Reading list: Skills, Training, Rewards, Recognition & Upscaling

It is recommended that documents or websites marked with an * are read or viewed by participants before the meeting.

EOSC Association

The EOSC Association is the legal entity established to govern the European Open Science Cloud (EOSC). It was formed on 29th July 2020 with four founding members and has since grown to more than 250 Members and Observers. The Association membership is jointly responsible for delivering the objectives agreed in the Memorandum of Understanding signed by the European Union and EOSC Association to form the official Partnership.
Webpage: https://eosc.eu

Strategic Research and Innovation Agenda(SRIA) of the European Open Science Cloud (EOSC) - Version 1.2 *

The overall purpose of the EOSC Strategic Research and Innovation Agenda, or SRIA, is to define the general framework for future research, development and innovation activities in relation to the European Open Science Cloud. The current version of the SRIA (1.2), including MAR 2025-2027, was approved by the EOSC Partnership Board at their 5th meeting on 06 December 2023.
Link: https://eosc.eu/wp-content/uploads/2023/12/20231114_SRIA_1.2_final2.pdf

EOSC Task Forces

The EOSC Task Forces address key areas in the implementation of the European Open Science Cloud (EOSC), providing feedback on developments, identifying strategic gaps, and suggesting areas for investment.
Webpage: https://eosc.eu/eosc-task-forces/

List of EOSC-related Projects (Horizon Europe Projects)

This list includes European projects that support the implementation and development of the EOSC.
Link: https://eosc.eu/horizon-europe-projects/

Task Force: Upskilling Countries to Engage in EOSC

The Upskilling countries to engage in EOSC Task Force is mainly focused on developments in Open Science education being addressed at Member State level within research performing organizations. The task force will assist in aligning skills initiatives and supporting the onboarding of these into EOSC. Without education in Open Science skills, it would be harder for researchers to live up to the necessary transformation of their working life.
Webpage: https://eosc.eu/advisory-groups/upskilling-countries-engage-eosc

Task Force: Researcher Engagement & Adoption Task Force (REA TF)

The Researcher Engagement & Adoption Task Force (REA TF) is focused on engaging diverse research communities in order to increase their participation in EOSC.

The engagement work should be conducted along and between disciplinary lines, utilising the achievements of the ESFRIs and thematic services, as well as on a country basis via engaging national initiatives, research performing organisations and scientific institutions, and by collaborating with representative bodies. This Task Force explores an aspect that is not part of the current SRIA version and will provide concrete plans to facilitate the onboarding of researchers in the EOSC ecosystem.

Webpage: https://eosc.eu/advisory-groups/researcher-engagement-adoption

Task Force: Researcher Engagement & Adoption Task Force (REA TF)

The Task Force Data stewardship, curriculum and career paths will focus on the Data Stewards role and their core activities.

To help researchers to make FAIR data it is necessary to have professional staff. To keep professional staff, we need to have a common curriculum for their skills and possibilities for career paths.

The Data stewardship, curricula and career paths Task Force focuses on the Data Stewards role and their core activities. The TF is engaging with all stakeholders, including for example the RDA Group on Professionalizing Data Stewardship and EUA, but also with other EOSC-A Task forces. We aim to build on the extensive work done by all stakeholders, including the recommendations from the Digital Skills for FAIR and Open Science report of the EOSC Working Group Skills & Training. The TF will consolidate current insights, recommendations and implementation examples and make them available for all stakeholders. The two main work streams in the TF are focussing on the minimal curriculum and on the career paths for data stewards. Since the TF is rather small, we welcome new members. Please contact us if you are interested in working with us.

Webpage: https://eosc.eu/advisory-groups/data-stewardship-curricula-and-career-paths

Skills4EOSC (project)

The Skills4EOSC project will work to provide Open Science Commons and create an EOSC-ready skilled European workforce, connecting existing Competence Centres in open science and scientific data management. The aim is to develop common methodologies, activities and training resources to unify the current training landscape into a collaborative and reliable ecosystem and to provide dedicated community-specific support to leverage the potential of EOSC for open and data-intensive research.

Webpage: https://www.skills4eosc.eu/

Skills4EOSC Competence Centre Charter *

This document present the first draft of the Skills4EOSC Competence Centre Charter

Link: https://zenodo.org/records/10048176

Methodology FAIR-by-Design Training materials *

This document describes a methodology for FAIR-by-design production of learning materials based on the backward instructional process that is extended with additional activities focusing on the implementation of the FAIR guiding principles. A general discussion on important aspects of implementation such as granularity, scope, metadata schema, interoperability and publication in relevant repositories is provided together with a step by

step six stage workflow and checklists that help implement the FAIR-by-design process. The outlined methodology will be used as a blueprint for a train-the-trainer course aiming to present the practical FAIR-by-design instructional design.
Link: https://zenodo.org/records/8305540

Catalogue of Open Science Career Profiles - Minimum Viable Skillsets *

This deliverable reports initial steps towards a catalogue of Minimum Viable Skillset (MVS) Profiles. These describe key skills and competences for roles that enable researchers, professionals, and stakeholders to practice Open Science (OS) with the support of the European Open Science Cloud (EOSC). MVS Profiles draw on available skills resources, including competence frameworks, and are proposed as an aid to developing skills through curricula and course design. Each MVS Profile relates the essential skills to the Open Science (OS) practices, activities, and outcomes that may typically be expected of the role concerned.
Link: https://zenodo.org/records/8101903

EOSC4Cancer (project)

EOSC4Cancer will make diverse types of cancer data accessible: genomics, imaging, medical, clinical, environmental and socio-economic. It will use and enhance federated and interoperable systems for securely identifying, sharing, processing and reusing FAIR data across borders and offer them via community-driven analysis environments.
Webpage: https://eosc4cancer.eu/#

A guidance document for the EOSC4Cancer learning pathway *

The EOSC4Cancer initiative addresses the pressing need for advanced research and infrastructure in tackling cancer, particularly in Europe. This document focuses on the WP5 initiative within EOSC4Cancer, which aims to empower clinicians and cancer researchers through capacity building. Emphasizing the importance of tailored training, the document outlines the design process for learning paths, including short-term courses and traditional postgraduate options. Key concepts such as learning outcomes and FAIR training are introduced, and the systematic mapping of skills and roles within the target audience is detailed. Illustrative examples from both within and beyond the project demonstrate the application of these principles. The document concludes with a list of practical tools and services for constructing effective learning paths. Importantly, this document is a living resource, reflecting ongoing efforts and intended to contribute to a dynamic learning environment beyond the EOSC4Cancer project, benefiting the broader scientific community.
Link: https://zenodo.org/records/10200523

EuroScienceGateway (project)

EuroScienceGateway will leverage a distributed computing network across 13 European countries, accessible via 6 national, user-friendly web portals, facilitating access to compute and storage infrastructures across Europe as well as to data, tools, workflows and services that can be customized to suit researchers' needs. At the heart of the proposal workflows will integrate with the EOSC-Core. Adoption, development and implementation of technologies to interoperate across services, will allow researchers to produce high-quality FAIR data, available to all in EOSC. Communities across disciplines — Life Sciences, Climate and

Biodiversity, Astrophysics, Materials science — will demonstrate the bridge from EOSC's technical services to scientific analysis.

Project Webpage: https://galaxyproject.org/projects/esg/

The European Galaxy Server

Galaxy is an **open-source** platform that allows researchers to analyze and share scientific data using **interoperable** APIs and various user-friendly web-based interfaces. The Galaxy project was launched in 2005 and has since become a powerful framework for researchers across a wide range of research fields, including *omics, biodiversity, machine learning, cheminformatics, NLP, material science, climate research.

Link: https://usegalaxy.eu

GTN (Galaxy Training Network) *

The Galaxy Training Network provides researchers, developers and admins with online training materials, connects them with local trainers, and helps promote FAIR and Open Science practices worldwide. The GTN provides over 380 tutorials together with example data sets and videos from 30 different scientific areas for end users. The GTN on its own is a sophisticated **training platform (https://doi.org/10.1371/journal.pcbi.1010752)** that assists trainers (train-the-trainer tutorials), adds supportive tools like automatic video creation from slides, persistent training identifiers, rich machine readable metadata annotations for training materials, and much more.

Link: https://training.galaxyproject.org

Training Infrastructure as a Service (TIaaS) *

The European Galaxy Server provides Training Infrastructure as a Service (TIaaS) for the Galaxy training community. You provide the training, we provide the infrastructure at no cost. By registration of your training event to our TIaaS:

- You get a private queue where only your training's jobs will run.
- You have no Galaxy maintenance.
- You have no Galaxy administration.
- You can use our free infrastructure.
- Our official Galaxy Training Materials are guaranteed to work and regularly tested.
- See how your students are progressing with our dashboard.

Link: https://usegalaxy.eu/tiaas

Background reading material

A list of materials not produced by the programme committee parties but of importance to the EOSC Winter School track Skills, Training, Rewards, Recognition & Upscaling.

Digital skills for FAIR and Open Science: Report from the EOSC Executive Board Skills and Training Working Group *

Digital skills for FAIR and open science are a cornerstone of the European Open Science Cloud (EOSC)'s operations and future. The EOSC Skills and Training Working Group (WG) was formed in 2020 to identify a framework for building competence and capabilities for EOSC. The WG focused on four priority areas that form the major sections of this report.

Link:

https://op.europa.eu/en/publication-detail/-/publication/af7f7807-6ce1-11eb-aeb5-01aa75ed71a1

EOSC Future *

Project finishing in 2024 and important for the EOSC ecosystem.

EOSC Future is the project building the baseline components to achieve EOSC's vision of a fully operational web of data and related services found on FAIR protocols, principles and standards for accessing interoperable datasets. This includes developing **EOSC core**, **EOSC exchange** and the **EOSC interoperability framework**. EOSC Future services are currently in the process of being handed over the consortia awarded the procurement lots for "Managed Services for the European Open Science Cloud (**Link:**

https://eosc.eu/news/2023/11/european-commission-announces-results-of-the-eosc-procurement/)". As such, alignment of any training activities across EOSC should consider EOSC Future outputs.

The specific objectives of the training work package aims are:

- Train stakeholders to become active users and providers of EOSC and increase uptake of resources, and Open Science.
- Support providers to add their resources in the EOSC Portal and work with the INFRAEOSC-07 projects and Science Clusters to support users.
- Consolidate the emerging cross-discipline trainer community (including the INFRAEOSC-07 projects) to avoid duplication of effort, focusing on key components of interoperability, service offering, and data provision.
- Build and operate a learning management system and training catalogue as integral parts of the EOSC Portal to sustain the EOSC Knowledge Hub.

Further detail on activities: https://wiki.eoscfuture.eu/display/PUBLIC/Training+and+Skills
The EOSC Knowledge Hub: https://knowledge-hub.eosc-portal.eu/