Progress towards engagement in EOSC: a report on the activities and impact of the EOSC Association Task Force "Upskilling Countries to Engage in EOSC"

April 2024

Authors:

Jessica Lindvall (NBIS/ELIXIR-SE)
Helen Clare (Jisc)
Zisis Kozlakidis (WHO IARC)
Sabina Anderberg (SU)
Bernd Saurugger (TU Wien)
Claire Clivaz (SIB)
Jiří Marek (MUNI)
Marek Cebecauer (The Heyrovský Institute of Physical Chemistry)
Ioana Trif (UEFISCDI)
Louise Bezuidenhout (Leiden University)
Isabel Caetano (EOSC Association AISBL)
Emma Lazzeri (GARR)
Natalia Gruenpeter (UW)
Marko Drobnjak (ARNES)

Table of contents

1. Objectives

Although Open Science initiatives are gaining traction across Europe, the level of engagement with EOSC remains variable. Thus, the EOSC Association Task Force (TF) Upskilling Countries to Engage in EOSC was established. After carefully delimiting the activities to those conducted by other EOSC TFs, projects and initiatives, the primary objective of the TF was on sharing the knowledge on significant EOSC developments at the EU Member State level and Associated Countries to Horizon Europe - with a focus on widening countries - as well as other EOSC members and observers, as well as within research performing organisations, research infrastructures, and disciplinary groups. This report aims to provide an overview of the activities conducted by the TF, outlining its main aims and achievements. The overarching aims of the TF were:

- **Identifying specific needs:** The TF aimed to assess and identify the specific needs of each country in order to enhance their engagement with EOSC. As different countries have varying requirements, the TF aimed to develop tailored strategies to support and facilitate their integration into the EOSC ecosystem.

- **Sharing of experience:** An important aspect of the TF's work was to foster the sharing of experiences and best practices across countries, as well as disciplinary groups. By promoting knowledge exchange, the TF sought to enable countries to learn from each other's successes and challenges, ultimately accelerating their progress towards effective engagement in EOSC.

- Facilitating the engagement into EOSC, p**roviding support and pathways to improvement:** The TF provided comprehensive support and guidance to involved stakeholders. This included developing pathways to improvement in areas such as policy development, infrastructure enhancement, investment strategies, and skills development. By offering practical assistance, the TF aimed to facilitate the engagement into EOSC.

2. Methodology

In close liaison with the EOSC Association, EOSC Mandated Organisations (MOs), the EOSC Steering Board, and the other EOSC Task Forces the TF aimed to connect and collect EOSC related outputs in order to implement and disseminate the information to the individual countries. The mechanism for dissemination relied on links the TF established to relevant stakeholders. From the effective start in February 2022 this TF engaged in many aspects in community building and became a truly community-driven effort.

To facilitate knowledge sharing and dissemination, the TF conducted two presentations per TF meeting (meetings were organised on a monthly basis). These presentations focused on either EOSC implementation in a specific country or domain within the EOSC ecosystem. The aim was to provide a platform for experts and stakeholders to share their experiences, insights, and best practices.

After each presentation, the TF members created blog posts summarising the content discussed during the meetings. These blog posts serve as valuable resources to share the knowledge gained within the TF with a broader audience and are published on the EOSC Forum, which is a platform dedicated to fostering discussions, exchanging information, and promoting collaboration within the EOSC community. The approach further promoted

transparency, open dialogue, and knowledge exchange within the EOSC community. It allowed individuals and organisations interested in engaging with EOSC to access valuable information, learn from the experiences of others, and benefit from the TF's work. We have added these blog posts to the Annex at the end of this report. A separate strand of activity around support for Widening countries began in Summer 2023 and is described below in section 4.

3. Challenges

One of the challenges faced by the TF was delimiting activities to ensure a focused approach. To address this challenge, the TF aligned its work with other relevant EOSC TFs, projects, and initiatives. By coordinating with the other relevant TFs (*Data Stewardship Curricula and Career Paths* and *Research Careers, Recognition, and Credit*, and *Research Engagement and Adoption)*, the TF ensured a comprehensive and cohesive approach. This alignment helped in streamlining efforts, avoiding duplication, and maximising the impact of the TF's activities.

Engaging all countries in the TF's work was another challenge. To address this, the TF aimed to have a diverse membership representing various stakeholders involved in Open Science, as well as having a balanced representation across European countries. This inclusive approach ensured a broader perspective and allowed for the consideration of diverse needs and experiences.

The TF recognised the importance of engaging EOSC MOs because it is essential that activities need to be anchored in the context of existing national efforts to progress open science. Mandated organisations vary in structure and individual requirements, therefore to effectively engage these organisations, the TF leveraged the support of the EOSC Association, which played a crucial role in establishing contacts and facilitating communication there. The TF then actively reached out to these organisations and emphasised the benefits of their participation. This collaborative approach helped in understanding the specific EOSC related needs within a country, enabling the TF to provide tailored support and guidance.

By addressing these challenges through alignment with other initiatives, inclusive membership, tailored support for different organisational structures, and active engagement with EOSC Mandated Organisations, the TF worked towards overcoming barriers and ensuring effective engagement with EOSC across all countries and engaging EOSC MOs. For example, the UK TF representatives were able to keep UK funders and key stakeholders updated despite the UK no longer having an MO due to the gap in UK association to the Horizon programme resulting from Brexit. In a similar way, the SE MO gathered representatives from across the EOSC-A TFs and other key stakeholders across Universities and Research Infrastructures to come together to exchange information and ongoing Open Science initiatives. This has allowed for a more consolidated overview of the Open Science efforts in Sweden as well as helped to strengthen the Swedish initiatives to the European scene.

The TF has also liaised with EOSC Focus, T2.2, specially through a close collaboration and exchange of information about engagement activities being planned and developed at country level, including the national tripartite events.

4. Widening countries engagement

Earlier this year, the *Upskilling Countries to Engage in EOSC* Task Force began a series of activities aimed at supporting [Widening and Associated Widening countries](#). Widening countries are countries with low participation rates in FP7 and H2020 projects and Horizon Europe Widening actions aim to increase their participation. The EOSC Association suggested this path as a way our TF could add value.

Roadmap for EOSC and widening countries: This first activity, led by TF members Jiri Marek and Marek Cebecauer from the Czech Republic, was the development of recommendations and a roadmap for Widening Countries (informally called a 'mini-MAR'). The purpose of this document was to provide a gap analysis identifying areas for development in certain European countries towards the successful implementation of EOSC and provide recommendations to address these points, which could be supported in future funding calls, such as those under the WIDERA programme. These recommendations are included in Annex 3 of this report.

Presentation at EOSC Future North Macedonia event: The TF coordinated its activities with the EOSC Future project which ran an [EOSC Future Training Workshop](#) in Ohrid, North Macedonia in September. Task Force member Louise Bezuidenhout was involved in delivering this training for EOSC Future and facilitated a session where TF member Jiri Marek presented remotely on the mini-MAR.

Sponsored places at the EOSC Symposium: As part of the funding given to the TF by the EOSC Association, the TF offered sponsored online places at the EOSC Symposium to attendees of the EOSC Future workshop. Thirty-one attendees took up the offer of a place. The TF sent out a follow-up survey to find out how useful attendees found the event, what they were interested in and what else could be done to support their countries to engage in EOSC. There were 9 respondents from 3 countries (Albania, North Macedonia and Kosovo) with one describing attendance as a 'great experience'. There was interest in all sessions but particularly the technical aspects of EOSC, with a desire for case studies and more in-depth discussion on data management and research methodologies. Training, cooperation, collaboration and awareness campaigns were highlighted as ways to improve engagement with EOSC in their countries.

Collaboration with the Polish Tripartite event: Through liaison with the EOSC Focus project, the TF connected with the organisers of the [Polish EOSC Festival Tripartite event](#) - "EOSC Festival 2023". The National Tripartite Event Poland" was organised on 6.-7.11.2023, in Krakow, with a focus on Widening participation countries. Natalia Galica from NCN, the National Science Center in Poland, came to the TF's October 2023 meeting to outline the programme and invite TF members to attend. Olga Bohuslavova (CZ) and Anna Krivjanska (SK) attended the event on behalf of the TF and participated in the panel discussions and presented the activities on national level. The agenda covered critical topics, ranging from advancing EOSC implementation in Poland and Widening Countries to exploring various models of EOSC development in Europe. The exploration of Open Science and EOSC-related activities in Widening Countries, as well as the showcase of the commitment of Polish institutions towards EOSC, provided a comprehensive overview of the current landscape. Speakers´ and participants´ active engagement in discussions, the exchange of valuable insights, and the sharing of experiences have been integral to fostering the growth of EOSC and Open Science in Europe.

5. Identified similarities

Our activities allowed the TF to identify similarities across various countries. Key themes are described below.

- **EOSC community building:** European countries recognise the significance of creating vibrant and inclusive communities to drive the adoption and integration of EOSC principles and services. Through community building efforts, countries aim to bring together diverse stakeholders, including researchers, policymakers, research infrastructures, and industry partners, to collectively shape the future of Open Science in Europe.

- **Progress in development of Open Science policies:** Many countries and organisations are making significant progress in the development and implementation of Open Science and FAIR policies. These policies aim to promote the openness, accessibility, and transparency of research outputs. They emphasise the importance of making research data, publications, and findings openly accessible and reusable by the public and encourage the dissemination of scientific knowledge. In some countries EOSC is the main driver of Open Science.

- **Alignment with Open Science principles:** Many countries and organisations are aligning their practices with broader Open Science principles and frameworks, such as the UNESCO Open Science Recommendations. They emphasise open and transparent scientific processes, open peer review, open educational resources, and the use of open licences that enable unrestricted access to research outputs.

- **Collaboration and international cooperation:** Promoting collaboration and international cooperation is a common goal among countries and organisations engaged in Open Science. They recognise the importance of sharing research findings, resources, and knowledge to address global challenges and maximise the impact of scientific research.

These developments indicate a global shift towards Open Science and FAIR principles and practices, fostering a more open and collaborative research environment. The commitment to Open Science is evident across diverse regions and domains, highlighting the shared understanding of the benefits of openness and the need to work together to advance research and innovation. However, the pathways to achieving these principles remain distinctly different, demonstrating the need for regular communication, as described below.

6. Lessons learned

Throughout its work, the EOSC Task Force *Upskilling Countries to Engage in EOSC* has gained valuable insights and lessons learned. These lessons provide guidance for future endeavours and contribute to the continuous improvement of engagement with EOSC. Annex 1 gives a list of the TF events or presentations. Some key lessons learned from the TF's activities include:

- **Context matters:** Each country has its own unique context, including different research landscapes, infrastructures, and policies. It is essential to recognize and understand these contextual differences to tailor strategies and support mechanisms effectively. Taking into account the specific needs, challenges, and strengths of individual countries allows for a more targeted and impactful approach to engaging with EOSC, such as those suggested in our recommendations for Widening countries in Annex 3.

- **Flexibility and adaptability:** The EOSC landscape is constantly evolving, and new developments and initiatives emerge regularly. The TF learned the importance of flexibility and adaptability to respond to changing environments effectively. Establishing communication channels and working models that allow for agile decision-making and rapid adjustment of strategies is crucial to staying relevant and addressing emerging challenges and opportunities.

- **Collaboration is key:** The success of engaging countries in EOSC relies on strong collaboration among various stakeholders, including national representatives, research performing organisations, policy-making bodies, and funders. Here, building a strong and inclusive community around EOSC is vital for its success. The TF recognised the importance of a community-driven approach, actively involving stakeholders and encouraging their participation.

- **Knowledge exchange accelerates progress:** Sharing experiences, best practices, and lessons learned across countries, disciplinary groups, and organisations greatly accelerates progress towards effective engagement with EOSC. Creating platforms for knowledge exchange, such as presentations and blog posts, helps disseminate information and facilitates learning from one another's successes and challenges.

Based on our discussions and sharing, the TF has developed a series of recommendations for EOSC engagement strategies. These are listed below and will also be included in a joint paper being produced by the TF in collaboration with other relevant TFs:

- **Co-organise stakeholder events:** for example, tripartite events, EOSC coffee/cafes, retreats or festivals.

- **Provide opportunities for learning and sharing:** including summer schools, hackathons, retreats, knowledge exchange workshops, gamification, train the trainers' programmes.

- **Build a network of ambassadors/champions:** through an ambassadors' programme or train the trainers' initiative.

- **Provide financial support:** such as adoption grants or prizes.

- **Communicate effectively**: community blog posts, official communications materials for reuse, real-life case studies, tailored communications for your country/community.

- **Join EOSC-structured communities:** such as Task Forces or project expert groups to find out about activities in other countries.

7. Next Steps

As the EOSC Task Force *Upskilling Countries to Engage in EOSC* moves forward into its final months, several important next steps are considered below. These steps will contribute to further advancing the TF's objectives and maximising its impact on the engagement of countries with EOSC.

- **Contributing to a joint paper from the Research Careers and Curricula Task Forces:** This short paper "Fostering Open Science in Europe: Engagement Strategies from EOSC's Task Forces on Research Careers and Curricula" (published in April 2024).

- **Continued collaboration and knowledge exchange**: The TF will maintain and strengthen its collaboration with the EOSC Association, EOSC Steering Board, EOSC MOs, and other EOSC TFs. This collaborative approach ensures alignment with broader EOSC initiatives, facilitates knowledge exchange, and allows for the integration of the TF's outcomes into the wider EOSC ecosystem. We contributed to the EOSC Winter School in January 2024 and are liaising with the EOSC Association about how our valuable activities can be taken forward beyond the end of the Task Force.

- **Tailored strategies and support:** Building on the lessons learned and the specific needs identified for each country, the TF members will continue providing guidance on policy and skills development. TF members will work closely with national representatives, research performing organisations, and other stakeholders to ensure the strategies and support provided effectively address the unique requirements of each country. In particular, we will work closely with the EOSC Association to progress the TF's recommendations around Widening Countries and Associated Widening Countries.

By focusing on these steps, the EOSC Task Force *Upskilling Countries to Engage in EOSC* can advance its mission, promote effective engagement with EOSC, and contribute to the development of a more accessible, inclusive, and collaborative research environment.

Annex 1: Full list of Task Force members

Co-chairs
Jessica Lindvall, NBIS
Helen Clare, Jisc
Zizis Kozlakidis, BBMRI
Sabina Anderberg, Stockholm University

Task force members
Sofia Andersson, Karlstad University
Louise Bezuidenhout, Leiden University
Daniele Bonacorsi, University of Bologna / INFN
Marek Cebecauer, Czech Academy of Sciences
Cymon Cox, Centro de Ciencias Do Mar
Elke Dall, Centre for Social Innovation
Milena Dobreva, Sofia University
Marko Drobnjak, ARNES
Elif Ekmekci, TOBB University
Sonja Filiposka, UKIM
Katherine Flynn, ISEKI-Food Association
Vicky Garnett, DARIAH-EU
Natalia Gruenpeter, University of Warsaw
Claudia Hackl, University of Vienna
Ildikó Kádárné Kelemen, KIFU
Anna Krivjanska, CVTI SR
Emma Lazerri, GARR
Jiří Marek, Masaryk University
Ali Nazakat, CNRS
Julia Priess-Buchheit, Kiel University
Bernd Saurugger, TU Wien
Betül Tanbay, European Mathematical Society
Ioana Trif, UEFISCDI
Beatrix Weber, GÉANT

EOSC Association board liaison
Wilhelm Widmark, Stockholm University
Sara Garavelli, CSC – IT Center for Science

EOSC Association support coordinator
Neringa Jackevičė

Annex 2: List of presentations given

- EOSC/OS in Italy, May 2022, Emma Lazzeri
- Making Open Science. A Researcher Point of view between Switzerland and Europe, July 2022, Claire Clivaz
- EOSC/OS in Hungary, October 2022, Ildiko Kádárné Kelemen
- EOSC Prague Symposium, November 2022, Claire Clivaz and TF
- Awareness rising on Open Science, EOSC and FAIR Principles, Georgian EOSC Tripartite event, November 2022, Helen Clare.
- EOSC/OS in Czech Republic, December 2022, Jiri Marek
- EOSC/OS in Sweden, December 2022, Sofia Abrahamson/ Sofia Andersson
- DARIAH-CH Committee (online), January 2023, Claire Clivaz
- EOSC and Open Research in the United Kingdom, January 2023, Helen Clare
- Review of the activities of EOSC Focus Task 2.2, February 2023, Isabel Caetano
- Promoting Open Science from an institutional and inter-governmental perspective, February 2023, Zisis Kozlakidis
- Open Science Policy & EOSC in Romania, March 2023, Ioana Trif
- ELIXIR health sciences research infrastructure relating to EOSC, Sweden, March 2023, Jesicca Lindvall
- German EOSC event, April 2023, Claire Clivaz and TF
- Skills4EOSC, Italy, May 2023, Emma Lazzeri
- Advancing Open Science and the EOSC - a perspective from southern Portugal, May 2023, Cymon J. Cox
- EOSC/OS in Slovenia, June 2023, Marko Drobnjak
- EOSC/OS in Slovakia, June 2023, Anna Krivjanska & Marek Cebecauer
- Swiss EOSC Online Coffee, September 2023, SE & CH, Jessica Lindvall & Swiss group
- IDW 23 -Poster "Humanities and Open Science", October 2023, Switzerland, Claire Clivaz & Rita Gautschy (CH)
- Swiss 2nd EOSC Online Coffee: EOSC and Swiss Nodes, November 2023, Bob Jones & Swiss group
-

Annex 3: Copies of blog posts published

1. December 2022 Updates from the EOSC Upskilling Countries TF

The Upskilling Countries to Engage in EOSC Task Force has monthly meetings where we share updates and approaches from different countries and domains on progress towards engagement with EOSC.

This month we welcomed two new members to the Task Force: **Dr Elif Ekmekci** from Turkey and **Marko Drobnjak** from Slovenia, bringing our TF country representation up to 17 countries. We also welcomed **Neringa Jackevice** and **Isabel Caetano** to the TF. Neringa is our new TF support officer and Isabel is representing EOSC Focus, to ensure coordination and communication with EOSC Focus regional activities, including Tripartite events.

Country presentations

In December's meeting we had presentations from the Czech Republic and Sweden:

- **Jiri Marek** (Open Science Manager at Masaryk University) presented on EOSC and open science in the Czech Republic and described the country's shift from a compute-centric to data-centric approach
- **Sofia Abrahamson** (from Sweden's mandated organisation, the Swedish Research Council, SRC), Swedish Research Council), @ Sabina Anderberg (Stockholm University) and **Sofia Andersson** (Karlstad University) presented on activities at different levels in Sweden, from institutional to national level.

Discussions this month

Key issues arising in our discussions this month included how institutions are **feeling under pressure** with so many agreements and commitments relating to open science, the latest being the Coalition for Advancing Research Assessment (CoARA) Agreement.

We also had some discussion around **EOSC member fees** and how this affects engagement of institutions - key points were taken forward by TF member @ Claire Clivaz to a meeting of the EOSC Association Membership Fees Working Group which took place on 13th December.

We had a question about whether countries were using the EC **Recovery and Resilience Facility** to fund open science activities - please let us know if this is happening in your country.

19.12.22, Helen Clare (UK): "December Updates from EOSC Upskilling Countries Task Force", https://forum.eosc.eu/message/63a03ed079938c661e4570c3

2. TF Upskilling Post: EOSC in Austria - EOSC Support Office Austria

EOSC Austria

The national initiative, EOSC Austria, is legally represented by **ACONET Association** the Austrian EOSC Mandated Organization and managed by its operational body, the EOSC Support Office Austria, which currently consists of 6 partners and 7 extraordinary partners.

The partners are united by their common interest in a coordinated development of the Austrian Open Science Policy. The EOSC Support Office Austria supports the implementation of EOSC and its operational goals at Austrian level. These goals are based on the EOSC Association AISBL, coordinated with the partners and developed in annual work programs. Other goals include the development of an EOSC Strategic Agenda Austria, the establishment of Working Groups (WGs) and ongoing monitoring activities of the Austrian research landscape and cultural heritage institutions – with the purpose of enabling "EOSC Readiness", as well as to initiate the introduction of success indicators (KPIs). Guiding Principles, which are enumerated in the Memorandum of Understanding (MoU), set the spirit of the Austrian EOSC Initiative. They are defined as follows:

- **Openness:** The initiative is committed to an open way of working in the partner network.
- **Culture of dialogue:** Dialogue between partners is encouraged to support personal networking and exchange of views.
- **Free access:** The partners commit themselves to free access to the results of the joint work in the initiative.
- **Defined ownership of rights:** The partners ensure the sustainability of the results through regulated ownership of rights within and outside the network.
- **Identifiable division of roles:** The initiative has a regulated relationship of all partners to each other through defined administrative structures and work processes. Roles and responsibilities are clearly recognisable from inside and outside the network.
- **Structured working methods:** The working methods of the working groups in the initiative are defined by regulated meetings, clear responsibilities, defined voting modes and communication.
- **Clear information infrastructure**: The partners have a common, national information infrastructure in the form of a wiki with terms of use.

The internal management structure of the partner community consists of the following bodies:

- The **General Assembly (GA)** acts as the representative body and as the final body responsible for decision-making.
- The **Management** ensures the optimisation of processes and acts as an intermediary for the coordination between the partners of the initiative. It consists of the **Management Board** and the **Secretariat.**
- The **Steering Committee** provides the basic orientation of the initiative. It is composed of one representative of the partners and is convened by the GA.
- The **Synergy Team** coordinates the work of the Working Groups (WGs), which develop the content of EOSC topics.
- The **EOSC Café** is an Open Forum providing external stimulus.

General Assembly

The **General Assembly (GA)** acts as the representative body and as the final body responsible for decision-making. The General Assembly is composed of one representative of each partner and is open to the public. It elects a chairperson and a deputy from among its members. The

term of office of the chairperson and the deputy is limited to two years. They can be re-elected after this period of office. Upon acceptance of office, the chairperson and the deputy can no longer represent the partner to whom they belong and have no voting rights. The partners concerned appoint new representatives. The GA sends its chairperson and deputy to the Steering Committee.

Management Board

The **Management Board** consists of 4 representatives of the EOSC Support Office Austria. The partners who send representatives to the Management Board are elected by the General Assembly. A re-election is possible. The main task of the Management Board is the establishment, operation and administration of the EOSC Support Office Austria. The Management Board has a chair, which represents the management and rotates annually between the partners. Each elected and represented partner has the right to take over the chairmanship for one year at a time. One year after exercising the chairmanship, the respective partners automatically leave the Management Board.

Secretariat

The Secretariat supports the Management Board. It is based at the TU Wien with further members at TU Graz and Uni Wien. Its tasks are:
- Back office functions
- Organisation of and participation in meetings and events
- Keeping of the minutes/protocols
- Comprehensive documentation of the activities (processes, discussions, results, etc.) in the shared wiki
- Establishing and maintaining contacts with partners and other stakeholders
- Support of the [EOSC Austria Zenodo Community](#)
- Establishing and visualising workflows

Within the EOSC Support Office Austria Secretariat there is a Communication Team, taking care of the [website](#) development, the support of marketing and PR measures, the development of communication strategies, as well as the dissemination of news.

Steering Committee

The **Steering Committee** provides the basic orientation of the initiative. It is composed of one representative of the partners and is convened by the General Assembly (GA). It comments on, reviews and recommends the drafts submitted to it by the Synergy Team or the Management.

Synergy Team

The **Synergy team consists of the coordinators of the Working Groups (WGs)** and the first Chair of the Management Board. It coordinates the work of the WGs and thus ensures meetings, exchange and networking in the joint initiative on a regular basis. The Synergy team elects a spokesperson and two deputies. It reports to the Steering Committee, the General Assembly and the Management Board.

EOSC Café

The EOSC Café is an open forum consisting of experts from inside and outside the initiative. Their backgrounds are in different disciplines of science and research, research policy, society and economy. The experts provide the EOSC Support Office with impulses from "outside". EOSC Café participants meet up at least three times per year.

Working Groups

The aim of the Working Groups (WGs) is to advance EOSC-relevant topics. To this end, they may organise events and workshops, launch surveys or write recommendations on specific topics. They report to the Management Board and the General Assembly and publish the results according to the criteria of good scientific practice in the [EOSC Austria Zenodo Community](#). WGs are convened and confirmed by the General Assembly. Proposals for the creation of new WGs can come from the entire community. WGs are limited in time and work on specific topics. Accordingly, they can be very diverse in composition. If necessary, external experts can be invited.

WG Austria Country Profile

This WG monitors the EOSC building processes in Austria, i.e. open science and FAIR regular policies, projects and activities as well as RDM infrastructures. Its goals are to monitor EOSC building processes in Austria on a regular basis, to update their reports on a quarterly basis, to share findings with representatives at the decision-making level (for further inquiries and alignment) and to update the website **[forschungsdaten.info](#)** (section about Austria). See their [result](#)!

WG Collections

The WG Collections has established a group on Open Scientific Collections in Austria and set up a knowledge space. Expected results include policies for decision makers, the development of RDM skill sets and guidance elements.

WG Data Stewardship

The WG Data Stewardship supports the establishment of data stewardship programmes by aligning efforts and activities on a national and international level. Goals include the aligning of data stewardship efforts and activities on a national and international level, (e.g., FAIR Data Austria, RDA IG, EOSC Association Task Force), finalising the concept on models, roles, tasks, competences and training offers for data stewards, developing guidelines for the implementation of data stewardship programmes and potential career paths at Austrian institutions and investigating the differences and similarities of data stewardship in industry, museums and academia. See their [result!](#)

WG KPIs

The WG KPIs develop measurable indicators to make the success of EOSC visible at the national and international level, with special focus on the overarching goals for Austria ("readiness indicators"). In addition, KPIs serve as a steering instrument for targeted impact-

oriented further development and implementation of the EOSC. So far two workshops have been organised and a basic concept in alignment with different policies and stakeholders on different levels has been characterised. The concept defines indicators, methods and responsibilities.

WG Researcher Engagement

The WG Researcher Engagement in Austria will contribute to the identification of the research communities' needs to ensure services will be of actual use and support researchers in actively shaping the EOSC through feeding their feedback to the EOSC TF to e.g. update the Strategic Research and Innovation Agenda (SRIA), all while facilitating balanced participation from disciplines and institutions. Activities include an interview series (on-going) and workshops (in planning) on the topic of trustworthy data infrastructures and requirements for data sharing and reuse in different disciplines. See their result!

WG Stakeholder Engagement

This WG aims at engaging with stakeholders beyond researchers and thus intends to evaluate relevant stakeholders for the EOSC in Austria from academia, the public sector and industry. It focuses on enabling discussions rather than producing reports. Next steps include the mapping of relevant stakeholders, the development of information material about EOSC tailored to the different stakeholder groups as well as the organisation of community events.

WG Technical Infrastructure

The WG Technical Infrastructure aims to collect potential gaps related to e-infrastructures, data, applications and services, and assess requirements for new users as well as providers with a possible destination to frame use cases, all while basing activities on synergies resulting from ongoing projects and developments in e-infrastructure or software solutions.Members of this WG are participating in several EOSC Association Task Forces such as the **Technical Interoperability of Data and Services Task Force**, the **Long-Term Data Preservation Task Force**, the **FAIR Metrics and Data Quality Task Force** as well as the **Task Force on Semantic Interoperability**.

WG Training

The WG Training has set itself the goal of making existing training materials more accessible and visible as Open Educational Resources, but also to develop new training where needed and to fill gaps in the range of training courses currently offered. The training materials should be in line with the FAIR principles. Together with an expert for licences, a workshop took place on September 13th, 2022. Metadata fields were discussed and test-training-materials were uploaded and linked to existing materials in other repositories. Next steps include the publication of a report about the workshop, a search for other possibilities to upload training materials as well as a search for gaps in the existing training materials and checking the accessibility of the materials offered.

For further information on the EOSC Support Office Austria please visit the website or contact contact@eosc-austria.at!

23.12.22, Bernd Saurugger (AT): "TF Upskilling Post: EOSC in Austria - EOSC Support Office Austria", https://forum.eosc.eu/message/63a5a7037293c363ddb95864

3. EOSC in Austria: Austrian Open Science Policies

Open Science Policy Austria

Open Science Policy Austria was adopted in February 2022. There, Austria committed itself to the Open Science movement and the European Open Science Cloud (EOSC). The vision of Open Science is to make scientific processes more open and effective and to use both scientific excellence and open innovative and applied research to address current challenges, which are very comprehensively presented in the Policies of the EU Commission and in the framework of the Global Sustainability Goals (UN SDGs).

Publications

According to the Open Science Policy Austria, open scholarly publishing must become the standard approach as soon as possible. To drive this momentum, research publications resulting from calls for projects that are publicly funded must be disseminated via open access platforms, be it in journals, books or via an open public repository. Austrian universities are encouraged to ensure that publications by researchers working there are also under open licences. To maintain these practices over time, the evaluation system for researchers and research institutions needs to be updated to reflect the principles and practices of open science. Changes in the way researchers are evaluated aim to give more weight to quality over quantity, as outlined in the proposals of the San Francisco Declaration on Research Assessment (DORA) and the principles of the Leiden Manifesto. The scientific community must regain control over the publishing process in general, in accordance with the principles that govern open science and bibliodiversity are required. It must focus its efforts on those stakeholders who are working to develop a less concentrated publishing environment that is consistent with the principles.

Data and Services in Place

According to the Open Science Policy Austria, the aim is to ensure that data generated by publicly funded research in Austria have to comply with the FAIR principles (findable, accessible, interoperable and reusable), that they have to be preserved and, whenever possible, made openly accessible to the public.

The goal is also to implement a mandatory open-access dissemination mandate for all data that has already been made available as part of publicly funded projects. Certain exceptions to this obligation will be allowed in accordance with the law, e.g., if the data in question are professional secrets, statistical secrets, labor and trade secrets, personal data, or content subject to copyright, as well as if the data are considered sensitive due to national security, defense, or public safety and health.

Considering the European Data Strategy, several European legal provisions regulate the reuse of research data, in particular the European Commission Recommendation on Access to and Preservation of Scientific Information (revised 2018), the revised Directive on Open Data and the Reuse of Public Sector Information (Open Data and PSI RL 1024/2019), and the EU Copyright Directive, which applies to publicly funded research data and to which Austria subscribes. The aim is that research data can be re-used for commercial and non-commercial purposes, as long as it has been publicly funded and if it has been made publicly available by researchers, research institutions or research funding bodies via an institutional or thematic archive.

Furthermore, the European Data Strategy published in 2020 is intended to drive forward the creation of a single market for data. The aim is to increase the exchange and use of data within the EU and across sectors for the benefit of researchers, companies, and public administrations. This approach also forms the basis of the new European Research Area (ERA) to build a common science and technology space for the EU. Open Science and Open Data are essential tools for improving collaboration between researchers and innovators to enhance Austria's attractiveness as a location for the world's best talents.

Research Evaluation

According to the Open Science Policy Austria, new ways of evaluating research will be explored, especially to accommodate open science practices. Publish-or-perish environments will be broken up and avoided. Open peer review practices are to be implemented in order to make the evaluation of scientific output more transparent. Despite years of intense criticism of so-called journal-based metrics, the impact factor of prominent journals still plays a significant role in the scientific community, especially when it comes to career planning. Increased transparency of evaluation processes of researchers and their applications should be ensured. Austria respects the goals of the San Francisco Declaration on Research Assessment (DORA), an international initiative that aims to establish metrics for evaluating scientific work. On the European level, the Leiden Manifesto should be mentioned in this context, which formulates similar intentions in the European context.

Open Learning

According to the Open Science Policy Austria, the aspect of how knowledge is taught is also inseparably linked to an open society and an open science. The dissemination of knowledge is closely linked to the concept of open data.

Measurements:
- Austria would like to make its contribution to making the learning materials created in Austria publicly accessible in open formats in whatever form, for example on the basis of established open data standards. In a first step, the relevant repositories will be linked and thus made publicly accessible. In this way, Austria would like to make learning content available to the scientific community on the one hand, and on the other hand make learning more flexible and adapt it to individual needs.
- Universities and other extramural research institutions are therefore called upon both to create infrastructures to be able to deposit OER and to share them with others. Staff

working at universities and universities of applied sciences should be encouraged to post and share their content in open formats where possible and appropriate.

The Forum New Media Austria (FNMA) has already prepared "Recommendations for the Integration of Open Educational Resources at Universities in Austria". The currently running project "Open Education Austria Advanced", in which several universities are involved, deals with the implementation of a corresponding infrastructure. Website: https://fnma.at/

Public Sector Information (PSI) initiative

The European Open Data and PSI Directive provides the legal basis for the re-use of public sector data and sets a minimum set of rules. Focus is on non-personal data that are made freely available in the public interest. The Austrian Open Data Portal is one of the servopen ices supporting this initiative: Open Data Österreich – https://www.data.gv.at/

Open Science policies by funding organizations

The largest national funding agency for basic research, the Austrian Science Fund (FWF), is committed to support open and FAIR science through its open access policy to publications and to research data (https://www.fwf.ac.at/en/research-funding/open-access-policy/).
89% of all publications resulting from FWF projects are openly accessible. Since 2019, the FWF requires a data management plan (DMP) supplemental to all approved grant proposals. The FWF has defined a minimum set of questions that comprise the DMP and that are to be addressed in the DMP template. The FWF DMP is in line with Science Europe's "Core Requirements for Data Management Plans".

The Vienna Science and Technology Fund (WWTF) also released an Open Science Policy in March 2022:
 https://wwtf.at/funding/our-principles/downloads/open-access-and-opensciencepolicy

Research data management policies in Austrian universities

Nine universities in Austria have policies for research data management in place, encouraging in these policies open science practices and the adoption of the FAIR principles:
• Medical University Graz
• Medical University Vienna
• Graz University of Technology
• TU Wien
• University of Graz
• University of Innsbruck
• University of Music and Performing Arts Vienna
• University of Vienna
• WU (Vienna University of Economies and Business)

This report is a result of the EOSC TF Upskilling Countries to Engage in EOSC. It summarizes the presentations and discussions given there

23.12.22, Bernd Saurugger (AT): "EOSC in Austria: Austrian Open Science Policies", https://forum.eosc.eu/group/eosc-task-forces/documents?limitTo=allDocuments&groupId=6299e718d38ea54e41065a50&sortBy=newDocuments&previewDocument=63a5a54dcd9fe862c0e2b3aa

4. January 2023 Updates from EOSC Upskilling Countries Task Force

The Upskilling Countries to Engage in EOSC Task Force continues the monthly meetings where we share updates and approaches from different countries and domains on progress towards engagement with EOSC.

Our first meeting of 2023 happened on Monday 9th of January and although this, for many of us, was the first working day after the holiday winter break, we were a team of **21 individuals** connecting to share Open Science and EOSC related issues and updates. We highlighted and discussed EOSC forum news items of specific interest to the Task Force, such as that E**OSC-Steering Board Opinion Papers** are now published ([link](#)), **Public Consultation on EU Research and Innovation Programmes** is now open ([link](#)) and **Digital Decade Policy Programme** 2030 ([link](#)). More details of these and other EOSC News are to be found in the #EOSC News channel.

Country presentations

In January's meeting we had presentations from one country:

- **Helen Clare** (UK, [JISC](#)) presented on EOSC and Open Research in the United Kingdom and described the country's many initiatives, European project involvement but also the challenges the country faces due to Brexit regarding Open Research and EOSC.

Discussions this month

Key issues arising in our discussions this month included **a continuous discussion regarding EOSC membership fees and how this affects engagement of institutions**. The Task Force members Claire Clivaz @ Claire Clivaz and Marek Cebecauer @ Marek Cebecauer , respectively, are two out of forty invited individuals to take part in **the EOSC-Association Membership Fees Working Group.** The Working Group had their kick-off meeting on the 13th of December and the second meeting will take place on the 23rd of January. The Working Group is currently discussing different models regarding fees for members and observers and the Working Group is also preparing a membership-survey.

We had **a question whether the EOSC Forum would be an appropriate platform as to share, discuss and raise ideas for future EOSC and Horizon project collaborations**? And using the Forum, the possibility to find new collaborative partners. The general consensus from the Task Force Team was that the EOSC Forum would be an excellent forum for creating such future synergies. We welcome other Task Force members' view on this e.g in a discussion thread regarding if this would be an appreciated and used channel for others in this forum?

Best wishes

TF Upskilling Co-chairs

Jessica Lindvall & @ Helen Clare

09.01.23, Jessica Lindvall (SE), "January Updates from EOSC Upskilling Countries Task Force", https://forum.eosc.eu/message/63bc612778e92a1fd960c10e

5. Upskilling Countries to Engage in EOSC - Sweden

National assignments related to Open Science presented in this blogpost aims to give a short overview of some of the work from some of the national authorities that are involved in the work on Open Science in Sweden.

The Swedish Government In May 2016, governments in EU countries adopted Council conclusions stating that the Union should make the transition to a new system for Open Science. Partly as a consequence of this, the Government stated in its research bill Kunskap i samverkan för samhällets utmaningar och stärkt konkurrenskraft [Knowledge in collaboration for society's challenges and strengthened competitiveness] (Government Bill 2016/17:50) that all scientific publications resulting from publicly funded research should be made openly accessible immediately upon publication. The research and innovation bill entitled Forskning, frihet, framtid – kunskap och innovation för Sverige [Research, Freedom, Future – Knowledge and Innovation for Sweden] (Government Bill 2020/2:16) states that "scientific publications resulting from publicly funded research shall be openly accessible immediately with effect from 2021. The transition for research data shall be fully implemented by 2026, which means that research data should be made available as "open as possible, as restricted as necessary".

The government assigned specific national coordination responsibility for open access to data to the Swedish Research Council and for publications to the National Library of Sweden. The Government followed up on these assignments in the most recent research policy bill (Govy. Bill 2020/21:60), resulting in e.g. that from 2021, Swedish universities have an explicit task to support the national movement towards an open research system. One of the goals of the Government bills is for the transition to open access to research results, including scientific publications, artistic works and research data, to be fully implemented within ten years – that is to say by 2026.

The National Library of Sweden (Kungliga biblioteket, KB) was in 2022 commissioned by the Swedish government to develop national guidelines for Open Science. This means identifying common goals and priorities, mapping the distribution of roles and areas of responsibility and defining the need for support and guidance. Developing effective national guidelines is highlighted as an important action in UNESCO's recommendation on Open Science from 2021, and is one of the identified assignments in KB's latest mission report. This aims at taking a holistic perspective on Open Science. Sweden has been working with open access to scientific publications and research data for many years. The National Library and the Swedish Research Council have the task of coordinating, promoting and to follow up the

national work with open access to publications and research data. In addition, the National Library is also tasked with mapping and analysing the use of open educational resources and public participation in the research process (citizen science). The National Library has assembled a **reference group** consisting of the Swedish Research Council (Vetenskapsrådet), the Association of Swedish Higher Education Institutions (Sveriges universitets- och högskoleförbund, SUHF) and other relevant stakeholders to assist them to carry out the assignment. A report on the assignment will be submitted to the government in January 2024.

The Swedish Research Council (Vetenskapsrådet, VR) is the largest public funder of research at Swedish Higher Education Institution (HEI). The publications that result from research that is wholly or partly funded by the Swedish Research Council should be freely accessible to all, without delay. The requirement applies to all types of scientific publications, for example articles, monographs, books and book chapters. Presently, the follow-up of these rules is limited.

The Research Council gives advice to the government on future research policy and coordinates communication about research and research results. Since 2017, the Swedish Research Council has the task to promote, coordinate and follow-up on the national work of introducing open access to research data. The assignment was updated in 2022 to "*coordinate and promote and evaluate the work with transitioning to open access to research data*". The background to the mandate is, among other things, a Government assignment mandate to draw up national guidelines for open access to scientific information, which the Swedish Research Council was given already in 2013. This resulted in the report Proposal for National Guidelines for Open Access to Scientific Information. In March 2022 the Swedish Research Council published a report on their mandate The Swedish Research Council's Coordination Mandate on Open Access to Research Data 2022 (in Swedish, a summary in English).

The Swedish Research Council and SUHF have developed a data management plan template. The purpose of the guide is to facilitate the understanding of what the guiding questions in the template entail, to provide further support in the work with data management plans. The guide can be used by researchers to create better understanding of what is intended with the questions in the template for the data management plan, but the primary target group of the guide is research-supporting functions that support the researchers' work with data management plans. The guide may also be of use when producing local or discipline-specific adaptations.

The Research Council is the Swedish **mandatory organisation in the EOSC Association** (EOSC-A). In Sweden there are at the moment nine HEI members of EOSC-A - Chalmers University of Technology, Karolinska institutet, Swedish University of Agricultural Sciences, University of Gothenburg, Lund University, Uppsala University, Umeå University, Linnaeus University and Stockholm University. In addition to the Swedish Research Council, Formas and the Swedish Polar Research Secretariat are also members of EOSC-A. The Swedish Research Council's **reference group for open access to research data** and the European Open Science Cloud (EOSC) includes representatives from a set of relevant stakeholders. The work of the reference group includes contributing to a good overview of the landscape in terms of the work on open

access to research data nationally and within the European Commission's investments and initiatives, with particular focus on EOSC creating engagement with, wide acceptance of , and spreading knowledge about the Government's mandate on open access to research data and the European collaboration on these issues facilitating the implementation of the FAIR principles to promote access to research data contributing to an overview of the development, how the practical work on open access to research data is done, and other relevant issues in the implementation of open access to research data of relevance to organizations.

The Association of Swedish Higher Education Institutions (Sveriges universitets- och högskoleförbund, SUHF) is an organization for institutional cooperation on a voluntary basis. It consists of the full span of Swedish Higher Educational Institutions (HEIs), joining together 38 Swedish universities and university colleges' members (16 universities, 18 university colleges and 4 university art colleges). The association provides an arena for exchange of views and cooperation among its member institutions and safeguard their interests. It aims at promoting sector interests to external actors and at strengthening internal cooperation. Many of the issues that are of importance to the HEIsector in the association are processed by different kinds of permanent or temporary working groups. The General Assembly comprising all member institutions takes the decisions on principle issues twice a year. The association is a member of The European University Association (EUA), The Nordic University Association (Nordiska universitetssamarbetet (NUS), The International Association of Universities (IAU) and through Stockholm University as legal entity a member of EOSC-A since 2021.

When making the transition to an Open Science system by 2026 Sweden's HEIs should form part of a scientific ecosystem, e.g. in line with the EUA Agenda for Open Science. In the wake of digitalization and the transition to Open Science, a new research culture is emerging with new requirements for the correct management of research data, as well as new requirements and opportunities for the publication of both research data and research results with open access. Open Science will form part of the day-to-day lives of every researcher. Each individual researcher will be responsible for taking advantage of the demands and opportunities of the new science system, just as every HEI will be responsible for ensuring that researchers are provided with the framework, support, services and training needed to take part in and be part of Open Science.

The National Roadmap for Open Science was adopted by the SUHF General
Assembly on 10 March 2021. It was revised in 2022 and adopted by SUHF's Board. The roadmap aims to clarify the responsibilities of HEIs and the measures needed to accelerate work on open access to research data and research results. The aim is to create enhanced opportunities for HEIs and other stakeholders to coordinate on issues of a common nature, encourage enhanced collaboration and jointly create conditions so that researchers regardless of their affiliation to any particular Swedish HEI, have similar opportunities for services and support in the transition to an Open Science system. The roadmap contains eight comprehensive recommendations for actions that need to be implemented and skills that need to be in place at HEIs in order to achieve an open and FAIR science system.

The roadmap was complemented by the [Guide for implementation of the Roadmap for Open Science](#) adopted by the SUHF Board in June 2022. The guide contains specific proposals for actions and capabilities that need to be in place at HEIs so as to achieve the Government's target scenario of a transition to an open scientific system in 2026. It also includes an overall schedule for when these capabilities should be in place. The proposals take into account that the HEIs vary in size, organisation and resources and will work partly differently to achieve common goals.

SUHF seminars on Open Science will take place during spring 2023. The general theme for all three Open Science webinars is: *the HEIs´ transition to an open scientific system - how is it going?* The first seminar deals with transformative agreements. The second seminar will focus on SUHF roadmap and a survey to follow up how the HEIs are using the roadmap and the guide with proposals in their local work. The third seminar will focus on CoARA.

In May SUHF together with the Swedish Research Council, the National Library of Sweden, the Swedish Museum of Natural History, the Swedish National Commission for UNESCO, the Swedish Science Centres, and the non-profit association Vetenskap och Allmänhet (VA). will take part in arranging an **Open Science conference**. The "Open Science – From Policy to Practice '' conference will highlight different aspects of shaping, implementing and embedding Open Science. The conference is associated with the Swedish Presidency of the Council of the European Union.

The target groups are policy makers, researchers, practitioners and stakeholders from across Europe, that in Stockholm or online, will exchange knowledge, share best practices and discuss how Open Science can contribute to strengthening democracy in and beyond the European Union.

There is also an event organised by SUHF and the Swedish Research Council in Stockholm in early October 2023. At this conference there will be opportunities to discuss the Swedish research policy bill, but also the development within the European Open Science Cloud Association (EOSC-A) and the target image of EOSC as a digital ecosystem for research data - and what it means for the Swedish HEIs.

Swedish National Data Service (Svensk Nationell Datatjänst, SND) is a university-owned research infrastructure with the primary function to support the accessibility, preservation, and reuse of research data and related materials. SND is hosted by Gothenburg University and jointly funded by the Swedish Research Council and a consortium of main Swedish universities; University of Gothenburg, Chalmers University of Technology, Karolinska Institutet, KTH Royal Institute of Technology, Lund University, Stockholm University, Swedish University of Agricultural Sciences, Umeå University, and Uppsala University. Together with a network of around 40 HEIs and public research institutes, SND form a national infrastructure for open access to research data. The SND network consists of the Swedish HEIs and public research institutes that have agreed to create local support units for managing research data and contribute to the network through an annual fee. The network members will operate

independently in creating their local functions for research data management, but can ask SND for support and advice.

An important part of SND's operations is to support researchers in data management. This involves detailed information about how to develop data management plans, practical advice regarding data management during the research process as well as long-term storage and making the data openly accessible. SND has also developed guiding material regarding legal aspects of research data management, such as ethical considerations, IPR and GDPR. SND continuously arranges open seminars about both general research data management and discipline specific issues. SND also offers training and development services for the network members' research data support functions, for instance the web-based course BAS Online and the commissioned training Research Data: Accessibility, Management, and Collaboration.

A working group within SND with representatives of about ten HEIs in Sweden are developing an "Orientation map" for the implementation of the proposals in the **Guide for implementation of the Roadmap for Open Science** to help the HEIs to map what is in place and what is not. This will provide a more practical guidance for the HEIs and present concrete examples of ongoing work.

Perspectives from six HEIs in Sweden.

Many HEIs have adopted or are in the process of creating new policies and guidelines in accordance with Open Science practices. Moreover, the infrastructure and administrative support is continuously developed to safeguard and fulfill the requirements of FAIR research data. Below are four perspectives and examples of ongoing strategic activities related to the HEIs´shift to Open Science and how they have started to implement the recommendations proposed in the SUHF roadmap.

Chalmers University of Technology
Based on a thorough needs analysis and strategic process started in 2016, Chalmers University of Technology in 2020 decided to initiate Chalmers eCommons, an integrated digital infrastructure for research with a mandate from the President to provide support and access to resources for all aspects of research data, including DMPs, storage (project and long-term), analysis, legal aspects, documentation, publication and preservation. Chalmers e-Commons also has a mandate to act as the university node in relevant national (e.g. SND) and international (e.g. EOSC) initiatives. Chalmers e-Commons is now a basis and focal point for further work within Chalmers on guidelines and recommendations towards the national goal of an open research system in 2026. As a first step, new guidelines and recommendations for open access to publications and proper management of research data have been prepared. Recently, Chalmers adopted a new 20-year strategy. As part of implementing this, plans are being set up for how to include the broader concept of Open Science in the updated Chalmers framework for ensuring the highest possible research quality, This work will be based on the SUHF recommendations and The National Roadmap for Open Science. **Sverker Holmgren, Head of Chalmers e-Infrastructure Commons**

Karlstad University (KAU) is developing an institutional Open Science culture through a range of initiatives, underpinned in the first instance by a university-wide policy and guidelines for managing research data and open access publications. The importance of open and transparent research is further highlighted in the university's principles for good research practice, which form part of KAU's comprehensive quality system. In 2022, the university management decided formally to focus on Open Science as a key institutional development area for the period 2023-2024. This strategic prioritisation addresses the Open Science recommendations set out by the Association of Swedish Higher Education Institutions' (SUHF), as well as the National Roadmap for Open Science, and ensures that KAU will consider and implement the measures needed for it to participate fully in the Open Science ecosystem. **Sofia Andersson, Research Advisor, Karlstad University**

Karolinska Institutet (KI) has a longstanding Open Access Policy and is working on complementing the general data management guidelines with an open data policy. An Open Science Working Group was established in 2022, and this has greatly increased the focus on Open Science at the university . The Association of Swedish HEI´s recommendations and **The National Roadmap for Open Science** is the starting point for the work. Being a medical university, Open Science, and in particular open data, puts extra emphasis on the balance between "as open as possible, as restricted as necessary". This means that a big effort is required to make sure that solutions for making data openly available and the guidance provided to the university's researchers meet all necessary legal requirements and at the same time offers possibilities to make data available, with the aim to have it all ready before 2026. **Cecilia Martinsson Björkdahl, Head of Unit, Karolinska institutet**

Mälardalen (MDU) strives to be a progressive and collaborative university where we together shape a sustainable future. To achieve this, MDU has over the past decade boosted its efforts considerably to promote a more open research culture as the norm. Back in 2012, a publishing policy was decided on in where it was recommended to promote and encourage Open Access. In the context of promoting Open Access publishing, the university library will fund the researchers' Open Access costs. A further stance on open science took place when the 2023 publishing policy was revised and updated. In the current publishing policy, Open Access is combined with Open Science in its entirety, and in addition, FAIR has become a key concept for how the university wants MDU's research to be managed and published. Yet another step towards Open Science took place in 2022 when MDU decided on a research data policy which states that research data must, as a general rule, be published as openly as possible, but as closed as necessary. The research data policy is supported by The Association of Swedish Higher Education Institutions´ (SUHF) National Roadmap for Open Science by clarifying the allocation of responsibilities between the university's support function and the researcher. This will enable research data to comply with FAIR and also that Open Science is implemented as part of the university's efforts for a sustainable future. **Ulrika Nyman, Librarian, Mälardalen University**

Stockholm University (SU) has decided on an overall policy for open science . The policy describes the university's overall goal in the transition to an open scientific system. Stockholm University promotes Open Science by means of a research and educational environment that favours, encourages and informs the public about Open Science as a practice. The general rule at Stockholm University is that research that is fully or partially publicly funded should, as far as possible, be open access. The policy is in line with the SUHF National Roadmap for Open Science and based on the eight recommendations in the roadmap. Within the university there is an ongoing work to develop and implement the infrastructure for providing the researchers with support and services throughout their whole research process. There is also an ongoing work to organise a local structure within the university to handle the transition to Open Science in a broader overall strategic way and connect the different levels of working groups and stakeholders within and outside of the university. **Sabina Anderberg, Senior Advisor, Stockholm University**

Umeå University (UMU) has a broad range of research, including medical science, social science, arts and humanities, natural science, and engineering. In its transition to Open Science, Umeå University considers the needs of its researchers, its duties as an authority, and important policy documents. These documents include, for instance, the research bills of the government from 2016 and 2020, and the National Roadmap for Open Science by the Association of Swedish Higher Education Institutions (SUHF). To facilitate putting Open Science into practice, the university has a policy for Open Access Publishing and research data management highlighting the importance of transparency in scientific research and good research practice. Open Access Publishing has become an established part of research at the university and work with giving access to research data follows the guideline "As open as possible and as restricted as necessary". Umeå University commits to Open Science as a member of EOSC Association and Swedish National Data Service consortium member. **Thomas Kieselbach, Research Coordinator, Umeå University**

Sabina Anderberg, Senior Advisor, Stockholm University, Sweden
Sofia Andersson, Research Advisor, Karlstad University, Sweden.

07.03.23, Sabina Anderberg, Sofia Abramson and Sofia Andersson (SE), "Upskilling Countries to Engage in EOSC - Sweden", https://forum.eosc.eu/message/6401f9dba01f114285427b8c

6. February/March 2023 updates from the Upskilling Countries TF

In our last two meetings in February and March, we welcomed 4 speakers:

- @ Isabel Caetano from the EOSC Association presented an overview of the activities of EOSC Focus Task 2.2 which focuses on regional collaboration. Her presentation is attached.
- @ Zisis Kozlakidis talked about 'Promoting Open Science from an institutional and inter-governmental perspective', outlining the work of the WHO- International Agency of Research on Cancer and also the BBMRI-ERIC.

- @ Jessica Margareta Lindvall outlined the work of the ELIXIR health sciences research infrastructure relating to EOSC
- @ Ioana Trif presented on Open Science policy and EOSC in Romania

Look out for more detail from our speakers in their posts on the forum shortly.

Our monthly presentations are **now open for any Task Force member to join** – **our next meeting with presentations is on 8th May 2023 at 2.30-3.30 CET**. Please email @ Neringa Jackevice: for more details.

Best wishes

Helen Clare (UK), on behalf of the Upskilling TF co-chairs
15.03.23, Helen Clare (UK), "February / March updates from the Upskilling Countries TF", https://forum.eosc.eu/message/6411e8985492878ebba82906

7. Open Science viewpoints from the WHO and IARC

The World Health Organization (WHO) believes that universal access to publicly funded research, including research data, is fundamental to tackling the public health challenges of the 21st century. Therefore, the WHO's policy on open access seeks to ensure that, as a fundamental part of its mission, the published outputs of its activities are freely accessible and reusable by the public.

The International Agency for Research on Cancer (IARC/WHO) is the cancer agency of the WHO, with the objective to promote international collaboration in cancer research, is following a similar approach. IARC/WHO is committed to the dissemination of its research. IARC's Open Access policy is separate yet aspires to the same ideals as WHO. In keeping with this commitment, the Open Access Policy is a reflection of the Open Science commitment and demonstrates the value the Agency places on its research and the unrestricted dissemination of its research outputs through publication. Open Access to IARC research findings will ensure that key stakeholders or any other interested constituencies are able to access, use and benefit from its work. Open Access will also benefit the Agency and its scientists by the greater visibility and impact of the research produced by IARC scientists and their collaborators.

Overall, the vision of Open Science from these two key global and intergovernmental organizations is to make scientific processes more open and effective and to use both scientific excellence and open innovative and applied research to address current challenges, which are very comprehensively presented in the Policies of the EU Commission and in the framework of the United Nations' Global Sustainability Goals (UN SDGs).

Publications
Since 12 November 2016, all WHO publications have been published under the CC Attribution-Non-Commercial-Share Alike 3.0 IGO () licence. This licence allows for any non-commercial

use, without the need to obtain permission from WHO. Adaptations and translations are also permitted, as long as the adapted work is published under the same or a similar licence. From 1 January 2021, all WHO authored and WHO-funded articles that are submitted for publication in peer review journals must be published in an open-access journal or on an open access platform.

While currently holding a different policy, the IARC/WHO aim is to eventually harmonize its approach with the overall WHO policy. To that end, IARC/WHO strongly encourages its authors to: i.) Publish in open access journals; ii.) Publish in subscription-based journals under the Open Access article option; iii.) Deposit an electronic version of the final accepted manuscript (postprint) in PubMed Central or an appropriate institutional repository immediately upon acceptance. [Metadata must be exposed from time of deposit and full text no later than 12 months]; and iv.) Publish under a license (such as the Creative Commons IGO license) that accords with the principle of Open Access being free of most copyright barriers.

Data and Services in Place

According to IARC's Mid-Term Strategy (2021-2025), Open Access will be instituted as a cornerstone of Open Science, and IARC will increasingly engage in open research data sharing, aimed at facilitating and maximizing data reuse. A new data sharing policy will facilitate sharing IARC's research data widely, while protecting the interests of IARC/WHO, its Participating States, and partners as well as the rights of individuals, including ethical and legal considerations. The access to data will also align with the FAIR principles (findable, accessible, interoperable and reusable), that they have to be preserved and, whenever possible, made openly accessible to the public.

Additionally, IARC is developing increasingly complex data analyses tools and will share these resources as open-source code, thereby supporting capacity-building for cancer research, as well as transparency and reproducibility. Precision research is based on the analysis of well-characterized, research-ready samples combined with data and/or on the biological validation of data-driven observations. The concept of Open Access to scientific resources will extend to IARC's biobank, i.e., its collections of biological samples and linked data, under a transparent governance and accessibility framework. To ensure the sustainability of the biobank's operations, selected samples may be made available on a cost recovery basis.

Open Learning

According to the UNESCO 2021 recommendation on Open Science, it is underlined that "access to scientific knowledge should be as open as possible", thereby inextricably linking knowledge dissemination to open science, open data, and an open society and open science. IARC/WHO remains at the forefront of supporting knowledge dissemination by offering learning content in IARC's priority areas (such as cancer surveillance, early detection, cancer epidemiology, exposome, etc.) increasingly through e-learning, to support the lifelong learning of researchers and health professionals. One such recent example is the "Swamped?" series of short-videos on FAIR data, a data management survival guide for scientific researchers/

Furthermore, a partnership with the new [WHO Academy](#) in Lyon is expected to result in additional cutting-edge e-learning modules and training events as of the end of 2023.

Measurements:

One of the main measurements of the Open Science implementation at IARC/WHO will be the increase of international scientific papers published in Open Access journals. This parameter is already measured and complemented by internal informational sessions, training the staff on the significance and impact of Open Science and Open Access publications.

Zisis Kozlakidis, Head of Laboratory Services and Biobanking at IARC/WHO

22.03.23, Zisis Kozlakidis (FR), "Open Science viewpoints from the WHO and IARC", https://forum.eosc.eu/message/641ac406b92d6e6d31ea79e8

Disclaimer: Where authors are identified as personnel of the International Agency for Research on Cancer/WHO, the authors alone are responsible for the views expressed in this article and they do not necessarily represent the decisions, policy or views of the International Agency for Research on Cancer/WHO.

8. ELIXIR-EOSC presentation (13/03/2023)

As you probably know, the Task Force **"Upskilling countries to engage in EOSC"** have monthly meetings with **presentations open to all Task Force members in the EOSC ecosystem**. The aim is to share and discuss amongst EOSC friends and to pick up on good practices to be implemented back to your community and organisation. Open Science is, as we all know, a practice of diverse and broad implementation. Therefore, presentations from various countries, disciplines, projects and organisations are of high value for the raising awareness of EOSC and Open Science.

On **March 13th I @ Jessica Margareta Lindvall** presented the work of **ELIXIR and EOSC**. ELIXIR is a pan-European Research Infrastructure in the field of life sciences, which is dedicated to supporting researchers and scientists to manage, share and analyze large amounts of biological data. It is a non-profit organization that was founded in 2013 and currently has 25 member countries.

In recent years, ELIXIR has been actively involved in the European Open Science Cloud (EOSC) initiative. As part of the **ELIXIR-EOSC strategy** (published in 2022: https://doi.org/10.5281/zenodo.7120997), ELIXIR is working to integrate its resources and services into the EOSC ecosystem. **Fostering Open Science culture is a crucial component of ELIXIR**, which involves promoting the values of transparency, accountability, and collaboration across all aspects of the research process. ELIXIR also engages with various stakeholders to raise awareness of the benefits of Open Science and to encourage its adoption. The ELIXIR-EOSC strategy includes developing and implementing standards for data and metadata, building interoperable tools and services, and establishing governance and sustainability models to ensure long-term access to ELIXIR resources.

One of the **key contributions of ELIXIR to the EOSC is the establishment of the ELIXIR Core Data Resources**. These resources provide access to data sets, tools and services in areas such as genomics, proteomics, metabolomics, and bioinformatics. ELIXIR is also working to ensure that these **resources are interoperable with other data repositories and services in the EOSC**.

Another important aspect of ELIXIR's involvement in the EOSC is **the development of training and support programs for researchers and scientists**. ELIXIR has a range of training services and resources together with the ELIXIR training platform is dedicated to provide courses, workshops and webinars on topics such as data management, training skills, data analysis, and visualization. In addition, ELIXIR also provides user support, infrastructure and training through its national nodes, further disseminating the services and resources to the national institutes.

If you are interested in accessing the presentation (pdf) please have a look (https://doi.org/10.17044/scilifelab.22323625.v1)

27.03.23, Jessica Lindvall (SE), "OS, EOSC and ELIXIR", https://forum.eosc.eu/message/6421307899c48fb4b98b058b

9. Open Science Policy & EOSC in Romania

Executive Agency for Higher Education, Research, Development and Innovation Funding (UEFISCDI)

UEFISCDI is responsible for funding of higher education and is the main funding agency for competitive research, development and innovation (RDI) in Romania. The Executive Agency is also policy adviser for higher education and RDI to the Ministry of Education and Ministry of Research, Innovation and Digitization.

Through the Open Science Knowledge Hub (OSKH) which was created in 2018, UEFISCDI is the main connector of the national landscape to the main european and international initiatives driving open science: OSKH is the Romanian OpenAIRE NOAD and the RDA Node Romania, a member in the EOSC Association, for open science policies support OSKH collaborates with Science Europe and Council for National Open Science Coordination - CoNOSC. OSKH was also the national representative within Policy Support Facility Challenge - Mutual Learning Exercise - Citizen Science Initiatives - Policy and Practice organized by European Commission. UEFISCDI is the signatory of the Action Plan for Diamond Open Access developed by ANR, cOAlitia S, OPERAS and Science Europe, an initiative to support Diamond Open Access (DOA) publishing, a model in which journals and platforms do not charge fees to either authors or readers. UEFISCDI together with 21 institutions from Romania are the signatories of the Coalition for Reforming Research Assessment - CoARA.

UEFISCDI is partner in the following Horizon Europe projects dedicated to Research Career Framework, open science, EOSC, FAIR and research assessment: FAIR-IMPACT, OPUS (Open

[Universal Science)](#), GraspOS: next Generation Research Assessment to Promote Open Science
and SECURE - The Sustainable Careers for Researcher Empowerment.

Apart from the role of research funder, UEFISCDI coordinated and developed the National
Strategic Framework for Open Science 2022-2030 and provides support on implementing the
transition to open science at national level. In Romania the Open Science Knowledge Hub is
the main contact point for open science in terms of policy advice, engagement, capacity
building actions, and being the national support desk for open science. UEFISCDI through
OSKH provides support in terms of dissemination related to EOSC and organizes events to
raise awareness and promote EOSC support and benefits.

National Strategic Framework for Open Science 2022-2030

The [National Strategy on Research, Innovation and Smart Specialization for 2022-2027](#) was
adopted by Governmental Decision no. 933 of 20 July 2022. The actions dedicated to open
science included within the Objective 1.2. Ensuring the transition to open science and
facilitating the road towards excellence in scientific research are the following:

- ensuring open access (mandatory) to all the publicly funded research publications
  (ensuring the eligibility of the necessary costs);
- introducing DMPs requirements (ensuring FAIR data and open access to research data
  should be promoted according to the principle as open as possible as closed as
  necessary and the costs associated with the research data management will be
  considered eligible costs; the research infrastructures should receive support for the
  development and implementation of DMPs associated with experiments);
- promoting and supporting the existing and new infrastructures, digital repositories and
  services that supports open science to ensure the long-term storage of open access
  publications and research data and onboarding into disciplinary databases and EOSC;
- citizen science - supporting projects that encourage citizen involvement in various
  stages of the research process, such as data collection;
- establishing and implementing a national support mechanism for the transition to open
  science;
- developing of open science specific skills and competences of researchers and
  personnel of academic and research institutions;
- adoption of new research and career evaluation metrics.

The provisions of the Objective 1.2. Ensuring the transition to open science and facilitating the
road towards excellence in scientific research (included in the National Strategy on Research,
Innovation and Smart Specialization for 2022-2027) are detailed and specific objectives and
actions have been proposed in the [White Paper on the Transition to Open Science (2023- 2030)](#)
which was published on December 21, 2022 and which was developed within the project
[Increasing the capacity of the RDI system to respond to global challenges. Strengthening the](#)
[anticipatory capacity to develop evidence based policies – SIPOCA592 (2019-2023)](#) financed
by ESIF1 and implemented by the Ministry of Research, Innovation and Digitization and
UEFISCDI.

The White Paper on the Transition to Open Science (2023-2030) presents the vision, the
targets for achieving the vision, the strategic objectives and necessary actions for the
implementation of open science vision in Romania, in alignment with international and
european open science policies and recommendations. The White Paper on the Transition to
Open Science (2023-2030) represents the final form of the Strategic Document on the
Development of Open Science in Romania, developed on the basis of the dialogue support

document - the [Green Paper on the transition to Open Science 2022-2030](#) which was put in public consultation in the period August 16 – September 30, 2022.

8 Strategic Objectives have been included in the White Paper on the Transition to Open Science (2023-2030), with related actions proposed to be implemented at national level:
1. Ensuring open access to scientific publications resulting from publicly funded research;
2. Research data management and ensuring open access to research data;
3. Ensuring transparency and fairness of open access publishing costs and those of access to international publications;
4. Developing the infrastructure and services for open science;
5. Establish a long-term governance for the transition to open science and EOSC;
6. Developing the skills needed to implement open science;
7. Adapting the process of research assessment and rewarding in the new context of open science;
8. Citizen science.

The White Paper on the Transition to Open Science (2023-2030) was coordinated and developed by the experts involved in the Open Science Knowledge Hub – UEFISCDI, as part of the ESIF funded project mentioned above. The development of the National Strategic Framework for Open Science is based on a consultation process initiated by UEFISCDI in 2020 and organized in several stages (see picture below), through a series of workshops dedicated to identifying Romania's strategic options on open science, dissemination events, as well as two national surveys on the understanding of the needs and level of familiarity with the open science practices among the Romanian academic and research community. The National Strategic Framework for Open Science is also based on open science analyzes and supporting documents which are published on the [national portal dedicated to open science](#). An important milestone in this process was the establishment of the National Open Science Cloud Initiative ([RO-NOSCI](#)) within [NI4OS Europe - National Initiatives for Open Science in Europe](#) project.

[The National Plan for Research, Development and Innovation 2022-2027](#) (was adopted by the Governmental Decision no. 1188 of 29 September 2022) is the main instrument for implementing the [National Strategy on Research, Innovation and Smart Specialization for 2022-2027](#). The National Plan includes RDI financing programs and types of projects proposed to be financed and which support open science; open science is one of the ten principles mentioned in the plan.

Another instrument through which open science activities can be financed is the [Fund for the Institutional Development of the public universities](#), a project competition organized at the beginning of each year by the Ministry of Education. The national Fund for the Institutional Development of the public universities has a dedicated action (starting 2022) to support universities in order to develop their institutional capacity to implement open science practices. In addition, open access publication and facilitating access to modern/ updated databases that provide support in the research activity is supported.

Romania participation in the EOSC Association

The National Institute for Research and Development in Informatics – ICI Bucharest, the Executive Agency for Higher Education, Research, Development and Innovation Funding (UEFISCDI) and Politehnica University of Bucharest (UPB) are members of the EOSC Association and the National Institute for Research and Development in Informatics is the Romanian mandated organization in the EOSC Association.

The representatives of UEFISCDI are involved in the following EOSC Task Forces: Researcher Engagement & Adoption, Upskilling Countries to Engage in EOSC and Research Careers, Recognition, and Credit. The representative of ICI Bucharest is part of the EOSC Task Force Rules of Participation and Compliance Monitoring and the representative of Politehnica University of Bucharest is involved in the EOSC Task Force Infrastructures for quality research software.

National Open Science Cloud Initiative - RO-NOSCI

On the 1st of July, 2021, the National Open Science Cloud Initiative - RO-NOSCI has been established by UEFISCDI, together with the National Institute for Research and Development in Informatics - ICI Bucharest - members of the EOSC Association, in the context of the project NI4OS Europe - National Initiatives for Open Science in Europe. The initiative is coordinated by UEFISCDI, ICI Bucharest and the National Research-Development Institute for Physics and Nuclear Engineering Horia Hulubei - IFIN-HH.

IFIN-HH is one of the partners within the project - EGI Advanced Computing for EOSC coordinated by the EGI Foundation with a mission to empower researchers from all disciplines to collaborate in data and compute intensive research through free at point of use services.

RO-NOSCI is an ecosystem dedicated to open science and EOSC and has a vital role in supporting the EOSC vision at national level. The initiative represents a coalition of organizations at national level without legal personality, functioning based on a Memorandum of Understanding; membership does not imply any financial commitment.

The aim of the initiative is threefold: establishing the national cloud for open science, in the context of the development of the EOSC ecosystem; optimizing and coordinating activities on onboarding national infrastructures and services in the EOSC; facilitating access of the academic and research community to EOSC resources and promoting and implementing open science policies at national level.

The process of joining RO-NOSCI is open and applications for membership are submitted to the RO-NOSCI Executive Committee via an online form. RO-NOSCI has currently 27 members (25 members and 2 observers): large universities from Bucharest and other academic centers from Romania, research performing organizations in various domains (e.g. informatics, nuclear physics, marine geology and geo-ecology, earth physics, chemical-pharmaceutical), UEFISCDI, the main funder of competitive research in Romania and policy adviser for RDI and open science, the Authority for Digitalization of Romania and an emergency clinical hospital. All current Romanian members of the EOSC Association are part of RO-NOSCI. At the end of February 2023, the second General Assembly of the National Open Science Cloud Initiative took place.

Further plans include promoting EOSC support and benefits through the National Open Science Cloud Initiative and implementing the activities established by the Memorandum of Understanding for RO-NOSCI signed by the coordinators mentioned above.

National portal dedicated to open science

The national portal dedicated to open science is developed by the experts involved in the Open Science Knowledge Hub – UEFISCDI, as part of the ESIF funded project mentioned above (Activity A4.1 "Development of the strategic and functional framework of open science and open access"). The portal was launched on December 21, 2022 and its aim is to connect and

actively engage the Romanian community to the open science dynamics and capacity building opportunities and also to be a resource for Open Science in Romania. The National Open Science Cloud Initiative - RO-NOSCI has a dedicated section within the national portal. In the next period, the national portal dedicated to open science will be further developed by adding new sections that will address open science topics (e.g citizen science, FAIR data, EOSC, research data management).

National network of open science experts

Through the [BrainMap](#) platform (the online community of researchers, innovators, technicians and entrepreneurs with over 50K accounts) developed by UEFISCDI, OSKH will initiate the process of establishing the national network of open science experts. The purpose of this network is to support open science dissemination actions and the development of open science competences at the national level. This development will support a close dialogue on open science with the researchers and other relevant stakeholders in the RDI community.The Brainmap platform is used for the selection of evaluators of research projects financed from the public funds; the platform is also used for the selection of members of national councils with responsibilities in the field of research and education; researchers can be searched by expertise, name or other keywords.

Open access portal for doctoral theses

Starting February 2020 a national [open access portal for doctoral theses](#) has been available (it stores over 13000 theses from 2016 onwards). The license of all the doctoral theses that are published within the national open access portal is CC BY-NC-ND 4.0.

Law no. 179/2022 on open data and the reuse of public sector information

In June 2022, the Romanian Parliament approved the Law no. 179/2022 on open data and the reuse of public sector information. The Law includes provisions (art. 13) on research data that should be FAIR, open access policies should respect the principle of openness by default and open access to research data should be in accordance with the principle as open as possible and as closed as necessary, taking into account intellectual property rights, protection of personal data and confidentiality, security and legitimate commercial interests. This law transposes at national level the European Directive from 2019 on open data and the reuse of public sector information.

Law no. 25/2023 on the voluntary integration of research, development and innovation organizations from Romania in the European Research Area

In January 2023, the Romanian Parliament approved the Law no. 25/2023 on the voluntary integration of research, development and innovation organizations from Romania in the European Research Area. Thus, the performance evaluation for the integration of the activity of research organizations from Romania into the European Research Area takes into account several indicators (art. 19), among which is the promotion of open science. The other indicators take into account the productivity of the research and development activity in

relation to the available resources; the socioeconomic impact of the research results; the level of specialization and the professional prestige of the research and development staff working in the organization, the extent to which the organizations' activity responds to public interests of national or local importance, the level of development of the research infrastructure and so on. For further information on the Open Science Policy & EOSC in Romania please visit the national portal dedicated to open science or contact Open Science Knowledge Hub Romania (part of UEFISCDI) open-science@uefiscdi.ro.

This report summarizes the main elements of the presentation given on 13th of March 2023 by **Ioana Trif** from the Executive Agency for Higher Education, Research, Development and Innovation Funding (UEFISCDI, Romania), member of the EOSC Association Task Force Upskilling countries to engage in EOSC.
25.04.23, Ioana Trif (RO), "Open Science Policy & EOSC in Romania", https://forum.eosc.eu/message/6447745ff08eec23d9077bae

10. EOSC and Open Science in Social Sciences and Humanities

Open Science and Scientific Domains: A Key Point

Throughout the period 2022-2023, the members of the EOSC Task Force "Upskilling Countries to Engage in EOSC" have been actively monitoring the adoption of Open Science and EOSC in different countries, as well as within specific scientific domains. This blog specifically highlights the significance of Social Sciences and Humanities (SSH) European Research Infrastructures (RIs) in fostering Open Science identity in their diverse subdomains, for more than twenty years. They entered the EOSC Association ready to embrace Open Science, while preserving their core disciplinary skills. One notably needs to get the researchers actively engaged in Open Science in order to establish effective research infrastructures that adhere to the FAIR data principles. In that purpose, European research infrastructures play a crucial role in connecting researchers and domains and in fostering the multidisciplinary work of the EOSC Association.

Building SSH Research Infrastructures and Communities

The digital turn has been actively considered by the SSH domains at the turn of the 21st century. From 2011 to 2020, the major SSH European RIs were established, building upon a decade of collaborations, and played a significant role in the establishment of the EOSC.

The first ever created ERIC (European Research Infrastructure Consortium) was an ERIC in the field of SSH, called SHARE, established in March 2011. In short, SHARE, the Survey of Health, Ageing and Retirement in Europe, "is a research infrastructure for studying the effects of health, social, economic, and environmental policies over the life-course of European citizens and beyond. From 2004 until today, 530,000 in-depth interviews with 140,000 people aged 50 or older from 28 European countries and Israel have been conducted. Thus, SHARE is the largest pan-European social science panel study providing internationally comparable longitudinal micro data which allows insights in the fields of public health and socio-economic living conditions of European individuals, both for scientists and policy makers."

The second SSH ERIC, CLARIN, was created in 2012. In short, CLARIN, Common Language Resources and Technology Infrastructure, "is a digital infrastructure which provides easy and sustainable access to a broad range of language data and tools to support research in the

humanities and social sciences, and beyond. It provides access to multimodal digital language data (text, audio, video) and advanced tools with which to explore, analyze or combine these datasets. [...] The Open Science agenda and the FAIR data principles lie at the heart of CLARIN's values. The interoperability of data and services across the CLARIN community has enabled large-scale data sharing and growing reuse of language resources."

The third SSH ERIC, ESS, was created in November 2013. In short, ESS, the European Social Survey, "is an academically driven cross-national survey that has been conducted across Europe since its establishment in 2001. Every two years, face-to-face interviews are conducted with newly selected, cross-sectional samples. The survey measures the attitudes, beliefs, and behaviour patterns of diverse populations in more than thirty nations."

The fourth SSH ERIC, DARIAH, was created in August 2014. In short, DARIAH, the Digital Research Infrastructure for the Arts and Humanities, "aims to enhance and support digitally enabled research and teaching across the arts and humanities. DARIAH is a network of people, expertise, information, knowledge, content, methods, tools, and technologies from its member countries. It develops, maintains, and operates an infrastructure in support of ICT-based research practices and sustains researchers in using them to build, analyze and interpret digital resources. By working with communities of practice, DARIAH brings together individual state of-the-art digital arts and humanities activities and scales their results to a European level. It preserves, provides access to, and disseminates research that stems from these collaborations and ensures that best practices, methodological and technical standards are followed."

And finally, the fifth SSH ERIC, CESSDA, was created in 2015. In short, CESSDA, the Consortium of European Social Science Data Archives, "provides large-scale, integrated, and sustainable data services to the social sciences. It brings together social science data archives across Europe, with the aim of promoting the results of social science research and supporting national and international research and cooperation. [...] CESSDA builds trust in social science research by ensuring its quality and that it is available for future research. By acquiring the status of a trust repository, CESSDA Service Providers demonstrate their reliability to researchers as well as national and international research funders."

These five SSH ERICs were all established within a few years (2011-2015) but they are all built upon long-standing partnerships. Regarding ESS, for example, the first comparative European Social Survey at the European Science Foundation (ESF) was conducted in 1995 under the leadership of Sir Roger Jowell and Max Kaase. As for SHARE, the first in-depth interviews were conducted in 2004, as mentioned earlier. The key to the success of these RIs is to represent a 20-year history of collaborations. Alongside with the other European RIs, they paved the way for the multidisciplinary profile of EOSC, as scientific and related-domain communities are fundamental in supporting the daily work and development of EOSC.

It should also be noted that the initial definition of these five ERICs was based on the typical domain distribution between Humanities (CLARIN, DARIAH) and Social Sciences (SHARE, ESS, CESSDA). The impetus to consider SSH together in research infrastructures was born simultaneously during the preparation of EOSC, on the one side, and during the preparation of a new SSH European research infrastructure, OPERAS, on the other side. In short, OPERAS, the Open scholarly communication in the European Research Area for Social Sciences and Humanities, "is the research infrastructure supporting open scholarly communication in the social sciences and humanities (SSH) in the European Research Area. Its mission is to coordinate and federate resources in Europe to efficiently address the scholarly communication needs of European researchers in the field of SSH. OPERAS' aim is to make

Open Science a reality for research in the SSH and achieve a scholarly communication system where knowledge produced in the SSH benefits researchers, academics, students and more generally the whole society across Europe and worldwide, without barriers." It was created as an AISBL in 2020. In addition to the creation of OPERAS, a SSH dynamic was also launched during the preparation phase of the EOSC Association, as the next section explains.

The Impact of EOSC on SSH: the Birth of SSHOC

The European Commission has proposed to create a European Open Science Cloud (EOSC) in May 2015, coinciding with the launch of the fifth SSH ERIC, CESSDA. This marked an important milestone, but it also signaled the beginning of a new chapter with EOSC. Its aim is to "*federate existing research data infrastructures in Europe and realize a web of FAIR data and related services for science, making research data interoperable and machine actionable following the FAIR guiding principles*." In this initial phase, the Commission invested around € 320 million to start prototyping the EOSC through project calls, and notably this one entitled "Connecting ESFRI infrastructures through Cluster projects". This H2020_INFRAEOSC-04-2018 project has launched five preparatory clusters in EOSC: SSHOC, ESCAPE, EOSC-Life, ENVRI-FAIR, and PaNOSC.

The Social Sciences and Humanities Open Cloud (SSHOC) was born in this framework, as an H2020 project led by CESSDA, for a length of 28 months until April 2022. This project has resulted in the formation of a strong cluster, highlighted by the opening of the SSH Open Marketplace, the first research tool providing access to resources, services, training materials, workflows and datasets in SSH: https://marketplace.sshopencloud.eu. SSHOC represents an unprecedented turn in the history of SSH, whose effects are just starting to interact with the general development of scientific epistemology. SSHOC stakeholders have been so convinced by the project's results that they founded a consortium in 2022, called the SSH Open Cluster, with a first General Assembly in April 2023. Notably among the Consortium members are the five SSH ERICs and OPERAS.

The self-consciousness of the SSH has been fostered by the SSHOC project. It is one of the strongest clusters supported by the call "Connecting ESFRI infrastructures through Cluster projects". This self-consciousness is evident in the EOSC Marketplace Resources tool, which highlights the future challenges for SSH in EOSC, as illustrated in the final point of this blog.

SSH in EOSC Marketplace

The EOSC Marketplace Resources tool is a rich platform in constant development. Let us observe how the scientific domains, and particularly the SSH domains, are visible on it. The filters on the first general webpage – "all catalogs" – do not indicate the scientific domains or the research communities. To find this information, one must navigate to the different sections of the webpage. The section "Digital Humanities and Cultural Heritage" appears in the research community section of the Data Catalog and the Software Catalog. In the Services Catalog and the Data Sources Catalog, one finds the mention of the scientific domains in the filters, but with only three choices: Humanities, Social Sciences and Generic. Beyond the fact that the tool is of course in development, it is not surprising to find the SSH domains clearly present, since the resources of the SSH Open Marketplace discovery platform have been integrated into the EOSC Marketplace platform.

There is one filter space in which the different scientific domains are listed: the Publications Catalog. But even here, the SSH domains are at the top of the list in terms of the number of

publications: 623 for SSH, vs 195 for natural sciences or 164 for engineering and technology. What does it mean? It is again an efficient result of the SSH Open Marketplace project, fostered by the conviction of SSH researchers and stakeholders that it matters to make their identity and core skills visible in the multidisciplinary context of EOSC.

Until now, SSH has been successful in building a common scientific domain identity and in promoting it in EOSC through SSHOC. SSHOC, along with the SSH spirit, serves as a good prototype to consider the role and position of the scientific domains in EOSC. Clear identities often rely on an awareness of history. Looking back at the emergence of SSHOC highlights the crucial role that SSH ERICs played in taking this new step. The memory of the construction of the ERICs and other European RIs belongs to the history of EOSC. Scientific domains and strong partnerships with higher education institutions are key points in the development of EOSC.

Claire Clivaz, Member of the EOSC Association Task Force "Upskilling Countries to Engage in EOSC" Head of Digital Humanities +, SIB (Lausanne, CH) 18th of August 2023

18.08.23, Claire Clivaz (CH), "EOSC and Open Science in Social Sciences and Humanities", https://forum.eosc.eu/message/64df816eb18e00ce051d79ab

NB: I thank my colleagues **Cristina Grisot** (DARIAH-CH & CLARIN-CH) and **Elisa Nury** (DH+, SIB) for their suggestions on this text.

11. Upskilling Task Force supporting Widening countries

Earlier this year, the Upskilling Countries to Engage in EOSC Task Force began a series of activities aimed at supporting Widening and Associated Widening countries. Widening countries are countries with low participation rates in FP7 and H2020 projects and Horizon Europe Widening actions aim to increase their participation. The EOSC Association suggested this path as a way our TF could add value.

Roadmap for EOSC and Widening countries

Our first activity, led by TF members Jiri Marek and @ Marek Cebecauer from the Czech Republic, was the development of a road map for Widening Countries (informally, we've been calling this a 'mini-MAR'). The purpose of this document was to provide a gap analysis identifying areas for development in certain European countries towards the successful implementation of EOSC and provide recommendations to address these points, which could be supported in future funding calls. We will publish the 'mini-MAR' as part of the Upskilling TF final report.

Presentation at EOSC Future North Macedonia event

We took the opportunity to coordinate our activities with the EOSC Future project which ran an EOSC Future Training Workshop in Ohrid, North Macedonia in September. Task Force memberLouise BezuidenhoutLouise Bezuidenhoutwas involved in delivering this training for EOSC Future and facilitated a session where Jiri presented remotely on the mini-MAR.

Louise said "We had a really productive discussion in the room following Jiri's talk. There was a high level of interest in the mini-MAR and a great deal of enthusiasm to contribute".

Sponsored places at the EOSC Symposium

As part of the funding given to the TF by the EOSC Association, we offered sponsored online places at the EOSC Symposium to attendees of the EOSC Future workshop. Thirty-one attendees took up our offer of a place. We sent out a follow-up survey to find out how useful attendees found the event, what they were interested in and what else could be done to support their countries to engage in EOSC.

We had 9 respondents from 3 countries (Albania, North Macedonia and Kosovo) with one describing attendance as a 'great experience'. There was interest in all sessions but particularly the technical aspects of EOSC, with a desire for case studies and more in-depth discussion on data management and research methodologies. Training, cooperation, collaboration and awareness campaigns were highlighted as ways to improve engagement with EOSC in their countries.

Collaboration with Polish Tripartite event

Through our liaison with @ Isabel Caetano from the EOSC Focus project, we were connected with the organisers of the upcoming Polish EOSC Festival Tripartite event in November, which has a focus on Widening participation countries. Natalia Galica from NCN, the National Science Center in Poland, came to our October meeting to outline the programme and invite TF members to attend. We look forward to contributing to the discussions.

Next steps

We're waiting for final feedback on the 'mini-MAR' for Widening countries which we aim to publish with our final Task Force report before the end of the year. We want to wait for the outcomes of the Polish Tripartite event and the Task Force review, and we hope to be involved in further activities in this area.

17.10.23, Helen Clare (UK), "Upskilling Task Force Upskilling Task Force supporting Widening countries", https://forum.eosc.eu/message/653b81572d533ad6e558400c

Recommendations for Widening Countries and Associated Widening Countries for 2025 and 2026-2027

Authors:

Jiří Marek
Marek Cebecauer

+ comments from the other TF Upskilling members + Ognjen Prnjat (GRNET)

Table of contents

1. Recommendations landscape

Purpose of the document:

A gap analysis points to weak positions in certain European countries towards the successful implementation of EOSC. This document is a recommendation to EOSC-A that is intended to raise topics for funding in the 2025-2027 Horizon Europe funding period to address the needs of Widening and Associated Widening countries.

Basic focus of Upskilling TF 'Mini-MAR' task

The aim was to create project opportunities to grow and strengthen the EOSC engagement in underrepresented countries

To be able to do that, the following tasks were carried out:
- Assessed Widening Work Programmes 2021 – 2024 (calls and awarded projects)
- Mapped against EOSC related needs / EOSC-A representation / ERA Action 17 scope
- Identified needs and gaps for WP (2025) and WP 2026-2027
- Consulted with EOSC-A to draft a Widening countries / Upskilling 'Mini-MAR' (multi-annual roadmap)

Following approval of the approach with EOSC-, the TF should engage participants for future project consortia

Analysis

Desk research analysis for these recommendations was performed on following documents:
- [EOSC-A Tripartite Collaboration Descriptions of Widening Countries and Associated Countries (where available)](#)
- [Horizon Europe Work Programme 2021-2022: 11. Widening participation and strengthening the European Research Area](#)
- [Horizon Europe Work Programme 2023-2024: 11. Widening participation and strengthening the European Research Area](#)
- [EOSC Multi-Annual Roadmap (MAR) 2025 and 2026–2027 proposal](#)
- [ERA Policy Agenda – Action 17](#) + [The RM-ROADMAP Ambassador network](#)
- [Lund Declaration on Maximising the Benefits of Research data](#)
- [Horizon Europe Widening - Who should apply](#)
- [NOSCI definition and stakeholders map from NI4OS project](#) + [NI4OS project final review](#)

ERA Action 17: Research Management Initiative

Linkage to ERA Action 17 Research Management Initiative - detailed description:

This action aims to enhance the strategic capacity of Europe's public research performing and funding organisations. This is considered an important challenge for the European R&I system because of the uneven distribution of research management communities and expertise across the ERA. The action consists of various sub-actions:

- UPSKILLING: improve training and skills development of research management staff

- RECOGNITION: contribute to the professionalisation of the continuously evolving, multi-faceted role of the research management profession across the ERA

- NETWORKING: support networking of research managers and best practice exchange via cross-border networks in the various dimensions of research management

- CAPACITY BUILDING: reinforce research management capacity across the entire ERA, notably supporting organisations in regions of lower R&I intensity.

2. Rationale for recommendations

As stated in the recently adopted Lund Declaration on "Maximising the Benefits of Research Data" agreed during the Swedish Presidency of The Council of Europe (June 20, 2023): "*Limitations on access to reusable research data also create barriers to innovation, competitiveness, and indirectly increase costs to society at large as returns on investments in R&I decrease. Thus, there are scientific and economic imperatives to maximize the utility and reusability of research data and other digital outputs.*"[1]

This call on fostering access to reusable research data is closely linked to the development and implementation of the European Open Science Cloud (EOSC) initiative and its long-term goals, as it is stated in the Strategic Implementation Plan: "*EOSC should be a federation of existing and planned research data infrastructures adding a soft overlay to connect them and making them operate as one seamless European research data infrastructure.*"[2]

Both the Lund Declaration and the Brno Declaration on Fostering a Global Ecosystem of Research Infrastructures[3] state the crucial importance of Research Infrastructures (RIs) as a basis for implementing Open Science practices.

From this perspective, it is necessary to acknowledge that the distribution of RIs is uneven between Widening (+ Associated Widening[4]) countries and Non-Widening countries of the Horizon Europe program.[5] Thus, for the Widening (+ Associated Widening) countries, building the "data layer" envisioned by the EOSC implementation on existing research infrastructures is more complicated. In addition, the distribution of high-performance computational resources and supercomputers in Widening (+ Associated Widening) countries and non-widening countries of e.g., EuroHPC JU, somehow also mirrors that of RIs (not completely the same, but somehow similar).

---

[1] https://swedish-presidency.consilium.europa.eu/media/5wehfvzx/2023-06-20_eu2023_maximising-the-benefits-of-research-data_declaration.pdf

[2] https://op.europa.eu/en/publication-detail/-/publication/78ae5276-ae8e-11e9-9d01-01aa75ed71a1/language-en

[3] https://www.esfri.eu/latest-esfri-news/brno-declaration-ris

[4] Also known as: "associated countries eligible for hosting Widening coordinator"

[5] https://roadmap2021.esfri.eu/projects-and-landmarks/explore-the-map/

Definition of Widening, Associated Widening, and Non-Widening countries:

The distribution of countries between Widening countries, Associated Widening countries, and Non-Widening countries is as follows:

Widening countries: *Bulgaria, Croatia, Cyprus, Czech Republic, Estonia, Greece, Hungary, Latvia, Lithuania, Malta, Poland, Portugal, Romania, Slovakia, Slovenia*

Associated countries eligible for hosting widening coordinator (Associated Widening countries): *Albania, Armenia, Bosnia and Herzegovina, Faroe Islands, Georgia, Kosovo, Moldova, Montenegro, Morocco, North Macedonia, Serbia, Tunisia, Turkey, Ukraine*

Non-Widening countries: *All the EU members and associated states not mentioned above, and non-associated third countries.*

The above mentioned situation creates a distinct starting landscape for Widening (+ Associated Widening) countries towards implementing EOSC in the coming years. Thus, there is a need for a different approach to support the development of the EOSC ecosystem in these countries.

The Widening (+ Associated Widening) countries could be divided into four categories:

1. Countries familiar with leading some RI **and** have at least one national e-infrastructure (Portugal, Czech Republic, …) and have EOSC-A Mandated Organisation.
2. Countries familiar with leading some RI **or** have at least one national e-infrastructure (Romania, Poland, …) and have EOSC-A Mandated Organisation.
3. Countries that are part of some RI or e-infrastructure, have a national contact point for Open Science (Slovakia, North Macedonia…) and have EOSC-A Mandated Organisation
4. Countries with RI or e-infrastructure experience but without EOSC-A Mandated Organisation (Cyprus, Faroe Islands, Georgia, Bosnia and Herzegovina, Serbia, Ukraine, …)

Disclaimer: This categorisation is only created to indicate that some differences exist between Widening (+ Associated Widening) countries in their possible uptake of EOSC implementation. The EOSC-A TF Upskilling has to perform more analysis to make this division more robust and based on relevant data. This could be considered as a 0.5 version of this categorization, and for now, it mainly serves illustrative purposes.

3. Recommended actions

3. A The activities to be supported (scope)

1. **2025: Support for new and already established Open Science and EOSC communities in Widening (+ Associated Widening) Countries:**
   a. Support the creation and aggregation of the national Open Science networks, or in the case where they are established (like NOSCIs in NI4OS-Europe region[6] or similar structures)[7], further consolidation and support for the sustainability of these networks. These activities can also support the nomination of the Mandated Organizations (MOs) in respective countries where missing.
   b. Support the creation and interconnection of national EOSC nodes to pan-European EOSC, connecting national repositories of data and services. (this could be two calls, both in the 2025 action plan and the 2026-2027 action plan).

---

[6] https://ni4os.eu/15-national-osc-initiatives/
[7] This could be also revised with the national HEU contact points as important national contact points for Open Science.

These national Open Science networks and national EOSC nodes that can grow together will sustain the implementation of EOSC in their respective countries or regions and enable the connection of repositories and services to the EOSC ecosystem. These activities should support the strong interconnection and communication of national Open Science networks, respective EOSC-A Mandated Organisations with national universities, and national research performing and research funding organisations. The core concept is to share the expertise from the countries with more experience in the implementation of Open Science policy and EOSC infrastructure, thereby capitalising on the regional and socio-political closeness of Widening and Associated Widening countries. This is closely linked to the 3.2.K recommendation of the EOSC Multi-Annual Roadmap (MAR) 2025 and 2026−2027 (EOSC national nodes could be a driver of change also in broader Open Science policy agenda in Widening (+ Associated Widening) countries) + this is also linked to the recommendation no. 7 below.

2. 2026: The need for reforming research assessment through Europe was brought to attention by the preparatory work for the **CoARA initiative. There is a need to reflect on the upcoming changes for both researchers and support staff. The state of research assessment differs between the Widening and Associated Widening countries and Non-Widening countries due to the historical developments of this agenda, so there is a need for support to align researcher assessment in all ERA countries.** This could be closely linked to the more than 50 existing University Alliances efforts established by ERASMUS+ funding through Europe. The program should also support the development of skills and curricula (see the recommendations 1.1.A and 1.1.C of EOSC Multi-Annual Roadmap (MAR) 2025 and 2026−2027). Coordination with EARMA and its national nodes (see, e.g., https://www.rmroadmap.eu/faqs) and projects like Skills4EOSC or initiatives like RDA, GO FAIR, etc. will be essential for this call (this is also linked to the recommendation no. 7 below).

3. **2025: The topic of Open Source is insufficiently addressed in the agenda of Open science in many Widening and Associated Widening countries.** From 2021, new infrastructures for the organisation, development, and support of Open Source tools and services, which were initially provided by the private sector (e.g., Red Hat, Suse, GitHub, Microsoft, etc.), is getting increasing attention from the public sector.[8] One such organisational unit is the OSPO (Open Source Program Office).[9] Support for Open Source systems in research could be divided into two main areas of focus:
   a. for the development, sharing, and curation of software and algorithmic code that can be used for research itself
   b. to support the infrastructural use of Open Source resources within Open Science services at institutional, national, and European levels

As mentioned in the recommendation 2.1.E of EOSC Multi-Annual Roadmap (MAR) 2025 and 2026−2027 "*Evaluate the viable options to provide European and international researchers with a platform for software through development, preservation, and reuse, most likely as a federated network of software repositories.*" The same is now happening in the public sector throughout Europe in several countries (e.g., Netherlands, Germany, Sweden, and the Czech Republic) because the public sector is facing similar challenges[10]. Such repositories already exist at the European Commission, and in the Czech Republic, for instance. In this perspective, support for the creation of OSPOs (Open Source Program Offices) in Widening (+ Associated Widening) countries, together with the public sector and the use of the synergies between both sectors, could be a valuable innovation to use public money more effectively and to bring the academic

---

[8] https://digital-strategy.ec.europa.eu/en/library/study-about-impact-open-source-software-and-hardware-technological-independence-competitiveness-and
[9] https://digital-strategy.ec.europa.eu/en/library/study-about-impact-open-source-software-and-hardware-technological-independence-competitiveness-and
[10] E.g. fight against vendor lock-in practices, and support for increased re-usability of software within the public sector, etc.

and public sectors closer together for activities such as city and citizen science.[11] For more information regarding the Open Source topic within the [EOSC Multi-Annual Roadmap (MAR) 2025 and 2026−2027](#), see its recommendations 2.1.E and 2.3.N.

This agenda actually brings together the work of DG DIGIT (public sector IT, DG CONNECT (European Open Data Portal), and DG RTD (research IT, Open Science, EOSC) on the level of the European Commission. These synergies between the public sector and academia could encourage a stronger Open Science and FAIR data environment within research and citizen services that would benefit both "public" sectors. Widening (+Associated Widening) countries have the opportunity to test this approach because they are currently in the process of establishing or consolidating their national EOSC support nodes and infrastructure. Moreover, the recommendation 3.2.L of [EOSC Multi-Annual Roadmap (MAR) 2025 and 2026−2027](#)[12] mentions, "*Encourage Member States to review and adjust national policies and regulations to enable services to be used in a cross-border context and engage in a series of in-depth trials to evaluate the utility of proposed resourcing models to agree on approaches for EOSC.*", that is strongly linked to newly proposed [Interoperable Europe Act proposal](#) that is now designed only for the public sector but could be broadened in the future to academia as well. This action will support the backbone of the EOSC implementation, the EOSC Interoperability Frameworks (EIF), because it will support the creation of an interoperable environment within the public sector, which is crucial for the proper implementation of EOSC. This does not mean that the money for research in Horizon Europe should be used for developing the public sector, but rather that the money should be used to highlight these synergies on the side of academia.

4. **2026: Widening (+ associated widening) countries could be a test-bed** for
   a. new technologies, facilitating community-level access to the FAIR and (wherever possible) open data. The technologies should also enhance data quality evaluation.
   b. new forms of Citizen Engagement in Science through access to data from research and public sectors (see also recommendation no. 3).

   This could also be linked to industry needs and broader adoption of support towards European Data Spaces as an important topic in coming years.

5. **2026: Support the development of national (open source) Current research information systems (CRIS) ready for EOSC outputs** (e.g., support for internationally recognized PIDs, etc.). Many countries have CRIS systems, but others don't or are using very outdated technology. The need to create or align the national CRIS systems for EOSC output or just for research data could be a crucial step in implementing EOSC for Widening (+ Associated Widening) countries. For more information, see 2.1.A, 2.2.H, 2.2.I of [EOSC Multi-Annual Roadmap (MAR) 2025 and 2026−2027](#).
6. **2026: Support of cooperation of RFO networks** (e.g., [CHIST ERA](#)) in Widening (+ Associated Widening) countries.
7. **2025: Build national Competence Centres for RDM, FAIR data, and EOSC upskilling in these countries**, focusing on the training of researchers, data stewards, data curators, and managers and strengthening the European Coordination Network created by project Skills4EOSC.

Overall goal
Widening (+ Associated Widening) countries are supposed to build several parts of the infrastructure supporting research data management for the first time. These countries frequently lack extensive experience building or supporting Large Research Infrastructures (LRIs). Thus, the experience from Non-Widening countries could be highly valuable and can accelerate the whole process of the EOSC implementation. We expect to create the support infrastructure more efficiently in this context. Moreover, the widening (+ Associated Widening) countries could contribute to the EOSC's innovative environment

---

[11] See e.g. this event: https://symposium.openforumeurope.org/
[12] similarly mentioned in the section "EOSC Resourcing models" on p. 9 of https://eosc.eu/sites/default/files/2023-01/MAR_2025-27_draft.pdf or 3.1.B. recommendation

by developing and testing new interoperable concepts with the involvement of citizens[13]. For example, these countries can innovate through the synergy development of academia and the public sector towards support of evidence-based policymaking towards smart and resilient regions/societies. Thus this implementation could be more efficient, more interoperable, and user-oriented (ready to be built for cross-border collaboration) from the beginning (see 3.1.B of EOSC Multi-Annual Roadmap (MAR) 2025 and 2026–2027).

3.B The targeted outcome of each activity

2025

Recommendation 3.A.1 a.: Support the creation and aggregation of the national Open Science networks, or in the case where they are established (like NOSCIs in NI4OS-Europe region[14] or similar structures)[15], further consolidation and support for the sustainability of these networks. These activities can also support the nomination of the Mandated Organizations (MOs) in respective countries where missing.

Recommendation 3.A.1 b.: Support the creation and interconnection of national EOSC nodes to pan-European EOSC, connecting national repositories of data and services. (this could be two calls, both in the 2025 action plan and the 2026-2027 action plan).

Recommendation 3.A.3: Support for Open Source systems in research in two main areas of focus:
- Open Source services for the development, sharing, and curation of software and algorithmic code that can be used for research itself
- Open Source systems to support the infrastructural use of Open Source resources within Open Science services at institutional, national, and European levels

This action will support the backbone of the EOSC implementation, the EOSC Interoperability Frameworks (EIF), because it will support the creation of an interoperable environment within the public sector, which is crucial for the proper implementation of EOSC

Recommendation 3.A.7: National Competence Centres for RDM, FAIR data, and EOSC upskilling in Widening and Associated Widening countries, focusing on the training of researchers, data stewards, data curators, and managers and strengthening the European Coordination Network created by project Skills4EOSC.

2026-2027

Recommendation 3.A.1 b.: Support the creation and interconnection of national EOSC nodes to pan-European EOSC, connecting national repositories of data and services. (this could be two calls, both in the 2025 action plan and the 2026-2027 action plan).

Recommendation 3.A.2: Reflection on the upcoming changes in research assessment for both researchers and support staff. The program should also support the development of skills and curricula (see the recommendations 1.1.A and 1.1.C of EOSC Multi-Annual Roadmap (MAR) 2025 and 2026–2027). Coordination with EARMA and its national nodes (see, e.g., https://www.rmroadmap.eu/faqs) and projects like Skills4EOSC or initiatives like RDA, GO FAIR, etc. will be essential for this call (this is also linked to the recommendation no. 7 below).

---

[13] Widening and Associated Widening Countries could serve as a tes-beds for innovative solutions, that could be later implemented also in non-widening countries or these countries could join the development of test-beds in non-widening countries with innovative concepts.

[14] https://ni4os.eu/15-national-osc-initiatives/

[15] This could be also revised with the national HEU contact points as important national contact points for Open Science.

Recommendation 3.A.4: New forms of testing innovative concepts within the ERA Policy Actions -> test-beds for:
- new technologies, facilitating community-level access to the FAIR and (wherever possible) open data. The technologies should also enhance data quality evaluation.
- new forms of Citizen Engagement in Science through access to data from research and public sectors (see also recommendation no. 3).

This could also be linked to industry needs and broader adoption of support towards European Data Spaces as an important topic in coming years.

Recommendation 3.A.5: Development of national (open source) Current research information systems (CRIS) ready for EOSC outputs

Recommendation 3.A.6: More robust and connected cooperation of RFO networks (e.g., CHIST ERA) in Widening (+ Associated Widening) countries.

3.C Estimation of investment required to make a difference

2025
For Recommendations 3.A.1 a., b.; 3.A.3 and 3.A.7 **approx. 30-35 mil. EUR could be enough (30 countries involved, 4-7 consortia formed)**

2026-2027
For Recommendations 3.A.1 b.; 3.A.2, 3.A.4, 3.A.5 and 3.A.6 **approx. 20-25 mil. EUR could be enough (30 countries involved, 3-6 consortia formed)**

Total: 50-60 mil. EUR could be spent on the recommendation serving as a "seed money" for Widening and Associated Widening countries to involve and sustain the respective national or regional funding in the next phase.

3.D The nature of the activity (most appropriate HE instrument)

2025
For Recommendation 3.A.1 a., b.: *Coordination and Support Actions (CSA), inspiration from:*
- HORIZON-WIDERA-2021-ACCESS-05-01: Capacity building to strengthen networks of higher education institutions and cooperation with surrounding ecosystems
- + HORIZON-WIDERA-2021-ACCESS-06-01: Support for R&I policy making in the Western Balkans
- or HORIZON-WIDERA-2023-ERA-01-01: Programme level collaboration between national R&I policy-makers
- possibly adapted HORIZON-WIDERA-2022-ACCESS-07-01: Hop On Facility (Research and Innovation Actions)

For Recommendation 3.A.3: *Coordination and Support Actions (CSA), inspiration from:*
- HORIZON-WIDERA-2023-ERA-01-03: Experimentation and exchange of good practices for value creation
- or specific CSA call for this particular topic
- possibly HORIZON-WIDERA-2023-ERA-01-05: Exploitation and valorisation of results relevant for the ERA Policy Agenda

For Recommendation 3.A.7: *Coordination and Support Actions (CSA), inspiration from:*

- HORIZON-WIDERA-2021-ERA-01-20: Towards a Europe-wide training and networking scheme for research managers
- possibly adapted HORIZON-WIDERA-2022-ACCESS-07-01: Hop On Facility (Research and Innovation Actions)

2026-2027
For Recommendation 3.A.1 b.: *Coordination and Support Actions (CSA), inspiration from:*
- HORIZON-WIDERA-2023-ACCESS-04-01: Pathways to Synergies
- + HORIZON-WIDERA-2021-ACCESS-06-01: Support for R&I policy making in the Western Balkans
- or HORIZON-WIDERA-2023-ERA-01-01: Programme level collaboration between national R&I policy-makers
- possibly adapted HORIZON-WIDERA-2022-ACCESS-07-01: Hop On Facility (Research and Innovation Actions)

For Recommendation 3.A.2: *Coordination and Support Actions (CSA), Inspiration from:*
- HORIZON-WIDERA-2023-ERA-01-07: Support to reforms of research assessment in the European Research Area
- or HORIZON-WIDERA-2021-ERA-01-45: Support to changes in the assessment of research and researchers to reward the practice of open science
- possibly HORIZON-WIDERA-2021-ERA-01-20: Towards a Europe-wide training and networking scheme for research managers
- possibly HORIZON-WIDERA-2023-ERA-01-12: The future of research ethics review in the changing research environments

For Recommendation 3.A.4: *Coordination and Support Actions (CSA), inspiration from:*
- HORIZON-WIDERA-2023-ERA-01-02: A strong European R&I Foresight Community to better inform R&I policy decisions in the European Research Area about potential futures

For Recommendation 3.A.5: *Coordination and Support Actions (CSA), inspiration from:*
- HORIZON-WIDERA-2023-ERA-01-07: Support to reforms of research assessment in the European Research Area

For Recommendation 3.A.6: *Coordination and Support Actions (CSA), inspiration from:*
- HORIZON-WIDERA-2023-ERA-01-07: Support to reforms of research assessment in the European Research Area

The use of cascading grants is also possible as a valuable tool for incentivising the change.

References
- [EOSC-A Tripartite Collaboration Descriptions of Widening Countries and Associated Countries (where available)](#)
- [Horizon Europe Work Programme 2021-2022: 11. Widening participation and strengthening the European Research Area](#)
- [Horizon Europe Work Programme 2023-2024: 11. Widening participation and strengthening the European Research Area](#)
- [EOSC Multi-Annual Roadmap (MAR) 2025 and 2026−2027 proposal](#)
- [ERA Policy Agenda − Action 17](#) + [The RM-ROADMAP Ambassador network](#)
- [Lund Declaration on Maximising the Benefits of Research data](#)
- [Horizon Europe Widening - Who should apply](#)
- [NOSCI definition and stakeholders map from NI4OS project](#) + [NI4OS project final review](#)
- [https://swedish-presidency.consilium.europa.eu/media/5wehfvzx/2023-06-20_eu2023_maximising-the-benefits-of-research-data_declaration.pdf](#)

- https://op.europa.eu/en/publication-detail/-/publication/78ae5276-ae8e-11e9-9d01-01aa75ed71a1/language-en
- https://www.esfri.eu/latest-esfri-news/brno-declaration-ris
- https://digital-strategy.ec.europa.eu/en/library/study-about-impact-open-source-software-and-hardware-technological-independence-competitiveness-and
- https://symposium.openforumeurope.org/
- https://eosc.eu/sites/default/files/2023-01/MAR_2025-27_draft.pdf or 3.1.B. recommendation
- https://roadmap2021.esfri.eu/projects-and-landmarks/explore-the-map/