute to a culture change necessary to achieve wide adoption of FAIR practices within the EOSC and beyond.

The project is a response to the European Commission's call INFRAEOSC-05-c, which sought project proposals on FAIR data uptake and compliance in support of the European Open Science Cloud (EOSC) Governance.

FAIRsFAIR Overall Aim

- FAIRsFAIR addresses the development and concrete realisation of an overall knowledge infrastructure on academic quality data management, procedures, standards, metrics and related matters based on the FAIR data principles;
- FAIRsFAIR needs to deliver essential Rules of Participation (RoP) and regulatory compliance for participation in the EOSC;
- The emerging EOSC governance structure will use these RoPs to establish whether components of the infrastructure function in a FAIR manner;
- FAIRsFAIR will implement recommendations from the EOSC HLEG and the Expert Group on FAIR Data.

FAIRsFAIR in a nutshell

Budget: 10 million
Time plan: 36 months
Starting date: March 1 2019
22 partners from 8 MS
6 core partners: DANS (project coordinator), CSC, DCC, TrustIT, STFC, EUA

## The EOSC and FAIR

The EOSC is envisaged as a research data commons, including all disciplines and Member States, associated countries and global initiatives. It is to be sustainable in the long-term, based on sound and transparent data stewardship, in which re-use of scientific outputs is the default, accelerating discovery in science and scholarship. It will do so by providing proper infrastructures and integration. In the words of Commissioner Moedas: "It will allow a new generation of scholars to share and communicate data and discoveries in a way that has never been done before". This sharing and communicating requires a common language as vehicle and carrier, and the "language" is named "FAIR".

Over the past decade or so, infrastructure has become the indispensable backbone of science. In the 7th and 8th Framework programmes of the EC, but also in national roadmaps for research and other funding schemes, a plethora of infrastructure components has been created. Now the time has come to fit these components into an overarching commons, which the EOSC aims to provide. This will not be an easy process, as many of the components were never designed to work together with the others. It can be compared to a jigsaw puzzle in which the pieces of different puzzles ended up in one box. Some pieces are double or overlapping, others are lacking. Yet, the rules of the game have to be clear to everyone in order for the puzzle to be completed, and for the EOSC to function as a solid and reliable engine room in the realm of research data.

We are in the fortunate situation that a few years ago a limited set of very clear principles were formulated that won the hearts and minds of many stakeholders in the infrastructure arena, and that also got wide acceptance by research funders, other policy makers and research communities: the FAIR data principles3. The principles essentially say that research outputs, in particular data, should be Findable, Accessible, Interoperable and Reusable. There is an overwhelming and general support for the basic idea of FAIR data (and other research resources, including software and data services) and some work already in progress on how to accomplish and operationalize FAIR.

The purpose of FAIRsFAIR is to do this at scale and show implementation, supporting the EOSC Governance by the FAIR data uptake and compliance in all scientific communities.

FAIRsFAIR is to deliver those Rules of Participation and regulatory compliance for participation in the EOSC that relate to FAIR. They will be used by the emerging governance bodies to establish compliance of the components of the system.

In its actions the FAIRsFAIR project does not have any discipline-specific preferences. Rather it adopts the concept of a discipline-agnostic basis for all scientific domains and adds discipline-specificity where required. The essence is furthermore to re-use rather than to re-invent.

<u>Trust and sustainability</u>

Key to the success of FAIR and of the project will be **trust** and **sustainability**. Researchers must be able to trust the parties on which they increasingly depend for high-quality services, where they create, share, store, retrieve and/or (re)use their data and other research outputs, during and after their projects. This trust often needs to span substantial periods of time. Trustworthy repositories must be able to guarantee the persistence of their data after ten or more years and, and need to protect the data entrusted to them against intrusion or corruption. Not only the rights of the researchers need to be clear, also the privacy of research subjects needs to be guaranteed. The authenticity, reliability and quality of data must be made apparent to potential re-users in order to get maximum benefit from a data sharing economy.

Sustainable access to research resources implies sustainable software and other environments crucial to the meaning of data, and it implies scalability of procedures, processes and costs to keep and share.

<u>FAIRsFAIR Work Plan</u>

**WP1 Project Management and sustainability (DANS)**
The overall objective of the Management work package is good project governance, achieved through effective and efficient collaboration between the partners and financial, quality, risk and innovation management.

**WP2 FAIR Practices: Semantics, Interoperability, and Services (CSC)**
The overall aim of this WP is to apply, refine and align the interoperability of FAIR research resources and repositories, and to provide expertise on the application of the FAIR concept to data services. In more specific terms the WP aims to:

- Create the bases for continued work on sustainable technical implementation of the FAIR principles on a broad level and improve the understanding of the current variety in FAIR data standards;
- Improve the semantic interoperability of research resources by specifying FAIR metadata schemas, vocabularies, protocols, and ontologies;
- Provide solutions for interoperability requirements and machine accessibility for FAIR repositories;
- Define the extent to which the FAIR concept can be applied to data services (including software).

**WP3 FAIR Data Policy and Practice (DCC)**
This WP aims to:

- Increase the production and use of FAIR data by and for a wide range of stakeholders, public and private, in a broad range of research disciplines;
- Demonstrate how policy and practice by funders, researchers and data stewardship organisations can achieve increased production and use of FAIR data;
- Guide necessary change in policy and practice at funder, repository and organisational levels to achieve increased production and use of FAIR data.

**WP4 Certification (DANS)**

The main objective of WP4 is to develop a sustainable certification mechanism for trusted repositories of FAIR digital research data in the EOSC, and all relevant supporting activities (e.g. organizational support, training, guidance and capacity building). In line with the FAIR Data Action Plan it will augment existing schemes, not create new ones.

The objectives of this WP are to:

- develop a capability maturity model towards FAIR certification
- build a network of Trusted Digital Repositories
- provide support and guidance for digital repositories aspiring FAIR repository certification and for reviewers of certification applications
- provide the stakeholders with a registry of FAIR compliant repositories
- define the scope of core level FAIR certification, and through pilots define more rigorous
- requirements to support the assessment of data and data repositories as FAIR.

**WP5 Engagement, communication and uptake (TrustIT)**

Objectives

- Ensure a coordinated and continued communication of the FAIRSFAIR initiative, providing
- appropriate visibility to all stakeholders;
- Deliver and maintain an actionable communication plan
- Map the portfolio of the project's dissemination results and its subsequent assets against the particular target stakeholder group;
- Organise and roll-out focused workshops
- Develop and track an effective uptake strategy to facilitate adoption
- Ensure synchronisation with other initiatives, projects and EOSC governance

**WP6 FAIR Competence Centre (STFC)**

By working with a broad range of communities, this work package will bring together best practice from a range of domains to provide a virtual competence centre that will become a focal point of reference concerning FAIR data for all communities, providing a place to go for advice, training and services. It will provide expertise for practical solutions and have capacity to deal with requests from the community. In the context of FAIRsFAIR, the domain competences will interlock so as to maximise synergies and efficient use of resources; a central core with community-specific "knowledge bases" will be the basis. It will be open to all thematic areas but especially those not supported by other initiatives. Within this framework, the objectives of the work package are to:

- Support a range of communities in their activities aimed at FAIR data uptake and compliance;
- Promote harmonisation and coordination of efforts across communities, identifying opportunities for synergies and building on the progress of others
- Feedback from communities into other parts of the FAIRsFAIR project and the EOSC more generally.

**WP7 FAIR Data Science and Professionalisation (EUA)**

This WP aims to:

- Map the integration of FAIR data principles in data science and other disciplines' curricula at universities 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 in data science and other relevant disciplines
- Translate the competence framework into model curricula and university courses for different disciplines (e.g. data science) and professional profiles (e.g. data stewards)
- Support embedding FAIR data education in university programmes and doctoral training through a series of workshops and knowledge-sharing activities.
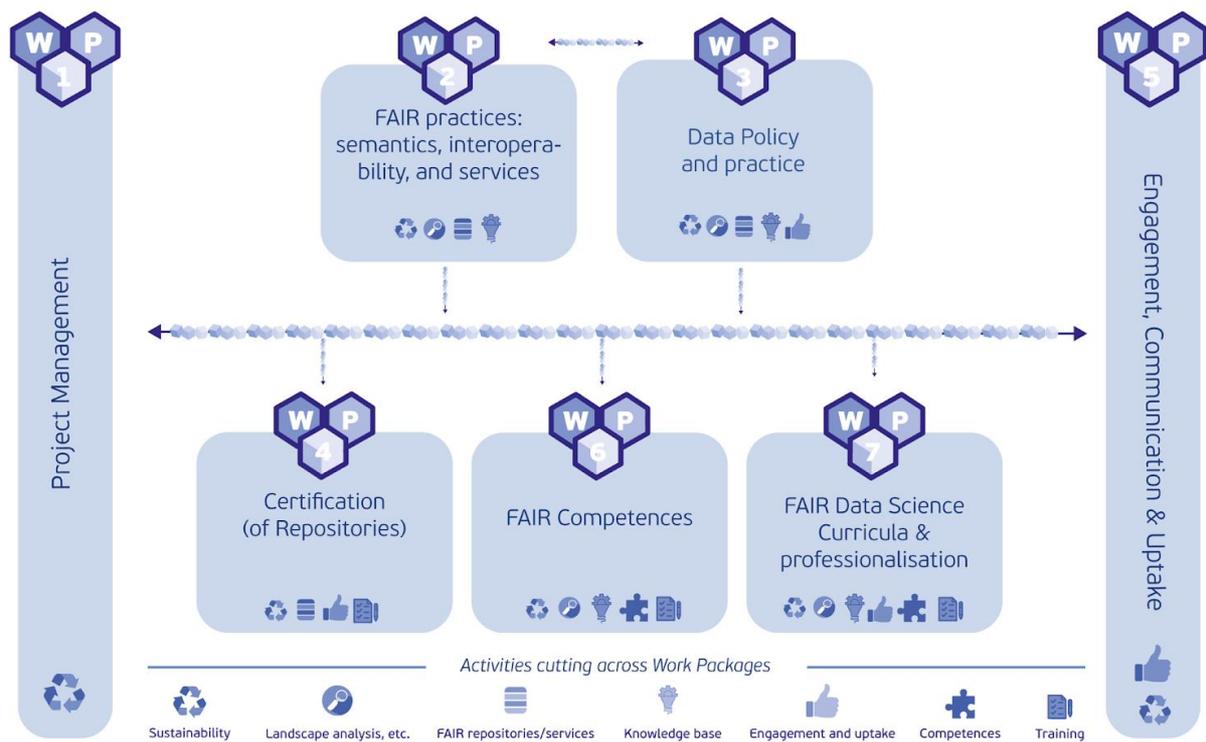
## List of partners

| Partner | Country |
|---|---|
| KONINKLIJKE NEDERLANDSE AKADEMIE VAN WETENSCHAPPEN (DANS) | NL |
| CSC-TIETEEN TIETOTEKNIIKAN KESKUS OY | FI |
| THE UNIVERSITY OF EDINBURGH (DCC) | UK |
| ASSOCIATION EUROPÉENNE DE L'UNIVERSITÉ (EUA) | BE |
| UNITED KINGDOM RESEARCH AND INNOVATION (STFC) | UK |
| TRUST-IT SRL | IT |
| COMITE DES DONNÉES SCIENTIFIQUES ET TECHNOLOGIQUES | FR |
| DATACITE - INTERNATIONAL DATA CITATION INITIATIVE | DE |
| STICHTING DTL PROJECTS | NL |
| E-SCIENCE DATA FACTORY | FR |
| UNIVERSITEIT VAN AMSTERDAM | NL |
| UNIVERSITÄT BREMEN | DE |
| STICHTING SPARC EUROPE | NL |
| SURFSARA BV | NL |
| GEORG-AUGUST-UNIVERSITÄT GÖTTINGEN STIFTUNG ÖFFENTLICHEN RECHTS | DE |
| UNIVERSITY OF ESSEX (UKDA) | UK |
| UNIVERSIDAD CARLOS III DE MADRID | ES |
| UNIVERSIDADE DO MINHO | PT |
| HELSINGIN YLIOPISTO | FI |
| RESEARCH DATA ALLIANCE FOUNDATION | UK |
| INSTITUTE NATIONAL DE RECHERCHE EN INFORMATIQUE ET AUTOMATIQUE | FR |
| CENTRE INFORMATIQUE NATIONAL DE L'ENSEIGNEMENT SUPÉRIEUR | FR |