Supporting EOSC: Putting Institutions in the Driving Seat

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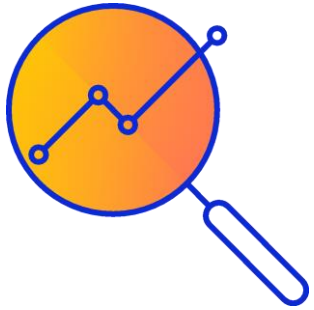
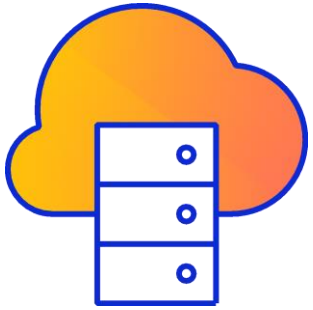
The EOSC Future project is co-funded by the European Union Horizon Programme call INFRAEOSC-03-2020, Grant Agreement 101017536

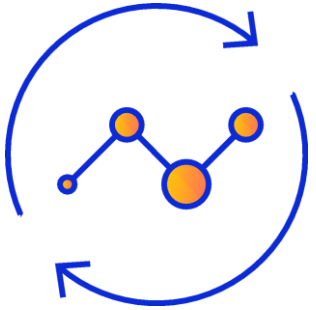
EOSC Future will provide a user-friendly environment for:



Data discovery

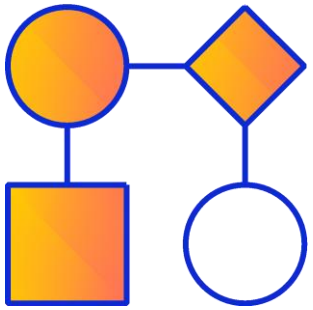


Data storage

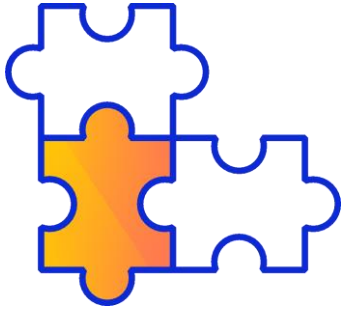


Data recomposition

Computing services



Complex workflows



Integratable services

Ambitions

EOSC Future will work with key stakeholders to develop:

1. **EOSC-Core** – the set of enabling services needed to operate the EOSC
2. **EOSC-Exchange** – registering resources and services from research infrastructures, other EOSC projects and Science Clusters
3. **EOSC Interoperability Framework** – which will provide guidelines for providers that want to integrate services or data into EOSC

We'll also provide support and training to make sure users can make the most of the EOSC platform.

EOSC SUPPORT ACTIVITIES

Training, engagement, and human-centric activities that help users benefit from EOSC.

COMMUNITY X — THEMATIC RESOURCE

REGIONAL Y — THEMATIC RESOURCE

CLUSTER Z — THEMATIC RESOURCE

... — THEMATIC RESOURCE

EOSC EXCHANGE

Federation resources provided by Research Infrastructures and Science Clusters.

EXECUTION FRAMEWORK

HORIZONTAL SERVICES

EOSC CORE

Enabling services that operate EOSC. Core technical platform.

CORE COORDINATION FUCTIONS

CORE TECHNICAL PLATFORM

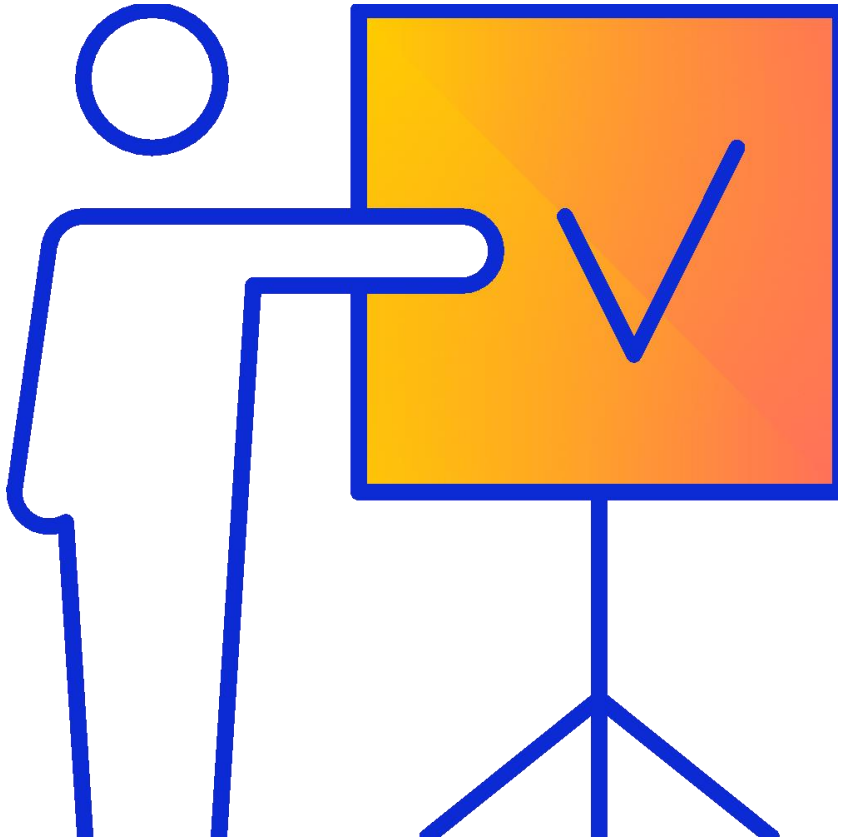
EOSC INTEROPERABILITY FRAMEWORK

A flexible framework of standards to enable exchange and use of information and tailored assembly of resources.

Main Goals

1. Delivering and operating the EOSC-Core
2. Expanding EOSC-Exchange
3. Scaling up capabilities to deliver an EOSC Execution Framework
4. Increasing European scientific impact
5. Promote the participation of the commercial sector in EOSC
6. Support and train users and providers
7. Engage with the EOSC communities and end users
8. Align with the strategic vision for EOSC

Skills and Training



To train both users and providers to make the most of the EOSC environment, the project will establish an EOSC Knowledge Hub. The Hub will build a network of expert trainers, and catalogue existing support materials while developing new training courses and documents.

https://wiki.eoscfuture.eu/display/PUBLIC/Training+and+Skills

What do institutions want out of EOSC and how EOSC Future will address this

Sarah Jones (GÉANT/EOSC Future)

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Who knows?

What are institutions providing?

- Training
- Research tools e.g. lab notebooks, data analysis, storage
- Human support - data stewards, ethics & legal advisors
- Repositories / CRIS for outputs management
- …

What might they want based on this?

TRAINING SUPPORT (1)

EOSC training materials

- What is EOSC
- How to use portal
- Finding data
- Composing services
- Demos / video tutorials
- Infographics and flyers
- ….

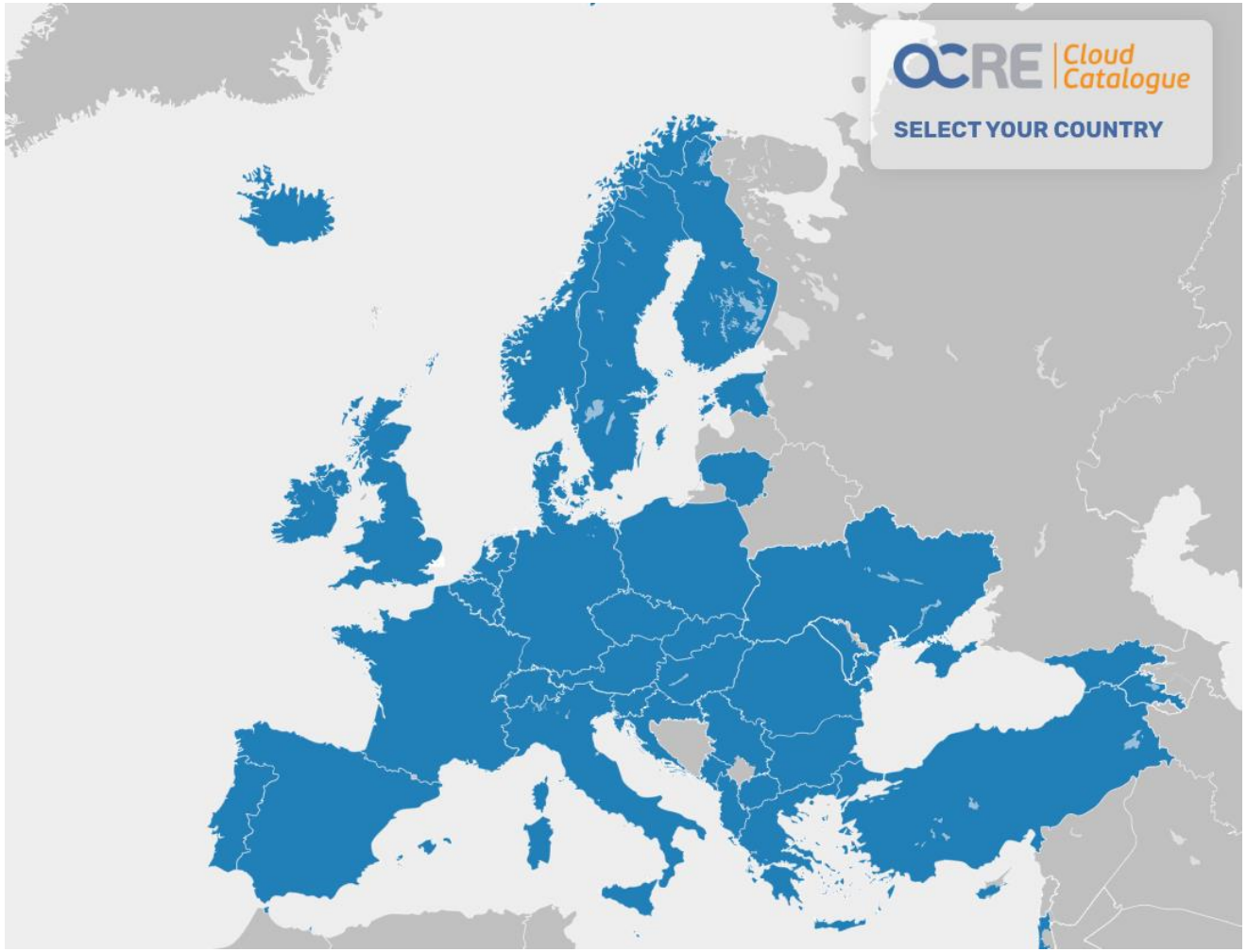
EOSC Knowledge Hub

- Training platform
- Catalogue of resources

Training platform is a VLE to run EOSC courses

Catalogue indexes EOSC / Open Science training from many places

Access to tools - https://marketplace.eosc-portal.eu



- Wide range of tools and services on EOSC portal, including
  - Lab notebooks
  - Workflow tools
  - Repositories…
- Storage and compute allocations via projects such as RELIANCE, DICE and EGI-ACE
- Cloud services via OCRE
- Common AAI / single-sign-on etc

Access to free storage, compute and support services

C-SCALE will federate compute and data resources from the Copernicus DIAS, the national Collaborative Ground Segments and the European Open Science Cloud (EOSC) towards a European open source Big (Copernicus) Data Analytics platform:

- Storage services: up to 12 PB

- Cloud services: up to 17,728,500 CPU hours

- HPC/HTC services: up to 3,100,000 CPU hours

- GPU services: up to 6,000 GPU hours

Provides three core services for Research Lifecycle Management:

- ROHub: tool to facilitate the exchange of information across the scientific community.

- Text Enrichment and Mining: service which automatically extracts valuable information and metadata from bibliographic sources and other text documents

- Datacube technology for Earth Observation (EO) data management: efficient access to extensive collections of multi-temporal and multi-dimensional EO imagery, also allowing interoperability among the different information layers.

DICE makes available a set of data management services (and associated resources) for researchers and research communities from any scientific domain including:

- Data archives (up to 25 PB)

- Policies based data archives (up to 17 PB)

- Personal and project workspaces (up to 5 PB)

- Data repository services for data sharing (up to 8 PB)

- Data discovery services (with PID and DOI services and metadata harvesting)

EGI-ACE will deliver the EOSC Compute Platform and will contribute to the EOSC Data Commons. Services offered include: compute and storage resources, compute platform services, data management services and related user support and training.

The total **capacity** that EGI-ACE makes available through the call between 2021-2023 is:

- 80,000,000 CPU hours

- 250,000 GPU hours

- 20 PB storage

support to Argos DMP service by drafting discipline specific DMPs, Horizon Europe DMP support

set your own community research gateway (connect.openaire.eu) and Zenodo communities

access open science metrics for your projects, institution, community

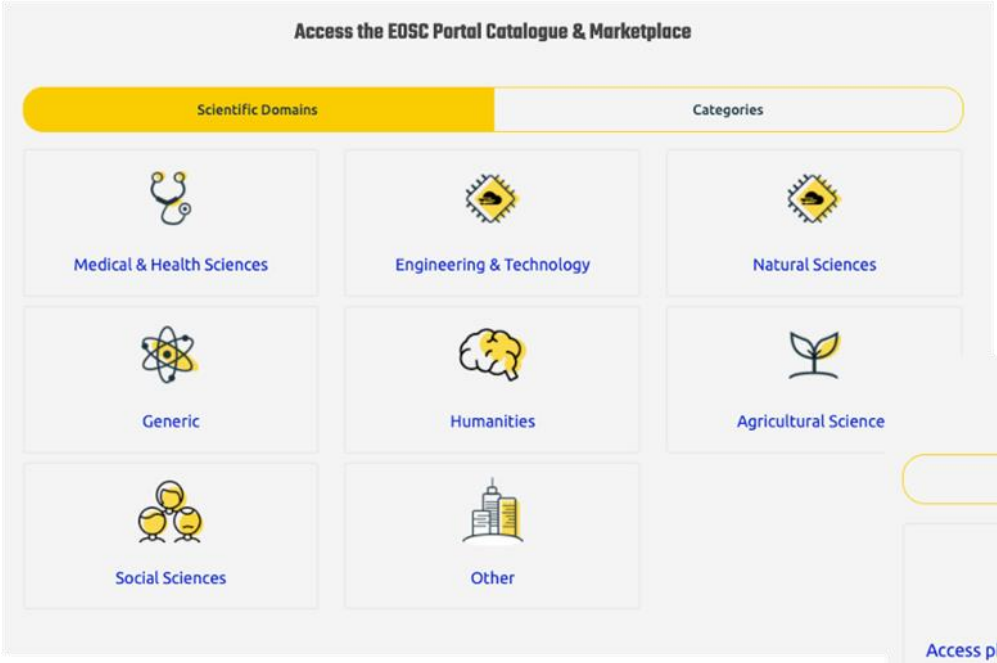
service to anonymise your data and comply with GDPR

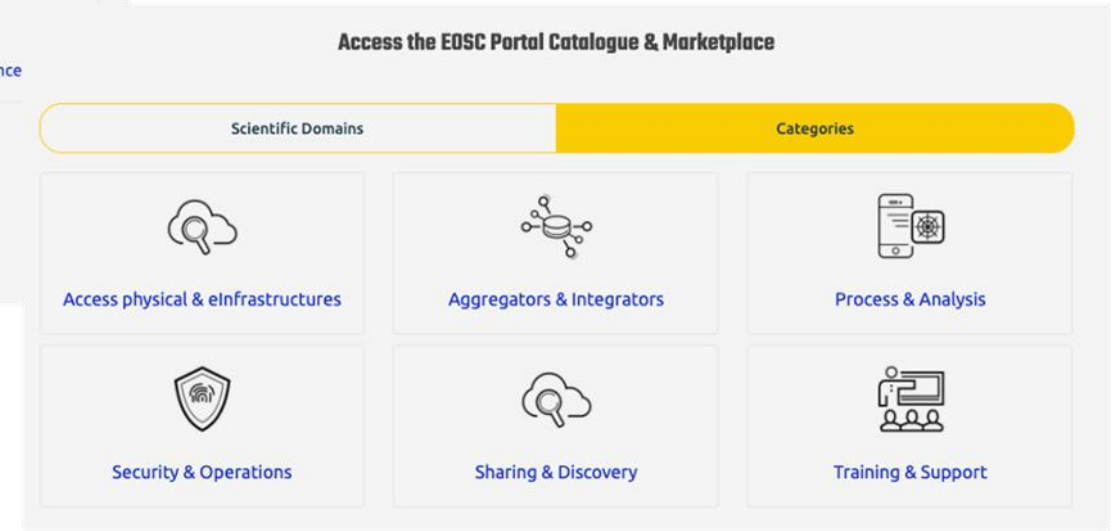
support and mentoring on Horizon Europe open access mandates

https://marketplace.eosc-portal.eu

Better discovery of data from elsewhere

Search by scientific domains or categories of services





Ability to profile their own resources / gain impact?

- Add your repository to EOSC
- Expose your datasets to the cross-search
- Be involved in training / data stewardship
- Contribute to Working Groups / Task Forces to set agenda
- Be a beneficiary in EOSC projects
- …

Access to funding?

EOSC FUTURE RDA DOMAIN AMBASSADORS

Number of grants
10

Grant amount
€10.000

Deadline
12 August 2022
16.00 CEST

Do you want to represent your field as an Open Science Ambassador?
We are looking for individuals to be receptive and responsive to the needs and realities of various domain-specific research communities.

We are creating **a network of experts** to tell us: What are the needs of your community when it comes to sharing research data in EOSC?
Become an Ambassador and tell us!

Are you from any of the following communities:
Agriculture, Forestry and Fisheries; Health Ageing Retirement; Astronomy; Librarianship, Archival Science and Information Science; Biodiversity; Linguistics; Bioinformatics; Materials Sciences; Chemical Sciences; Open government data / Sustainable Development Goals; Cultural Heritage; Scholarly Communications; Earth and Related Environmental Sciences; Wind Energy; Health Sciences

Is this the kind of thing you want?

Image CC-BY Edwin Andrade https://unsplash.com/photos/4V1dC_eoCwg

EOSC Core in practice and how it supports research product providers

Pedro Principe (University of Minho and OpenAIRE/EOSC Future)

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Supporting EOSC: Putting Institutions in the Driving Seat

Institutional perspective - policies, workflows, outreach and training

Case of University of Maribor Library

Dunja Legat, University of Maribor Library / NI4OS-Europe

University of Maribor Library and the OS/EOSC

1. **National Infrastructures**: Aligning OS & FAIR data policies and building synergies within national roadmaps.
   - Cooperation in the task group for preparing the action plan of the of the Research and Innovation Strategy of Slovenia 2030, the chapter on open science.
   - Coordinator of National Open Science Cloud Initiative – **Slovene Open Science Community** (with Arnes) **– SOSC Catalogue**
   - Partner of National Initiatives for Open Science in Europe – NI4OS Europe project
   - **Library part of NI4OS - Service Onboarding Team**

SLOVENIAN OPEN SCIENCE COMMUNITY

2. **Content provider**: Enabling Open Science practices and FAIR data implementation.
   - Metadata Providers, Administration and Helpdesk of Institutional Repository and related infrastructures
3. **Service provider**: Improving skills, offering training and facilitating trusted tools and services.
   - Library as EOCS Promoter
   - End-User and Capacity Building Trainings (locally, NI4OS-Europe Training Platform)
   - Open Library – common effort of three academic libraries.

Principe, P. (2021). The Role of libraries in EOSC: powering Open and FAIR science and offering trusted services. In: LIBER Workshops - Interaction Between Research Libraries & EOSC. Available at: https://knowledge.services/wp-content/uploads/2021/10/pedro_EOSC_LIBER_SKS.pdf

University of Maribor Open Access Policy to RI

- physical & e-Infrastructure: fundamental RI (equipment, services, etc.) and/or RI for knowledge transfer (researchers, laboratories, databases, etc.).
- publicly accessible to researchers etc. within the research activities of UM and outside UM (external users, i.e. researchers, research organizations, commercial and other).
- accessible under clear, transparent and fair terms and conditions.
- access to RI may be provided free of charge or may require payment.
- the RI UM open access policy encourages collaboration with other institutions and organizations that benefit from RI UM for their research, education and training.
- the data should follow the FAIR principles (findability, accessibility, interoperability and reusability).
- research data management will be laid out in a separate regulatory document.

https://www.um.si/en/research/raziskovalna-infrastruktura/open-access-policy-for-research-infrastructure-at-the-university-of-maribor/

Three paths to enrich the EOSC Marketplace

1. NI4OS – Europe Catalogue
2. Slovenian Open Science Community Catalogue:
   - a comprehensive national portal to connect all stakeholders in the field of open science in Slovenia.
   - one stop access to Slovenian services to end-users and support them in joining EOSC.
   - SSOZ Catalogue: based on EOSC Portal Profile: common data model for EOSC entities and providers)
     - R and e-infrastructures, services based on Slovenian knowledge
     - based on free or prior known access to the services
     - EOSC compliant metadata structure – EOSC Portal Profile
     - candidates for onboarding to EOSC.
3. RIUM Catalogue
   - plan: EOSC compliant metadata
   - candidates for onboarding to EOSC

Library part of NI4OS – Service Onboarding Team

Crucial OS Infrastructures at UM Library

- Digital Library of University of Maribor (DKUM)
  - institutional repository from 2008; also research data repository from 2022 (domain agnostic metadata format)
  - for big data the repository is connected with high performance capacities for HPC
  - the DKUM is connected to the university authentication system, the university higher education information system and the COBISS system.
  - OpenAIRE compliant, part of NI4OS-Europe Catalogue
  - data exchange formats XML, RFD, JSON
  - metadata policy; PID: Handle; CC0 (metadata); data: licences CC, etc.
  - includes also content similarity check for Slovene content
  - long-term archiving – Infrastructure of National and University Library Ljubljana
- Cooperative Online Bibliographic System and Services (COBISS)
  - also infrastructure for researcher‘s bibliographies
  - shared cataloguing, transfer of catalogued metadata (COMARC based on MARC 21 format) from COBISS.SI to DKUM
- dCOBISS – monitoring of OA costs
- Slovene CRIS (evaluation based also on researcher‘s bibliographies)
- University of Maribor Press (PID: DOI)

F A I R

data quality

Depositing of Research Results – role of librarians (a workflow example)

- COBISS or DKUM (import or manually):
  - research results description: metadata providers / cataloguing
- Institutional repository (DKUM):
  - eligible depositors (also students and employees)
  - reviewers of the deposited content: validators of metadata, publisher‘s policies and allowed versions of research outcomes
  - administrators of the institutional repository
  - help-desk for users
- dCOBISS:
  - data on OA costs (monitoring)

RESULT: researcher‘s bibliography with open access fulltext, open datasets and other research outcomes -

OUTPUT FOR SICRIS

Challenges of University of Maribor Library

New roles/upskilling of knowledge:

- dissemination vs aggregation:
  - librarians - metadata experts as content providers for domain specific datasets:
    - domain specific metadata formats vs. standard metadata formats: metadata harmonization (mapping, transformation, domain agnostic semantic ontologies); aggregation of metadata from domain specific data repositories – UM scientific heritage
- data stewardship: introducing of upskilled librarians in RDM
- PID curation, PID/data versioning
- copyright clearance knowledge
- awareness of IR perspective in the research life cycle (librarians and users)

1st University of Maribor Open Science Summer School, September 2022 (https://open.um.si/)

- First attemp at UM to solve research problem with EOSC (**we gave the authors the EOSC Future Infographic**):
  - The path from a research idea to results-sharing using the EOSC to answer a research question – perspective of the PhD student and the PostDoc researcher / Nejc Novak, Yunus Emre Yılmaz (UM, Faculty of Mechanical Engineering, Maribor, Slovenia)
  - Multidisciplinary experiments at large research facilities: focus on data – answering the research question with EOSC / Aljoša Hafner, CERIC-ERIC, Trieste, Italy

➢ **RECORDING WILL BE USED FOR PROMOTION OF EOSC SERVICES AMONG RESEARCHERS**

Source: Answering research questions with EOSC. Infographic. Available at: ttps://eoscfuture.eu/wp-content/uploads/2022/02/EOSC-infographie-v1-web.pdf

MENTIMETER

How can libraries

- Training programme on RDM
- Dedicated RDM/OS support staff
- Building EOSC knowledge amongst staff (e.g. WGs in library networks)
- Involvement in EOSC projects
- Member of EOSC-A or WGs
- Assist researchers to use EOSC
- EOSC engagement in library strategy
- Onboard data/services