



H2020-INFRAEOSC-2018-3

## **NI4OS-Europe**

National Initiatives for Open Science in Europe

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# Deliverable D2.7

## Final report on liaison activities

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**Abstract:** D2.7 reports on the various liaison activities in the second phase of the NI4OS-Europe project with a focus on the liaison with EOSC Association, projects and communities. It also reports on liaison activities at national and international levels.

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## List of Acronyms

<b>AG</b>	Advisory Groups
<b>EOSC</b>	European Open Science Cloud
<b>EOSC-A</b>	EOSC Association
<b>EOSC-EB</b>	EOSC Executive Board
<b>EOSC-SB</b>	EOSC Steering Board
<b>ERA</b>	European Research Area
<b>EU</b>	European Union
<b>FAIR</b>	Findable, Accessible, Interoperable, Reusable
<b>MoU</b>	Memorandum of Understanding
<b>NOSCI</b>	National Open Science Cloud Initiative
<b>OA</b>	Open Access
<b>ORDM</b>	Open research data management
<b>OS</b>	Open Science
<b>RoP</b>	Rules of Participation
<b>SEE</b>	Southeast Europe
<b>SRIA</b>	EOSC Strategic Research and Innovation Agenda
<b>TF</b>	Task Force
<b>WG</b>	Working group
<b>WP</b>	Work package

## Executive summary

### **What is the focus of this Deliverable?**

The current deliverable presents the various liaison activities performed by the NI4OS-Europe partners. WP2 has been the NI4OS-Europe work package dealing with all actors of the EOSC ecosystem (governance and research communities), but also beyond it, being responsible for the liaison activities with other world regions. Liaison should not be equated to dissemination. It is rather a process of exchanging and sharing knowledge, practices and information, while working together towards common goals, in this case the EOSC implementation and adoption. The deliverable D2.7 doesn't, thus, deal in general with the NI4OS-Europe dissemination and marketing activities, but focusses only on the activities that targeted the liaison with the EOSC ecosystem.

### **What is next in the process to deliver the NI4OS-Europe results?**

The deliverable is submitted at the last month of the NI4OS-Europe project. The project partners have elaborated the sustainability priorities for the project outcomes in a dedicated deliverable.

### **What are the deliverable contents?**

The deliverable presents in the introductory section the main changes in the EOSC governance and ecosystem, as they also had an impact on the focus of the liaison activities, and then re-introduces the main elements of the liaison plan developed at the beginning of the project. The next section summarises all activities carried out in the context of the EOSC governance, as it has been defined after the establishment of the EOSC Association. Section 3 describes the liaison activities that took place in the frame of the collaboration with other projects funded under the same call INFRAEOSC-05. NI4OS-Europe partners have been very active at national level, also as part of their activities for setting up National Open Science Cloud Initiatives (NOSCI). These are presented in section 4. Next section presents liaison activities with other projects and initiatives and the deliverable concludes with the presentation of the liaison with other regions.

### **Conclusions and recommendations**

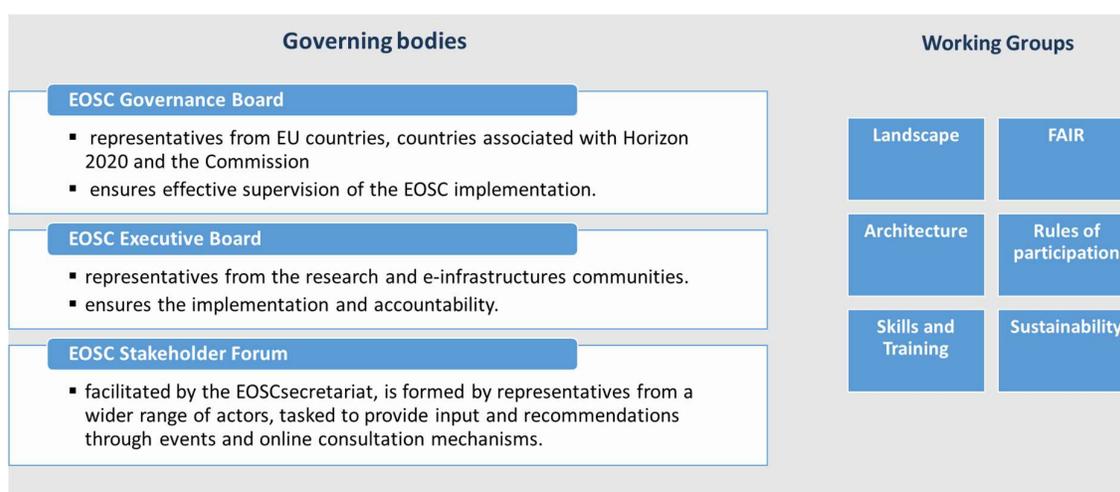
The activities of the NI4OS-Europe project spanned over a period of 42 months, during which several changes occurred in the EOSC ecosystem, including changes in the governance and in the EOSC supporting projects. Liaison activities have been impacted by these changes. The NI4OS-Europe partners have liaised successfully with all OS and EOSC actors throughout the project lifetime.

# 1. Introduction

## 1.1. Updates since the Intermediate Liaison Report

The activities of the NI4OS-Europe project spanned over a period of 42 months, during which several changes occurred in the EOSC ecosystem, including changes in the governance and in the EOSC supporting projects. In this period, we can identify two distinct phases regarding the EOSC governance, the characteristics of which also determine the modus operandi for the liaison activities.

During the first phase, the governance structure was composed by the EOSC Executive Board (EOSC-EB), responsible for the strategic direction and operational management, the EOSC Steering Committee (EOSC-SC), responsible for overseeing the implementation of the EOSC strategic plan and providing advice to EOSC-EB, and the EOSC User Community, representing the interests of the scientific and research communities. All of the above were accompanied by six working groups (Architecture, FAIR, Landscaping, Rules of Participation, Skills and Training, Sustainability) that “ensured a community-sourced approach to the challenges of the EOSC<sup>1</sup>”.



**Figure 1: First phase of EOSC governance**

In parallel, the INFRAEOSC-05 projects had been funded with the overall objective “to set up an operational framework for supporting the overall governance of the EOSC<sup>2</sup>”, and started their operation gradually after Spring 2019. Their close collaboration has been formalised through the signing of an MoU, that further fostered activities towards EOSC

<sup>1</sup> <https://eoscsecretariat.eu/eosc-working-groups>, accessed on 07.02.2023.

<sup>2</sup> <https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/infraeosc-05-2018-2019>, accessed on 07.02.2023.

implementation and inclusion. Part of the MoU has also been the definition of joint activities and the establishment of Task Forces, thematically aligned (but not identically) to the EOSC EB Working Groups.

NI4OS-Europe participated in all the above and actively liaised with all actors in this ecosystem: the NI4OS-Europe partners contributed to the development of the EOSC core documentation (FAIR Lady report, the SRIA and the EOSC partnership proposal) and provided recommendations and advice to the EOSC GB representatives from the region; NI4OS-Europe representatives participated actively in the Working Groups and the EOSC Executive Board; NI4OS-Europe members, in contact with their regional EOSC GB Members, participated in the development and drafting of the EOSC Association Statutes and to the EOSC Association Bylaws.

The liaison with other INFRAEOSC-05 projects took place in the Task Forces, but also at bilateral level. Same for the liaison with other EOSC related projects and initiatives (EOSC Enhance, EOSC-hub, EOSCpilot, eInfraCentral) and broader OS related initiatives and projects (FREYA, OpenAIRE, RDA Europe), where the emphasis has been on the exchange of information, related work and best practices on policy and technical topics.

After almost the first one and half years of NI4OS-Europe, the EOSC moved to the next (and current) governance phase. The first (constitutional) General Assembly of the EOSC Association that took place in December 2020 signalled this transition. The liaison framework now is at large defined by the guidance set by the EOSC Association, as the collective representative of the researchers and OS stakeholders working on solutions for a sustainable, trusted, and inclusive EOSC. The NI4OS-Europe liaison activities during this second phase are the main focus of the current deliverable.

## *1.2. Brief Re-Intro to the Liaison Plan*

For successfully navigating in the EOSC environment and fostering liaison opportunities among the project partners and external relevant stakeholders, NI4OS-Europe developed a concrete liaison methodology that was engulfed in a working document supplementing the official deliverables.

This liaison plan outlined an in stages methodological approach to encourage close collaboration between national actors and the governance and initiatives of the European Open Science Cloud (EOSC). It served as a guide for cooperation activities that improved communication and engagement. NI4OS-Europe views the liaison and engagement with EOSC as an ongoing process that consists of three interconnected phases, a) Define & Map, b) Align & Connect, c) and Assess & Sustain. As also concisely depicted in figure 1 below, the initial 'Define & Map' phase, involves introspective activities and mapping of the European landscape, the second phase 'Align & Connect' has focused on connecting NI4OS-Europe project with EOSC through communication, consultation, and active collaboration, while the final stage of 'Assess & Sustain' aims to ensure the effectiveness of the project's outcome.

This progressive approach aimed to form connections through designed activities and adjust over time, allowing the NI4OS-Europe partners and local entities to stay informed of any EOSC developments, participate in national and European activities, transfer knowledge, and make any necessary adjustments to changing circumstances.

Furthermore, the aim of the liaison has been twofold: to contribute to discussions about setting up EOSC and to effectively serve the project's objectives, such as onboarding, policy development, and capacity building.



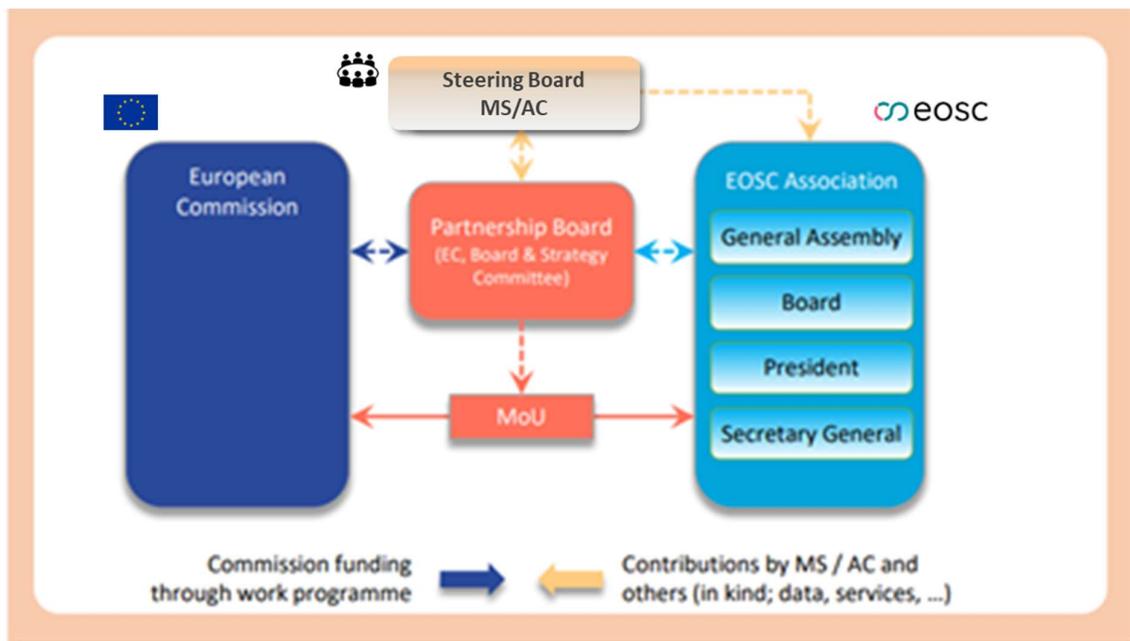
**Figure 2: NI4OS-Europe liaison methodology and related actions**

## 2. Liaison in the context of the current EOSC governance

### 2.1. Current EOSC Governance and NI4OS-Europe

The second half of 2020 brings major changes to the EOSC governance: The EOSC Association has been established as legal entity end of July 2020 and in December of the same year the constitutional General Assembly takes place. These formal changes also impact the organisation of the liaison among all EOSC actors and projects. The liaison framework now is at large defined by the guidance set by the EOSC Association, as the collective representative of the researchers and OS stakeholders working on solutions for a sustainable, trusted, and inclusive EOSC.

The keyword in the current governance phase is “Tripartite Collaboration”, meaning “the strategic coordination between the EU represented by the Commission, the EOSC Association, and the Member States and Associated Countries involved in the EOSC Steering Board to resource and support the implementation of the EOSC environment in Europe”<sup>3</sup>.



**Figure 3: The EOSC Tripartite collaboration**

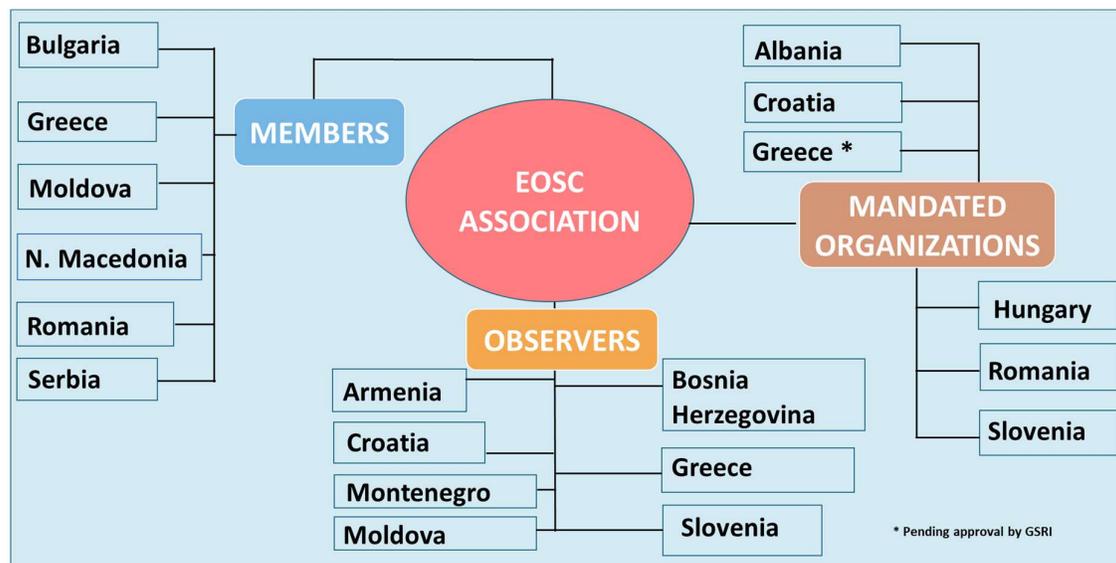
NI4OS-Europe has been following closely all related developments from an early stage on and has supported them also from a procedural point of view, with the participation of its

<sup>3</sup> <https://eosc.eu/tripartite-collaboration>, accessed on 13.02.2023.

representatives in the discussions on the development of the EOSC-A Statutes and the Bylaws Working Group<sup>4</sup>. After the establishment of the EOSC Association, the focus has been shifted to the monitoring of the engagement and liaison with it.

For NI4OS-Europe, the participation of the individual partner organisations (but also of the SEE region in general) in the new Association had been a priority. This has been signalled through various activities and initiatives. Internally, it has been a recurrent topic in the WP2 meetings, the work package responsible for the liaison with EOSC. Dedicated material has been drafted, in collaboration also with WP6-User engagement, training and demonstrators, and WP7-Communication, marketing, sustainability and innovation, summarising the benefits of EOSC participation and engagement. Most important: the EOSC-A liaison has been stated as a key priority for the National Open Science Cloud Initiatives (NOSCI), the national structures setup by NI4OS-Europe to foster Open Science and EOSC adoption. The support to EOSC in national settings and the work towards inclusion are very high on their action plans<sup>5</sup>.

The current picture of the participation of the NI4OS-Europe partner countries in the EOSC Association finds thirteen (out of the fifteen) countries having joined the EOSC Association, represented through 23 organizations covering all organizational types (research performing, research funding, service provider for research). In specific, there ten members, eight observers and six mandated organizations.



**Figure 4: NI4OS-Europe Partner countries participation in EOSC-A**

The full list of the Southeast European participation in the EOSC-A can be found in the appendix of this deliverable, including information about the name of the organisation, the type of participation and whether it is a NI4OS-Europe partner or not. In the rest of

<sup>4</sup> NI4OS-Europe Intermediate report on liaison activities  
<https://zenodo.org/record/4590157#.Y-y0zXZBwVA>, accessed on 13.02.2023.

<sup>5</sup> NI4OS-Europe D2.6 'National OSC initiatives report'

section 2.1, we present the EOSC-A liaison activities structured so to reflect the activities and priorities set by the aforementioned framework, focussing on direct liaison with the EOSC Association and the presentation of activities related to the tripartite collaboration. The involvement in the EOSC-A Advisory Groups and Task Forces is presented separately in the next section.

### **2.1.1. *Liaison with the EOSC Association***

The supreme authority of the Association is the General Assembly. Starting from December 2020, five General Assemblies took place in total, with the NI4OS-Europe partners who are EOSC Association members participating in all of them:

- First GA: 17 December 2020 (online)
- Second GA: by 31 August 2021 (written procedure)
- Third GA: 10 December 2021 (online)
- Fourth GA: 24 & 25 May 2022 (Brussels)
- Fifth GA: 28 & 29 November 2022 (online)

The liaison with the EOSC-A has been of course active also in the periods between the GAs. In addition to any one-to-one meetings and discussions, NI4OS-Europe representatives participated in April 2022 in the meeting “EOSC Association Board of Directors meets ongoing H2020 Project Coordinators”. This has been a good opportunity to present the project outcomes in a structured way and provide to the EOSC-A board the necessary information on services, solutions and tools available to the EOSC community.

In the same direction has been also the participation in Spring 2022 to the survey on “Key Exploitable Results of Horizon 2020 EOSC-related Projects”<sup>6</sup>. NI4OS-Europe partners defined in dedicated meetings the Key Exploitable Results (KERs) for the project and provided input in a structured way. This activity and the input collected through it, supported the direct liaison with the EOSC-A Task Forces, as the place where technical and policy aspects on EOSC are discussed and future implementation directions are defined. NI4OS-Europe had a dedicated online meeting with EOSC-Association to present the project KERs and discuss sustainability issues.

NI4OS-Europe partners have been also encouraged and mobilised to participate to the EOSC Partnership Monitoring Framework survey in Autumn 2022. This had been considered as an important activity for the EOSC-A members, as it will provide the actual information on status of the partnership and will help monitoring any progress in relation to the EOSC Strategic Research and Innovation Agenda (SRIA) objectives, by defining the baseline for the Key Performance Indicators (KPIs) of the EOSC Partnership Monitoring Framework.

In parallel, and after the kick-off of the EOSC Focus project, which has as a key objective the provision of an effective stakeholder forum, the EOSC Forum has been launched. This is a new collaboration platform for all actors involved in EOSC-A activities. It has in its

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<sup>6</sup> Delivering for EOSC - Key Exploitable Results of Horizon 2020 EOSC-related Projects (FULL Report) <https://zenodo.org/record/7401539#.Y-zmsHZBwVA>, accessed on 14.02.2023.

core the EOSC-A TFs and not only provides EOSC-related information but is also a space for sharing updates, sharing ideas, and effectively organise activities and work. NI4OS-Europe partners who are TF members have joined the EOSC Forum. Moreover, several contributions and news items have been shared, on the occasion of the organisation of the tripartite events.

Finally, the most important liaison opportunity and “platform” for EOSC stakeholder is probably the EOSC Symposium. Not only because of its official programme that offers a stage for presenting all activities and projects working on EOSC implementation, but foremost because it is the place where all researchers and stakeholders in general meet and exchange through formal agenda and the side-discussions. During this reporting period two EOSC Symposia took place. The one on 15-18 June 2021 (online), the second one on 14-17 November 2022 (in Prague). The NI4OS-Europe project has been present in both, organised a number of sessions and workshops and participated in plenary discussions and round tables.

### **2.1.2. National tripartite events**

To further mobilise the tripartite collaboration between the European Commission, Member States/ Associated Countries in the EOSC Steering Board and the research communities represented in the EOASC-A, a series of events have been organized. The events aimed at facilitating the decision-making process at EU Member States level on how to commit to EOSC and develop the relevant national policies and programmes.

The event series has been kicked-off in December 2021, with the first Tripartite Event organised as a European one. NI4OS-Europe partners have been involved in this activity right from the beginning and several national teams took the initiative to organize in their countries a national tripartite event. Three events took place in the last months of 2021, and another three are planned to take place in March 2023. The table below summarises the national tripartite events supported by NI4OS-Europe partners.

**Table 1: Tripartite events in the NI4OS-Europe countries**

Country, Date	Focus / Summary of outcomes
Greece, October 2022 <a href="https://www.athenarc.gr/en/events/eosc-tripartite-event-greece">https://www.athenarc.gr/en/events/eosc-tripartite-event-greece</a>	The Greek Tripartite event was a major gathering of the EOSC “ecosystem” in the country. The event captured the diversity and dynamic in the collaborative scheme of the Hellenic Open Science Initiative (HOSI), highlighting the strengths and dedication of the Greek research community in Open Science and EOSC at European, national and local levels. HOSI was raised as a good example of collaboration that can play an important role in liaising and supporting the implementation of the ERA actions. The HOSI members have already expressed their commitments in their MoU and their collective proposal for a National Open Science Plan, parts of which have been transposed in the Digital Strategy 2020-2025.

	<p>The General Secretariat for Research and Innovation - GSRI shared their commitment to support some of the ERA actions for Open Science and EOSC, however the adoption and implementation will take place with the current provisions with no extra funding.</p> <p>Enhanced communication and coordination at the level of the Ministries was agreed. All Ministries with responsibilities around the topics of Open Science and EOSC will converge in dialogue.</p>
<p>Slovenia October 2022 <a href="https://odprtaznanost.si/nekategorizirano/open-science-day-2022/">https://odprtaznanost.si/nekategorizirano/open-science-day-2022/</a></p>	<p>The event was a focussed discussion on commitments towards the ERA, and an effort to pave the way to the harmonized advancement of the Slovenian research area within the context of open science and European guidelines. It also provided a steppingstone to establish in the country a network of decision makers, scientists, and EOSC service providers. The main aims have been to:</p> <ul style="list-style-type: none"> <li>- Establish a National Open Science Community;</li> <li>- Accelerate coordination processes between the National Open Science Community and the EOSC;</li> <li>- Raise visibility of the EOSC and especially of the EOSC Association among Slovenian researchers and RPO;</li> <li>- Emphasise the importance of data literacy;</li> <li>- Integrating research infrastructures into the scope of awareness of the importance of digital sovereignty and autonomy.</li> </ul>
<p>Georgia November 2022 <a href="https://eosc.eu/news/national-tripartite-event-georgia">https://eosc.eu/news/national-tripartite-event-georgia</a></p>	<p>This event aimed at triggering engagement and reinforcing dialogue between relevant Ministries, Research Performing Organisations, Research Funding Organisations and the wider EOSC research community:</p> <ul style="list-style-type: none"> <li>- It promoted in the country the OS and EOSC policy developments</li> <li>- It increased EOSC's visibility in Georgia.</li> <li>- It facilitated the exchange with national policy makers, as the hosting organisation has been the Ministry of Education and Science of Georgia.</li> </ul>
<p>Hungary March 2023</p>	<p><a href="https://eosc.eu/events/national-tripartite-event-hungary">https://eosc.eu/events/national-tripartite-event-hungary</a></p>
<p>Croatia</p>	<p><a href="https://eosc.eu/events/national-tripartite-event-croatia">https://eosc.eu/events/national-tripartite-event-croatia</a></p>

March 2023	
Bulgaria	<a href="https://eosc.eu/events/tripartite-event-bulgaria">https://eosc.eu/events/tripartite-event-bulgaria</a>
March 2023	

## *2.2. Participation in Advisory Groups and Task Forces*

After the first months of being in operation, the EOSC Association issued an open call for participation in the EOSC Association Advisory Groups (AGs) and Task Forces (TFs). The setup of the TFs took place in two stages: first (from March to June 2021), individuals have been selected to work on the scope and activities for each TF and draft the respective charter. The final decisions and approval of the above took place during the second EOSC GA in August 2021. During the second phase the members for each TF have been recruited from the broader EOSC community, with the mandate to work on the priorities identified in the charters.

The Task Forces are meant to address the key areas for the EOSC implementation and ensure the direct liaison with EOSC projects, so as to ensure the inclusion and uptake of related results, but also to identify “missing pieces” that should then be included in an updated SRIA. As such, the liaison activities within the TFs has been a key activity for the NI4OS-Europe consortium. Partners have been strongly encouraged to apply for joining TFs related to their expertise. The application process and results have been monitored within the WP2, to ensure broad participation and contribution to the TFs based on the projects work and outcomes. The table below presents the NI4OS-Europe participation in the various TFs.

**Table 2: Participation of NI4OS-Europe partners in EOSC-A TFs**

EOSC-A Task Force	NI4OS-Europe partner	Organisation
Data Stewardship Curricula and Career Paths	Judit Fazekas-Paragh, Dunja Legat	UD, UMUKM
FAIR Metrics & Data quality	Elli Papadopoulou	ATHENA RC
Research Careers, Recognition & Credit	Carina Raportaru	UEFISCDI
Researcher Engagement & Adoption	Alina Irimia, Eleni Toli, Kristina Posavec, Biljana Kosanovic	UEFISCDI, ATHENA RC, SRCE, UoB
Rules of Participation Compliance Monitoring	Marianna Katrakazi, Anastas Mishev, Dragoş-Cătălin Barbu, Emir Imamagić	ATHENA RC, UKIM, ICI Bucharest, SRCE
Technical Interoperability of Data & Services	Dušan Vudragović, Emanouil Atanassov, Svetlozar Yordanov, Kostas Koumantaros	IPB, ICT, GRNET
Upskilling countries to engage in EOSC	Sonja Filiposka, Ioana Trif	UKIM, UEFISCDI
Financial Sustainability	Ramaz Kvatadze	GRENA
Long-term Data Preservation	Draženko Celjak	SRCE
TF AAI Architecture	Nicolas Liampotis	GRNET
PID Policy and Implementation	Themis Zamani	GRNET
Future User Group	Hrachya Astsatryan, Ljupcho Pejov	IIAP, UKIM

All NI4OS-Europe partners have actively liaised within the TF they are members, participating in the scheduled meetings, in the drafting of the deliverables and in the workshops organised during the EOSC Symposium 2022.

A TF-related activity that needs to be highlighted, is the FAIR metrics survey. ATHENA RC led the design and the dissemination of the FAIR Metrics survey that took place between 14th November and 2nd December 2022. The survey aimed at exploring the degree to which the research and development community is aware of, and utilizing, metrics and evaluation tools for FAIRness, and their perspectives on being evaluated for their own compliance with the objectives of FAIR. The survey received more than 70 responses which are currently being analysed. The findings of this activity will be published as a report in 2023.

### 3. Liaison with INFRAEOSC-05a/b/c projects

The INFRAEOSC-05 projects started their operation after spring 2019. They continued the path defined by the previous EOSC related projects, such as EOSC Enhance, EOSC-hub, EOSCpilot and eInfraCentral. NI4OS-Europe liaised on specific technical and policy aspects with all the projects that shaped the first phase of EOSC. These have been for example the exchange of know-how and best practices in the process of service onboarding and the provision of a user-oriented service catalogue.

The liaison framework and activities with the INFRAEOSC-05 have been described in detail in the previous NI4OS-Europe related deliverable<sup>7</sup>. In the following we provide updates on the liaison activities taken place in the INFRAEOSC-05 task forces. In addition to this, the liaison with the FAIRsFAIR project is also presented, as it focussed on the important “horizontal” issue of the provision of a framework for FAIR services in EOSC. The section concludes with the brief presentation of the “Position papers on EOSC,” a document that provided related insights from regional projects and infrastructures.

#### 3.1. INFRAEOSC-05 Task Forces

The setting up of INFRAEOSC-05 Task Forces has been the mean to implement the Joint Activity Plan, that has been part of the MoU signed between the INFRAEOSC-05a/b/c projects. The six founded Task Forces focused on the areas of

- Landscaping,
- FAIR Data and Infrastructure,
- Service Onboarding,
- National Policies and Governance,
- Training & Skills,
- Dissemination and Events.

For the better understanding of the importance of the TFs constitution we will briefly mention the aims of the Joint Activity Plan that were summarized in the following focus areas: 1. Identifying overlaps and complementarities between the INFRAEOSC-05 projects to jointly support the implementation of the EOSC and development of a synchronized activities plan, 2. Formation and operation of Task Forces dedicated to address common activities of interest to multiple projects and 3. Development of a common strategy to synchronize activities of Collaborating Projects with the EOSC Working Groups.

The role of the Task Forces has been substantial in making the collaboration between the projects working through activities such as the joint drafting of reports, the co-organization of workshops, the exchange of knowledge on research topics that set a foundation for common working developments between the projects.

Below follows a summary that provides an overview of the liaison at TF-level, by describing the scope, activities, and outcomes of each Task Force. NI4OS-Europe partners have

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<sup>7</sup> <https://zenodo.org/record/4590157#.Y-t6inZBwVA>, accessed on 10.02.2023

actively participated in the development and achievement of all the outcomes described below.

### **Service Onboarding Task Force**

The Service Onboarding TF started its activities in November 2019. The task force objectives can be summarized in the following:

- The harmonization of service description templates.
- Analysis of the shared categorization of services within the EOSC portal.
- Examination of options for exposure to services.
- Examination of options for integration with the federating core services.
- Analysis of the rules of participation and compliance, based on outputs from the related EOSC working groups.
- Production of training material for service providers and the organization of joint on-boarding training events.

The objectives of the task force were discussed in monthly meetings organized from Nov 2019 till November 2021. After November 2021, the task force was merged with the EOSC on-boarding strategy group (E-OSG) organized by the EOSC-Future project.

During this period, the task force presented, discussed, and analyzed the services description templates used across the range of INFRAEOSC-05 projects and tried to align them in an iterative approach. In parallel, the task force monitored the development of the EOSC profiles specification and prepared several suggestions for improvement. Initial on-boarding procedures, prepared independently by each project, were presented, and discussed, and the planned on-boarding timeline. Moreover, the task force examined different types of resources and worked on a uniform on-boarding procedure covering a wide range of resource type. The task force analyzed the rules of participation proposal created by the working group and provided several recommendations for their improvement, while also discussed policies to support establishing of a trustworthy environment towards integrating external catalogues into the single EOSC marketplace.

Finally, the task force has produced outcomes that cover a) the analysis of different service template descriptions and alignment of these templates supporting the development of the EOSC profiles specification that is commonly used these days. b) The analysis of different procedures that led to the common on-boarding procedure used currently by the EOSC. In more detail, the task force gave emphasis on more technical rules of participation, which are partially and practically implemented at national level and endorsed their introduction and accommodation in the EOSC. c) The inclusion of external catalogues and pre-production environments around which regional or thematic EOSC nodes are organized and integrated into the EOSC that are now widely accepted among the EOSC communities.

### **Skills and Training Task Force**

The focus of the Training and Skills task force has been on developing common approaches and paths regarding all training and competences development aspects and activities. These included analyzing and identifying the plans of each of the EOSC-5b projects to implement training activities via organizing online or face-to-face events and providing

different types of learning materials and other training content. The main areas for recognizing commonalities and possibilities for collaboration included training objectives, training topics, means and methods of training delivery, categories of targeted stakeholders and the project level timeline for implementing the planned training activities and events. One of the main aims of the task force was to reuse and build upon the work, materials and expertise available from other initiatives, institutions and projects such as Foster, OpenAIRE and EOSC-Hub, DANS and the Community of Practice for Training Coordinators.

The task force has organized regular meetings to discuss the synergies of different approaches to training and skills development planned and organized in the projects. Based on the discussions and topics raised in these meetings the opportunities for exchange of best practices, know-how and experiences on specific topics have been identified such as the knowledge transfer from NI4OS-Europe to EOSC synergy regarding the setup and maintenance of the training platform, or the exchange of approaches related to the implementation of learning paths within the NI4OS-Europe training platform and the ELIXIR Europe training platform learning paths focusing on the bioinformatics community. The task force has also worked on the assessment of best practices and standards related to the development and interoperability of training resources catalogues that will enable the projects effectively promote and combine the vast training content developed during the project's lifetime. To discuss the different elements related to Training and Skills, the task force has organized several online workshops such as the Workshop on Harmonizing Training Resource Metadata for EOSC Communities held on April 14th, 2021.

Ultimately, the sharing of training plans and training calendars has led to many possibilities for collaboration where experts from one project were invited to training events organized by another project, as was the case with a number of train the trainer and national training events organized by NI4OS-Europe where trainers from EOSC Pillar, DANS, FAIRsFAIR, EGI and others. Additionally, the exchange of best practices were used for efficient adaptation and implementation of the training activities with the move to fully online events during the COVID pandemic. The efforts that focused on the harmonization of training resources metadata and development on training materials catalogues has helped NI4OS-Europe adjust the metadata schema used for describing the training materials and aligning it with the latest efforts regarding the development of a common training metadata schema. Finally, the discussions and approaches presented by other projects in the task force have been used as an incentive for the analysis and development of machine-readable description of the training resources.

### **Dissemination and Events Task Force**

The Dissemination and Events Task Force aimed at the alignment of EOSC related common messages through information sharing between projects and mutual sharing of project news and results.

The task force activities took place from November 2019 until March 2021, and the chairing responsibilities were shared from delegated members of both the EOSC-Pillar and NI4OS-Europe projects. The task force's actions were organized through bimonthly online meetings where representative members of the INFRAEOSC-05 projects were invited.

The task force's outcomes were a result of collaborative effort between the projects that aimed towards the actualization of effective dissemination actions that would promote the European Open Science Cloud (EOSC). The task force began its work highlighting the cross-project collaboration by creating a news piece on the EOSC Secretariat website.

The task force continued with the composition of a booklet of position papers from each of the INFRAEOSC-05 projects that entailed information and insights into their contribution to the EOSC. Moreover, an animated video brief was created and published at the EOSC-Hub week.

As part of the outreach actions, the task force worked on the development of a dedicated page, hosted on the EOSC Secretariat platform, that features informative video interviews and presentations from experts within the EOSC community, covering various EOSC-related topics.

Some additional outcomes were, the provision of input for the "Call5 projects collaboration documents"<sup>8</sup>, and the organization of interviews with the EOSC Association Board.

Finally, the task force tried to build on work done by the Skills & Training task force in an attempt to define user personas for the EOSC services.

### **FAIR Data and Infrastructure Task Force**

This task force represents a coordinated effort to express the shared views of the EOSC a/b/c projects on FAIR uptake. This FAIR synchronization initiative was coordinated by EOSCsecretariat.eu and managed to bring together the FAIRsFAIR project along with the five INFRAEOSC-5b projects to provide a stage for collaboration and common actions towards the uptake of FAIR in the whole European region. The following mutual actions have been agreed upon as aspects of collaboration:

- Review and standardization of FAIR policies to enable FAIR-aligned services and repositories.
- Analysis of FAIR guidelines and standards to enable adoption in the light of the local and disciplinary context.
- Evaluation and development of FAIR technical aspects including metadata frameworks, interoperability, service infrastructure, FAIR software.
- Assessment, extension, or establishment of FAIR certification schemes for repositories and services. The uptake in communities and on national levels is of special importance.
- Development and adaptation of FAIR assessment tools. These tools include DMPs, licenses and datasets.

The FAIR Task Force facilitated its goals through a series of meetings in which the members discussed their recent updates on the five above topics and initiated collaborations around the five actions mentioned above.

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<sup>8</sup> <https://www.eosc.eu/news/eosc-association-regional-national-communities-interviews-board>, accessed on 15.02.2023.

The task force provided a 'space' for building up bilateral collaborations and foster the exchange of views and ideas with other projects. The following joint events were organized in that regard.

- On the 30th of March 2021, the InfraEOSC-5 FAIR data and infrastructure taskforce meeting set up a webinar in which NI4OS-Europe was given stage to present in detail two of the ORDM tools developed within the framework of NI4OS-Europe RePol and LCT. Namely, NI4OS-Europe WP4 leader Dr. Branko Marovic presented the ORDM tool Repository Policy Generator – RePol (<https://repol.ni4os.eu/>). In addition, Panagiota Koltsida presented the Licence Clearance Tool – LCT (<https://lct.ni4os.eu/lct/login>). The two ORDM tools attracted the attention and the interest of all the participants from all the INFRAEOSC-05-2018-2019 projects and the scenario of testing the tools in use cases had been discussed.
- On the 21st of September 2021, at the Open Science Fair a collaborative workshop has been organized, together with FAIRsFAIR, on: "Speaking FAIR Implementation: Moving from recommendation to supporting practical implementation of service providers"<sup>9</sup>.

### **National Policies and Governance Task Force**

The National Policies and Governance Task Force has helped identifying shared progress indicators, which were later taken further by the Landscaping taskforce to track project internal progress and actions. The task force has identified its focus areas in the harmonization of national policies and collaborative analysis of the landscaping for gaps and areas of interest. The input with which the taskforce has worked on has been a compilation of diverse activity outcomes that derived from the INFRAEOSC projects and are relevant with Open Science and or Data policies. NI4OS-Europe provided a major contribution to the definition of the TF's focus and outcomes, based on the related work already performed in the context of setting up National Open Science Cloud Initiatives.

The subject of the taskforce has been horizontal in nature and does not have an equivalent Executive Board (EB) Working Group (WG). During initial stages of operation, the National policies and Governance and the Landscaping task forces collaborated in under the objective to support the EOSC Executive Board Landscaping Working Group. Developments on harmonizing policies in international context were considered important early in 2021, where the taskforce progressed with the collection of priority topics that the INFRAEOSC-5b projects were working on. This effort resulted in the organization of "Policies round table" at the EOSC symposium (15-18 June 2021) where representatives of the INFRAEOSC-15b projects discussed a range of questions delicately prepared by the taskforce in advance. In September 2021, the taskforce prepared a workshop at the OSFAIR21 conference titled "Let's discuss FAIR-ifying OS policies"<sup>10</sup>. The workshop focused on identifying priority action areas required to achieve the FAIRness of policies with contributions that showed the need for policy harmonization.

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<sup>9</sup> <https://zenodo.org/record/5547916#.Y8VJYnZBy5e>, accessed on 15.02.2022.

<sup>10</sup> Detailed results of the workshop available at, <https://www.openaire.eu/blogs/let-s-discuss-about-fairifying-os-policies-1>

Representatives of the TF were invited and participated in the EOSC Monitoring Workshop 'From Policy to Practice' organized by the EOSC Steering Board in October 2021. Additionally, the taskforce reviewed and commented on the survey on national Policies that was organized to find out the implementation status of Open Science policies and progress in the EU Member States, as well as to help develop continuous monitoring of Open Science progress. Finally, a compilation of the work done highlighting recent policy recommendations was presented during the EOSC Policy event on May 2022 in Strasbourg which unofficially concluded the work of the Task Force.

### **Landscaping Task Force**

The Landscaping TF has been one of the first ones established, as it addressed a topic that has been considered as a priority, both by the INFRAEOSC-05 and the EOSC Executive Board. In fact, several discussions took place about its focus and relation to the EB Landscaping TF, that was running in parallel. The work of the TF shifted gradually from the activities that captured existing landscape to the discussions on the need to investigate indicators for assessing EOSC readiness and as a means to engage all actors of the EOSC ecosystem.

In coordination also with the EB's Landscaping WG's, the Landscaping TF has conducted two rounds of open consultations for the EOSC interested stakeholders while also members of the taskforce have actively contributed by defining EOSC readiness to the composition of the Landscaping report produced by the counterpart EB working group. Based on the results of the first round of consultation, during the EOSChub week, the taskforce has published the report titled as 'Working Proposal for Living Indicators to Monitor MS Progresses towards EOSC Readiness'<sup>11</sup> that aimed to reply to questions on the usefulness of indicators, responsibility to monitor indicators, and evaluation of an initial list of proposed indicators. This document was validated and commented on during the second round of open consultation, from 24 July to 4 September 2020, and was presented at the Landscape Final Validation workshop in September 2020. A consolidated report highlighting the consultation results and presenting an initial list of EOSC readiness indicators in Member States and Associated Countries was finalized in January 2021. Further building on defining EOSC readiness indicators, the task liaised with the external contractor T6 Ecosystems, towards the development of a Proof of Concept (PoC) of a platform and dashboard to live monitor the EOSC readiness indicators within the EOSC Association and Member States. After a six-month development, the PoC was presented to the EOSC Association as a potential useful tool for further development.

Finally, it is worth mentioning that while the landscaping activities provided a fundamental building block for the development of EOSC at the initial stages, the multiple related initiatives that run in parallel (EOSC EB Landscaping WG, INFRAEOSC-05 TF, EOSC SB) required a higher level of coordination, to avoid any overlaps and repetitions.

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<sup>11</sup> <https://zenodo.org/record/4312793#.Y-zZcHZBxPY>, accessed on 15.02.2023.

### *3.2. FAIRsFAIR*

FAIRsFAIR project has played a key role in the promotion and adoption of FAIR principles across Europe as part of the European Open Science Cloud initiative. The NI4OS-Europe project has established an active collaboration with FAIRsFAIR, spreading and speeding up the uptake of FAIR also at NI4OS-Europe range and strengthening the impact of the related NI4OS-Europe activities.

NI4OS-Europe initiated direct communication with the FAIRsFAIR coordination team and the respective partner that leads the activities of FAIR uptake and FAIR Competence Center. It is in the NI4OS-Europe areas of attention on how to support communities in their FAIR data uptake and compliance efforts, while also promoting and coordinating efforts across communities, identifying opportunities for synergies, and establishing feedback mechanisms with the relevant communities.

One important aspect of NI4OS-Europe's efforts to promote FAIR uptake in the region was the appointment of translation officers. FAIRsFAIR from its standing point recognizes the importance of being accessible to audiences across Europe and provided materials related to FAIR principles and other relevant topics that were channeled through NI4OS-Europe and translated into local languages.

Additionally, both projects collaborated in organizing training events. For example, FAIRsFAIR provided trainers for several topics presented in train-the-trainer events. For instance, in the first train-the-trainer event focusing on "FAIR principles" hosted by the University of Debrecen on January 17th, two of the trainers were data management experts from DANS, a participant in the FAIRsFAIR project.

### *3.3. Horizontal liaison with INFRAEOSC-05 collaboration*

#### **Workshop on National Policies Relevant to EOSC Deployment<sup>12</sup>**

On 4 May 2022, and as a part of a 2-day programme for EOSC Policy, in Strasbourg, NI4OS-Europe partake in the co-organizing team together with EOSC Future, FAIRsFAIR, EOSC Synergy, EOSC Nordic and ExPaNDS, that assisted ESOC-Pillar in conducting the workshop, 'National Policies Relevant to EOSC Deployment: Status, gaps, and steps towards harmonization'. NI4OS-Europe participated with two members in the Programme Committee that dealt with the definition of the event focus and the organization of it.

During the workshop, the findings of the regional EOSC projects on national open science, funding, and access provisioning policies were presented. The workshop was organized following the EOSC Policy Event, that was organized by EOSC, and aimed to bring together the regional EOSC projects that were entering the last year of their operation.

Representatives from NI4OS-Europe presented project findings that highlighted the diversity of the level of maturity of OS policies, RIs, research and education policies in Southeast Europe (SE). While also expanding to governmental changes that affect the introduction and implementation of OS policies and the lack of sustainable structures to

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<sup>12</sup> Details available at: <https://zenodo.org/record/6584214#.Y-4PTnZBxPY>

encourage scientific collaboration in the region. The establishment of NOSCIs was advocated as a potential solution to the fragmented policy landscape of the SE that will facilitate the coordination, and synergy establishment as well as potential resource provision from national or EU sources for the research communities. Moreover, the Open Call launched in April 2022, was introduced to the workshop, also presenting the successful applicants with access to services available in the NI4OS- Europe Catalogue, also integrated with the EOSC Portal.

### **Position papers on EOSC**

The seven key Horizon 2020 projects related to EOSC signed a collaboration agreement to support the EOSC Governance. The agreement involved all the projects supported within the INFRAEOSC-05-2018-2019 call and provided a framework for collaboration on a wide range of topics related to the EOSC. During May 2020, the INFRAEOSC 5b projects (EOSC-Nordic, EOSC-Pillar, EOSC-Synergy, NI4OS-Europe, ExPaNDS, 4 regional and one thematic) coordinated activities that involve their stakeholder networks and produced a collection of position papers<sup>13</sup>, compiled by the EOSCsecretariat, that aimed towards the identification of overlaps and complementarities among the projects and specific areas for potential cooperation in the development of a common strategy for the EOSC.

### **Workshop on Integrating national and thematic catalogues into the EOSC Portal**

Over the spring and summer of 2021, the NI4OS-Europe team coordinated with EOSC Enhance, to work on a pilot that would integrate national, regional, or thematic existing catalogues with the EOSC Portal. The EOSC Portal is part of the European Open Science Cloud implementation roadmap as one of the expected “federating core” services contributing to the implementation of the “Access and Interface” action line. It provides a European delivery channel connecting the demand and supply sides of EOSC and its different stakeholders.

As a follow-up of the two projects collaboration on the pilot, a webinar was organized and took in place October 2021, that offered the opportunity to the participants to observe the first tangible results, hear directly from providers who have successfully onboarded their resources into the Portal, as well as get informed into the next steps planned to progress with this task.

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<sup>13</sup> <https://zenodo.org/record/3831561#.Y-omjnZBxPa>, accessed on 15.02.2023.

## 4. Liaison at national level

In this section, different types of liaison activities are presented. These liaison activities cover different angles on stakeholder actions that took place and enhanced the liaison developments and overall impact of NI4OS-Europe project at regional and national level.

### **Liaison with government authorities**

The liaison with government authorities and mainly with the respective Ministries that deal with the promotion of Open Science at national levels, was and continues to be crucial for achieving the NI4OS-Europe project goals.

Support from public authorities plays a major role in shaping the research landscape, including funding and supporting research, shaping the policy landscape, and setting priorities for resource provision. The collaboration of NI4OS-Europe partners with the respective Ministries, was a way to ensure that the research community is aligned with national priorities, can apply for access to funding and resources, and can contribute towards the implementation of Open Science principles at national level. Additionally, this liaison builds towards enhancing the support and visibility for Open Science, which in turn increases the publics and research communities trust to Open Science research and helps to build more transparent and inclusive research culture.

Furthermore, in the case of liaison with governmental authorities, fostering a close connection with the associated Ministry(ies) has played a key role as described above. On that regard, it was observed that significant effort was put from multiple NI4OS-Europe partners to creating tighter or looser links with their national OS related government institutions.

NI4OS-Europe partners in various countries have actively promoted the involvement of government agencies and national ministries in the signing of NOSCI Memorandums of Understanding (MoUs). Meetings to enable extensive planning, organizational arrangements and resource provision negotiations have been held with policy makers and ministerial officers to consolidate the NOSCI.

Beyond the official ratification of NOSCI, this liaison has contributed to the co-organization of events promoting Open Science and that introduce and present the newly established NOSCI in the network of national stakeholders. Indicatively two cases will be mentioned where in Georgia, the Ministry of Education and Science hosted the conference "EU-Georgia - Full Involvement in Horizon Europe" where the Georgian NI4OS-Europe partner opened the event. Similarly, in Montenegro, the festival "Open Science and EOSC" was organized by the Ministry of Science and Technological Development, with the national NI4OS partner having a key role in the prosecution of the event.

Additionally, the co-operation of NI4OS partners and government authorities extends to the contribution in the development of key strategic Open Science documents. In more detail, members of the Open Science Working Group have participated in meetings with policy makers from the Ministry of Education and Science to provide contributions and advice in strategic documents such as the National Open Science Plan, which outlines Bulgaria's open science vision for the next five years. To support the development of Open Science in Bulgaria, funding institutions like the National Science Fund of Bulgaria and the

Ministry of Education and Science are providing support to projects in the area. The Open Science Knowledge Hub Romania has made a significant contribution to the development of the strategic document "The White Paper of the Transition to Open Science (2022-2030)" under the coordination of the Ministry for Research, Innovation and Digitalization and with the consultation of other nationwide experts. Policy makers are being supported with information on the EOSC priority as a crucial research infrastructure objective and the current collaborative EOSC governance solutions. Negotiations with the Ministry of Education and Research of Moldova and the National Agency for Research and Development (NARD) on funding OS activities and the establishment of the MD-NOSCI have taken place, resulting in the submission of an updated NOSCI Establishment Roadmap to the Ministry. In North Macedonia, UKIM continued to work with the Ministry of Education on OS policies, repository modules, and integration of thematic repositories. The University of Montenegro has taken part in the creation of national strategic document "Program of Implementation of Open Science Principles in Montenegro with the Action Plan (2020-2022)" which was adopted by the Government of Montenegro in June 2020.

Finally, the most prominent collaboration of government authorities and NI4OS-Europe actors and related stakeholders can be seen in Cyprus. After extensive discussions among the involved parties a new "National Policy of the Republic of Cyprus for Open Science Practices" was approved by the Council of Ministers on May 2022. This action was planned as a follow-up of the first National policy for Open Access in Cyprus (approved February 2016) identifying that a revision of the policy was necessary in order to address the rapid change of the research ecosystem and fulfill all the requirements of the new Open Science era. NI4OS-Europe Cyprus team and OPENAIRE Cyprus NOAD, were highly involved to the policy preparation and collaborated closely with the Deputy Ministry of Research, Innovation and Digital Policy. They undoubtedly will continue to support all the local efforts to the implementation of the policy and the establishment of Open Science as the new research norm.

### **Liaison with Open Science stakeholders at national level**

Collaboration with OS stakeholders at national level is a crucial step to ensure that resources and efforts are effectively utilized in a way that the local research communities benefit the most.

The close cooperation of multi-actor Open Science initiatives benefits from the variability of expertise and resources that each stakeholders brings while in parallel advancements take place towards the widespread adoption open science practices and policies. The NI4OS-Europe project has recognized the importance of liaising with national stakeholders and has strived at project and partner level to actively engage with them to promote the adoption of open science practices in SE Europe. This engagement has been implemented on the principles of,

- Bringing together multiple actors with a common goal to collaborate and share resources, knowledge, and experiences.
- Facilitating communication and collaboration among stakeholders to advance the implementation of Open Science policies and practices.
- Building a shared understanding and promoting consensus on the objectives and benefits of Open Science at national level.

- Offering a platform for discussion (in the form of NOSCI) and decision-making on key issues related to Open Science.
- Increasing the visibility and impact of Open Science initiatives by leveraging the collective reach and influence of the liaising parties.
- Fostering the development of sustainable and effective partnerships for Open Science.
- Enabling collective advocacy for the adoption of Open Science practices and policies at national level.

The NI4OS-Europe project partners have been actively promoting Open Science and EOSC activities by engaging with national stakeholders in their countries. Extended effort has been put by all partners to proliferate NI4OS results into the national stakeholder networks, though only some noteworthy actions will be mentioned here. In Armenia, Bulgaria, Greece but also other partnering countries several meetings were organized among OS stakeholders to finalize the NOSCI's MoU and collect signatures feedback and arrange final adjustments. In Croatia, a webinar on research data management and FAIR principles was held to promote Open Science and align repositories with OpenAIRE Guidelines. The SRCE lead the development of NOSCI Croatian Open Science Cloud and organized a webinar for repository managers to educate them about the OpenAIRE registration process. In Hungary, a number of major universities and research institutes have applied to host seminars on topics related to Open Science in 2022. They are also cooperating with the National Network of Research Institutions to develop digital content based on the EOSC workshops. Additionally, in Romania, the NOSCI partners have been promoting the benefits of the European Open Science Cloud (EOSC), its recent development, future plans, and the RO-NOSCI incubator, in cooperation with relevant stakeholders of the national research community as well as taking part in the community effort engaged in the public consultation for the Green Paper on the Transition to Open Science 2023-2030. Furthermore, the University computing Centre in Zagreb lead the community effort to align repositories with OpenAIRE Guidelines for Literature, institutional, and thematic Repositories, while in similar vein in Serbia, UoB opened a new branch of activities related to open-source software in open consisting of an assessment of community understanding of FOSS in OS. Partners from Serbia and Croatia have joint efforts that led to the co-organization of a hackathon on data in Agora, on service data quality criteria and checks, as well as recommendations on FOSS for researchers, providers, and developers in OS. One other significant liaison activity has taken place in Moldova where a collaboration with MINERVA project has started to support the formation of institutional policies and contribute to the functionality of the institutional repository of ASEM – IREK, while also in Moldova the National Centre of Transplantology has been invited to codevelop a roadmap for the future development of a repository that could be onboarded to the ESOC resources.

Finally, numerous liaison activities across countries in the SE region have been organized by the NI4OS-Europe partners in reaching and co-organizing dissemination events together with public and private universities with the aim of raising awareness of the benefits of establishing OS policies on institutional level and to promote the membership and possibilities offered by the NOSCI.

### **Organization of National Events and NOSCI promotion**

Several national events have been organized across the SE Europe aiming towards the establishment of National Open Science Initiatives and the promotion and outreach actions of their set actions and goals. National events have also served as a supplementary mean to build strong communities and strengthen the liaison with other national OS stakeholders as well as relevant government authorities, the importance of which has been stressed out in the former parts of this section.

Such events have provided an opportunity to raise awareness and visibility of open science and its benefits, identify how an open science initiative could be successful and to engage in discussions and debates on the challenges and opportunities for the operation of NOSICs and open science targets in general. National events have contributed to the exchange of ideas and experiences among different stakeholders, leading to the consolidation of NOSICs and to the creation of a common understanding and shared vision for Open Science.

When it comes to events conducted at national level, inside 2022, NI4OS-Europe partners from the countries of Greece, Georgia and Slovenia have managed to liaise with local governance institutions and EOSC Members or mandated organizations towards the actualization of national Tripartite Events that have contributed to boosting the support and coordination between ministries and research performing organizations, services providers as well as the research communities in general.

Similarly, the Croatian NI4OS Europe partner SRCE has started to develop plans to organize and coordinate the first National Tripartite Event in collaboration with the European Commission and EOSC Association that will bring together national and international stakeholders and raise the visibility of EOSC and the EOSC Association in the country. Also in Croatia, a dissemination event was held as part of the Conference SRCE DEI 2022 where NI4OS-Europe was presented in a theme block on the Croatian Open Science Cloud (HR-OOZ).

In Hungary, four Open Science Forums have taken place between January 2022 and January 2023 that contributed to inform the research community about recent Open Science developments and particularly those related to EOSC. In Romania, UEFISCDI collaborated on the EOSC dedicated event "The Road towards EOSC as seen from the national level" with The Authority for Digitalization of Romania and the Technical University of Cluj-Napoca. The event provided an opportunity to discuss the importance of developing the European Open Science Cloud (EOSC), the challenges towards it, and the current support initiatives that take place in Romania. In Bulgaria, the National initiative for Open Data and Cloud Computing, was held on October 2022 hosting also a special session on "HPC and Open Science" with several partners of the Bulgarian NOSCI taking part into it. Moldova promoted EOSC and Open Science development perspectives at the national level by realizing two NI4OS-Europe national dissemination events in collaboration with national organizations such as the Information Society Development Institute and the Moldova State University and Technical University of Moldova. In Montenegro, the Ministry of Education, Science, Culture and Sports of Montenegro organized an online event on the introduction of Open Science in Montenegro in cooperation with the Central European Initiative and with the support of the NI4OS-Europe project.

### **Collaboration on training events at national level**

The collaboration between NI4OS-Europe and other EOSC projects that took place also inside the boundaries of the Training & Skills task force and other working groups has enabled high quality training activities that were disseminated and aligned with the wider EOSC community. The NI4OS-Europe partners have made progress on both upskilling their internal capacity for training via the train-the-trainer events and supporting training materials and training a wide range of different stakeholders in their respective countries with the national capacity building and end-users training events. This collaboration has resulted in the sharing of expert knowledge and experiences, leading to well-organized training events and materials. The training events have emphasised on the national training with two national training events per partner that focused on, capacity building training event aiming at service providers, e-Infrastructure experts and data repository managers, and subsequently training event focused on, end-users training reaching out to academia, research groups and libraries.

Although, 30 in total national training events took place, 1 capacity building and 1 end-user per partner as described above and presented in detail at D 6.6 'Training Report'<sup>14</sup>, we will cite only selected training events that have been organised by the NI4OS-Europe partners and are products of liaison activities that aim to respond to the high requirements for training in different EOSC and FAIR aspects.

- Romania, March 10<sup>th</sup>, 2020, part of the national series of mutual learning workshops

The "Open Science and landscaping and strategic development in Romania" has been organised by UEFISCDI via the Open Science Hub Romania with the aim to discuss the development of the Open Science strategic framework. Thematic sessions aimed at discussing the national view of topics such as article processing charges, RDM, open access and OS metrics. The speakers' list included representatives of the Ministry of Higher Education, Research and Innovation from France, TU Delft, EIFL-OpenAIRE, and Trinity College Library.

- Croatia, April 6<sup>th</sup> and 7<sup>th</sup> 2022, NI4OS-Europe, SRCE DEI 2022

NI4OS-Europe project was part of the thematic block Croatian Open Science Cloud Initiative as part of the Conference SRCE DEI 2022 in Zagreb on 6<sup>th</sup> and 7<sup>th</sup> April 2022. The conference was attended by more than 400 participants who participated face to face or online. During the thematic block focusing on the Croatian Open Science Cloud Initiative the results of the work of both task forces of the Initiative were presented, as well as several examples of the onboarding process of thematic and generic services and repositories in the European Open Science Cloud (EOSC). The NI4OS-Europe onboarding procedures for thematic and generic service and repositories were also presented during the sessions.

- North Macedonia, February 10<sup>th</sup>, 2022, Open Access PhD webinar

Recognising the need to spread awareness of EOSC and promote the use of the Open Science principles among young researchers, UKIM has made strategic changes to the

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<sup>14</sup> <https://zenodo.org/record/7127852#.Y-zgR3ZBxPY>, accessed on 15.02.2023.

PhD studies curricula on the university level under the guidance of the NI4OS-Europe national activities. As a part of these changes a webinar series has been organised aiming to provide additional training on the topic of Open Science and EOSC for all university PhD students. One of the webinars in these series was given by NI4OS-Europe on the topic of Open Licences & Publishing.

- Cyprus, 2022, OpenAIRE and NI4OS-Europe webinar series on Open Science

NI4OS-Europe UCY and Athena RC partners have joined the OpenAIRE GR and CY NOADs in a series of webinars for the growing Open Science community aiming to further promote relevant issues and tools related to NI4OS-Europe. 5 webinars have been organised in total in the period from June 2020 till March 2022. The topics covered include Interoperability with EOSC, Interactions and contribution to Open Science, License Clearance Tool (LCT), RoP Legal & Ethics Compliance Tool (RoLECT), Designing privacy and repository policies with RePol.

- Republic of Moldova, May 20<sup>th</sup>, 2021, “Open Science Tools for Researchers” Workshop

In the context of the Europe Days 2021 in Moldova, the Moldova State University (MSU) and RENAM Association with support of NI4OS-Europe project organized the workshop “Open Science Tools for Researchers” on May 20<sup>th</sup>, 2021. The event, which took place online, was attended by 55 researchers, PhD students, stakeholders from Moldovan R&E institutions: universities, research institutes, libraries, etc. The event was focused on the promotion of Open Science Tools use by the national research and educational community and raising awareness about EOSC. Among other topics discussed contribution of the NI4OS-Europe and other international and national projects to the forming of OS ecosystem in Moldova and the role of National Open Science Cloud Initiatives.

- Greece, October 21<sup>st</sup> and 22<sup>th</sup> 2021, Open Science Days in Greece

The NI4OS-Europe project contributed to the hybrid event ‘Open Science Days in Greece’ with presentations on both days. The event hosted colleagues and exceptional personalities from Greece and the European region, presented case studies from other countries on designing and implementing Open Science, and proposals to strengthen communication and cooperation with local policy communities. More specifically, the Greek audience informed about the NI4OS-Europe developed License Clearance Tool (LCT)<sup>15</sup>, the EOSC Rules of Participation Legal and Ethics Compliance Tool (RoLECT)<sup>16</sup>, and the Repository Policy Generator (RePol)<sup>17</sup> tools.

- Romania, July 7<sup>th</sup>, 2021, online, “FAIR tools and services, guidelines and best practices”

The webinar presented FAIR tools and services, guidelines, and best practices from the EOSC-related projects FAIRsFAIR and NI4OS-Europe. The target audience included data support staff, data stewards, researchers, and data policymakers. The event was included

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<sup>15</sup> <https://lct.ni4os.eu/lct/login>

<sup>16</sup> <https://rolect.ni4os.eu/rolect/auth/login>

<sup>17</sup> <https://repol.ni4os.eu/>

in the FAIRsFAIR National Roadshow Series and organized in collaboration with the Open Science Knowledge Hub Romania, UEFISCDI.

## 5. Collaboration with other projects and initiatives

The NI4OS-Europe project has participated in and been visible in several events during its lifespan. Both at project level, and on individual partner basis, numerous liaison activities of various types have been conducted, with external actors and initiatives. The types of events cover everything from large events promoted by the European Commission to scientific conferences, international conferences, and regional and local events where liaison and synergies has been fostered building towards the proliferation of NI4OS-Europe outcomes and expanding the project's impacts in a wider range. The project's presence and visibility play a key role in the opportunities for ensuring the broad dissemination of the project's work and results for liaison and sustainability purposes.

### **Ontocommons**

NI4OS-Europe liaison activities at project level were partly facilitated through the introduction of a new 'Metadata, Ontologies and Semantics' Expert Group. This Expert Group has been initiated in a bottom-up way between representatives of the NI4OS-Europe and the Ontocommons projects and served largely as the major liaison link between them. This collaboration led to the organization of various workshops and meetings that aimed at defining requirements elicitation through discussions conducted with service providers, and exchanging knowledge on the practical implementation of metadata, ontologies and semantics.

In more detail:

The **OntoCommons** project and the NI4OS-Europe Group of Experts on Metadata, Ontologies and Semantics formed a bilateral collaboration, attracting the attention of other Horizon 2020 projects. This partnership resulted in co-organizing several workshops, including the "*Becoming Part of EOSC: learn how to prepare your services*" workshop on October 18th, 2022.

The NI4OS-Europe project played a crucial role in the event, providing the tools and workflows for onboarding services to the European Open Science Cloud (EOSC) in the Southeast European region, while the OntoCommons project emphasized the best practices for ontologies in EOSC. The goal of EOSC is to create a "Web of FAIR data and services", supporting cross-country and interdisciplinary access and interoperability in European research outputs to drive innovation and market competition.

By participating in EOSC, services and data benefit from enhanced collaboration and visibility, leading to a better flow of scientific information and increased citations. The event was structured so that by the end, participants could navigate the NI4OS-Europe catalogue, understand the steps for onboarding their services to the EOSC Catalogue, use new tools to comply with the EOSC Rules of Participation, and have their questions answered. The event aimed to support Open and FAIR research, ensuring researchers' competences and compliance with EU Open Science requirements.

The closing workshop of the group took place on the 15<sup>th</sup> of February 2023 and focused on "Practical metadata applications: Ontologies and semantic tools for data management".

## **Skills4EOSC**

The MoU between NI4OS-Europe and Skills4EOSC was finalized in November 2022, outlining the intentions of the two projects for future collaboration. This MoU focuses on training aspects, since this is the main engagement area of Skills4EOSC.

This MoU covers a range of areas including supporting collaboration on training materials and platform implementation, sharing of training materials and best practices, cooperation on defining a FAIR-by-design training methodology, strengthening quality assurance processes, and stimulating cooperation in the field of Open Science and EOSC training. Moreover, it includes cooperation on mapping competences, professional networks, and open science cloud communities, as well as on dissemination and communication actions.

## **OpenAIRE**

NI4OS-Europe liaised closely with OpenAIRE on various aspects and levels. OpenAIRE supported the technical and policy objectives of NI4OS-Europe by both, offering its infrastructure and tools, and mobilising its human network of experts, I.e. the OpenAIRE NOADs, to achieve them.

### A. Technical objectives for repositories onboarding

OpenAIRE is a pillar infrastructure to the EOSC realisation contributing to the Architecture and the EOSC Interoperability framework. In NI4OS-Europe, OpenAIRE provided the tools, such as the Metadata Guidelines and Validator, coupled with training, tailored advice and support to complement the project onboarding activities of repositories. The outcomes were increased compliance with the Open Science requirements reflected in Horizon 2020 and Horizon Europe policies, alignment with EOSC interoperability and increased FAIRness with metadata enrichment events via the Broker service.

### B. Policy objectives and support to the NOSCIs establishment

The overall purpose of OpenAIRE NOADs is to achieve the ambitions for Open Science at both European and national levels through promoting Open Science practices and raising awareness in the country, building capacities through training as well as promoting alignment on Open Science for informed policymaking and adoption of FAIR interoperability guidelines and standards in their national research ecosystems. In NI4OS-Europe, OpenAIRE NOADs brought their Open Science expertise and experience in policy, training and community building along with their strong connections with key national research stakeholders, particularly research funders and Ministries, whom they have been collaborating since 2009 to align their national settings with the EU developments on Open Access, moving on to RDM, Open Science and now EOSC.

At national and local levels, NOADs have nurtured collaborations with key research stakeholders to support the national Open Science alignment, which today evolves mainly in national funder policies and national Open Science policy initiatives. Examples of NOADs assuming the role of focal points for Open Science in their country and supporting their Ministries with Open Science policy adoption and implementation are: Croatia, Cyprus, Estonia, Greece, Ireland, Lithuania, Portugal, Serbia, Slovenia, Sweden.

From the above it is evident that the NOADs' objectives have been very much in line with NI4OS-Europe's key priority to establish NOSCIs in the NI4OS-Europe area and greatly supported the related activities.

It is worth noted that not all the NI4OS-Europe countries had an OpenAIRE NOAD when the project started, and that some realised the benefits of the OpenAIRE network and applied to become members, such as the examples of BiH and North Macedonia.

### **EOSC Future**

A strong liaison with EOSC-Future has been built, focusing on joint actions regarding dissemination in the Western Balkans. Several NI4OS-Europe events were done in collaboration with EOSC-Future, as follows.

#### National Capacity Training in North Macedonia, 15.10.2021, online<sup>18</sup>

With over 100 registered participants, the presenters on the webinar had the opportunity to introduce the interested participants to the current development efforts concerning EOSC and the open calls and activities that they can actively participate in. Organized by NI4OS-Europe project, in collaboration with EOSC Future, the training participants were also brought up to date with the changes in the EOSC portal and the plans for the future EOSC related open calls.

#### National End Users Training, Montenegro, 24.05.2022, Podgorica<sup>19</sup>

The national end users training event in Montenegro organized by the NI4OS-Europe project, enabled participants to get more acquainted with the activities of the EOSC Future project and the advancements related to the EOSC portal. Special attention was given to how users can join the current activities and how they can take advantage of the existing onboarded EOSC services.

#### National End Users Training, Bosnia and Hercegovina, 31.05.2022, Banja Luka, hybrid<sup>20</sup>

The participants on the national end users training in Bosnia and Hercegovina were introduced to the goals and organization of the EOSC Future project. A practical presentation related to the updates in the EOSC portal were provided together with information on how to actively participate in the design and building of EOSC. The event was part of the NI4OS-Europe national end-users training events.

#### National End Users Training, Albania, 20.06.2022, Tirana, hybrid<sup>21</sup>

As part of the NI4OS-Europe national end-user training events, within this event a special session was dedicated to the current activities within the EOSC Future project, focusing on the ones wherein the participants could be actively involved such as the Early Adopter

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<sup>18</sup> Details at: <https://ni4os.eu/2021/10/26/ni4os-europe-national-capacity-building-training-event-in-north-macedonia/>

<sup>19</sup> Details at: <https://training.ni4os.eu/course/view.php?id=115>

<sup>20</sup> Details at: <https://training.ni4os.eu/course/view.php?id=114>

<sup>21</sup> Details at: <https://training.ni4os.eu/course/view.php?id=129>

program and the Open Calls. The trainees were able to get familiar with the current and planned improvements of the EOSC Portal.

### **Event hosting and co-organization**

The presence and visibility of NI4OS -Europe project plays an important role in the opportunities for ensuring the broad dissemination of the project's work and results for both liaison and sustainability purposes. The following events are noteworthy milestones of liaison actions conducted in the last two years of the project and comprise the co-organization of events promoted between NI4OS-Europe and other organizations and initiatives.

- 2021 SEE User Forum: sharing experiences and gaining new insights into Open Science<sup>22</sup>

This event was jointly coordinated by GÉANT, NI4OS-Europe and EOSC Future providing the opportunity to more than 200 members of the NREN community of Southeast Europe to participate and share their experiences with the aim for all to gain new insights into Open Science and the supporting Infrastructure and services. The role of NI4OS-Europe in Open Science and the contribution of NRENs in Research works were the main topics of discussion that took place online on 3<sup>rd</sup> and 4<sup>th</sup> of November 2021.

- NI4OS-Europe at the 3<sup>rd</sup> Open Science FAIR<sup>23</sup>

The development and alignment of policies relating to Open Science -data management planning, data handling, and data accessibility, as well as NI4OS-Europe tools supporting Science throughout the EOSC have been among the topics that were discussed during dedicated workshops of the 3<sup>rd</sup> OSFAIR2021. OSFAIR2021 was held virtually from 20 to 23 September 2021, bringing together local and global Open Science communities to share their practices and explore new pathways of collaboration. Researchers, research institutions, funding agencies, policy makers, service and e-infrastructure providers, gathered in this virtual event, all engaging at various levels and learning from each other. NI4OS-Europe presence was strong, (co-)organizing two workshops and one demo session and participating to productive discussion in relation to FAIR principles, EOSC, legal aspects and Open Research Data Management (ORDM). Its members participated and presented the latest project developments, proposing recommendations, tools, and mechanisms with the objective to support EOSC and the Open Science community.

### **Cross-project collaboration for training activities**

For the NI4OS-Europe, training tasks have been in great extent collaborative outcomes produced with the contribution of other EOSC-related projects, fostering the exchange of knowledge and experiences on training-related topics. The main source for collaboration

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<sup>22</sup> Event information available at: <https://ni4os.eu/2021/11/05/see-user-forum-2021-sharing-experiences-and-gaining-new-insights-into-open-science-and-the-supporting-infrastructures-and-services/>

<sup>23</sup> Event information available at: <https://ni4os.eu/2021/10/05/ni4os-europe-at-the-3rd-open-science-fair-conference/>

was the INFRAEOSC5b Training & Skills Task Force, which facilitated communication with regional projects such as EOSC Synergy, EOSC Pillar, and FAIRsFAIR. The exchange of training expertise and materials allowed projects to coordinate their training activities and share their experiences with the shift to online learning. The INFRAEOSC5b Training & Skills Task Force was also instrumental in the exchange of best practices for organizing online events and defining learning paths.

With the help of the Task Force, members of the training task have participated in workshops organised on the topic of training catalogues interoperability and training metadata such as:

- Workshop on Harmonising Training Resource Metadata for EOSC Communities, April 14<sup>th</sup>, 2021, organised by FAIRsFAIR and Training & Skills Task Force.
- Workshop on Training Resource Metadata Testbed, January 19<sup>th</sup>, 2022, organised by FAIRsFAIR.

Training task members have also attended additional workshops organised by EOSC projects related to training activities such as:

- Workshop on Training in EOSC, 26-28 Feb 2020, organised by DANS in cooperation with the organisations EUDAT, EGI and OpenAIRE;
- Workshop on Designing EOSC training programmes for institutions, January 26<sup>th</sup>, 2022, organised by EOSC Future.

Moreover, the NI4OS-Europe semantic experts' group collaborates closely with the OntoCommons project in FAIR implementation. As briefly described in the beginning of this section, this collaboration has resulted in a number of workshops, among them the one on FAIR implementation for NI4OS-Europe service providers on April 29<sup>th</sup>, 2022. The outcomes of this collaboration, such as ontologies or other relevant outputs, are used by the NI4OS-Europe training task to develop FAIR training events and materials.

Additionally, the NI4OS-Europe training strategy for future EOSC skills development was presented at the e-IRG Workshop in May 2020. To engage with the training community, members of the NI4OS-Europe training task have participated in training-related EOSC working groups, including the Skills & Training Working Group and the Upskilling countries to engage in EOSC Task Force under the EOSC Association, also closely following the activities of the Community of Practice for Training supported by OpenAIRE.

## 6. Liaison with other regions

The following regional initiatives have been liaised with aim to promote the NI4OS-Europe regional model in the EOSC context.

Close cooperation has been established with Arab/ENP states (via ASREN – Arab States Research and Educating Network), as well as WACREN and Ubuntunet (West and East African Research and Education Networks, respectively). In the second project reporting period, this liaison has not been as smooth due to limitations imposed by COVID-19. The activities have picked up pace in the second half of 2022.

EOSC and FAIR principles as well as the overall status of EOSC in Europe and specifically in NI4OS-Europe area has been presented at the leading events in these regions. NI4OS-Europe typically featured in the dedicated Open Science and International Cooperation sessions in these events.

- O. Prnjat: "European Open Science Cloud in West Africa: opportunities for collaboration", WACREN 6th Annual Conference, 15-19 March 2021.
- O. Prnjat, participation in the panel "Open Science and Open Access", WACREN 2021 conference, 17 March, 2021<sup>24</sup>.
- O. Prnjat "Building a Regional Open Science Cloud: NI4OS-Europe", e-AGE21 conference, 13-15 December 2021<sup>25</sup>.
- H. Astsatryan – "eduroam deployment activities in Armenia" WACREN Workshop NRENs CEOs on 14th March 2022.
- O. Prnjat, "NI4OS-Europe Open Science Cloud platform", Regional Conference on "MARWAN: an innovation enabler through advanced e-Infrastructures", 13-14 October 2022<sup>26</sup>.
- O. Prnjat, "Developing sustainable regional infrastructures in Southeast Europe", Regional Conference on "MARWAN: an innovation enabler through advanced e-Infrastructures", 13-14 October 2022<sup>27</sup>.

The project coordinator, as member of WACREN Programme Committee, has also steered the formulating and structure of a dedicated Open Science session at WACREN 2021. Similarly, as a member of the Scientific Committee of ASREN, project coordinator has helped formulate Open Science contributions to the event programme for eAGE2021.

In the scope of WACREN 2021, Open Science policies and roadmaps and the international perspectives were the focus of the "Open Science and Open Access" dedicated session of WACREN 2021 online conference, held on 17 March 2021. The objective of the session was to provide updates on UNESCO's Global Open Science Partnership with international examples of national frameworks, followed by lightning talks from African countries implementing pilots to transition to Open Science, and to launch LIBSENSE national open

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<sup>24</sup> Details available at: <https://ni4os.eu/2021/03/18/open-science-policies-and-international-perspectives-were-discussed-at-wacren-2021-conference/>

<sup>25</sup> Details available at: <https://asrenorg.net/eage21/>

<sup>26</sup> Details available at: <https://asrenorg.net/?q=conference-marwan>

<sup>27</sup> Details available at: <https://asrenorg.net/?q=conference-marwan>

science policy roadmaps. NI4OS-Europe provided insights regarding its approach for enhancing Open Science Cloud and promoting EOSC at national and regional level, as an example in the discussions for the opportunities and perspectives of Open Science in West Africa.

e-AGE21 discussed the role of open science as a mean to progress the achievement of the UN SDGs through engagement of communities in Science, Research and Education. Openness included elements of 'Open Access', 'Open Data', 'Open Educational Resources' and 'Open Science Clouds and Platforms'.

Regional MARWAN conference focused on: Open Science and Open Science Platforms Open Access, Open Educational Resources; Clouds for research and education and Open Science Platforms including applications, infrastructures and platforms; Science Cooperation through sustainable infrastructures and open science environment; Scientific, Research and educational communities and communities of practice; NRENs to sustain and support research and education Infrastructures including connectivity, services, access to resources and enabling cooperation; The role of AfricaConnect3 LIBSENSE projects in supporting research and education. As stated by the organizers, "Open Science, Open Access and Open Data are now on the top of the agenda of each country and at the regional and international levels. UNSESCO has recently announced its recommendations on Open Science. Europe has also adopted the European Open Science Cloud to support the R&E communities. The NRENs services are not limited to connectivity provision. NRENs are expected to provide a set of services that enable collaboration and encourage joint projects and help the research and education communities to access scientific data repositories and computing resources. Furthermore, NRENs are now taking a new role in supporting new global trends in Science Cooperation, Open Science, Science Dialogue, Engagement with user communities and more". Two dedicated NI4OS-Europe presentations have given both a vision of innovative NREN services including support for EOSC and OS in general, as well as a role model for regional developments that can be applied in the Arab region covered by ASREN.

A dedicated train-the-trainer<sup>28</sup> session on "Future of EOSC" has been organized by NI4OS-Europe in cooperation with EOSC-Future. An invitation to this event has been extended to the networks of ASREN, WACREN and Ubuntu Net, with the aim of providing an opportunity for "master trainers" from these regions to get acquainted and trained in EOSC principles.

The participants of the train-the-trainer events were mainly from the NI4OS-Europe region, with the exception of this last event "Future of EOSC" where a number of participants from Africa (invitation being extended to ASREN, UbuntuNet and WACREN regions) have also joined the event which has led to the increased average number of participants.

### **La Referencia**

On 4th June 2021, an online meeting was held between NI4OS-Europe and LA Referencia, the Latin American network of open access repositories. The meeting was an attempt to bridge the regions of Latin America and Southeast Europe in relation with the OS targets

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<sup>28</sup> <https://training.ni4os.eu/course/view.php?id=118>

set by both, NI4OS-Europe and LA Referencia. As a first step each side explained the core activities and networks and explored potential areas for future collaborations.

NI4OS-Europe was represented by the Greek NI4OS-Europe partner, Athena RC, while LA Referencia was represented by its President and its Executive and Technical Secretary. From NI4OS-Europe part, the scope and objectives of the European Open Science Cloud (EOSC) as well as the role of National Open Science Cloud Initiatives (NOSCI) in EOSC Governance were presented, while LA Referencia informed about its network, which covers 11 countries in Latin America, its cooperations with other networks, and its relations with OpenAIRE. On that regard, NI4OS-Europe explained its contribution to harmonizing Open Science practices through training and onboarding of data services and repositories to EOSC.

This first reconnaissance meeting gave the opportunity to highlight the common lines between the two sides and provided a space for expressing interests and ideas for closer collaboration and future targeted liaison activities. It was identified that both, NI4OS-Europe and LA Referencia, provide support to a controlled number of countries, 15 for NI4OS and 11 for LA Referencia, identifying heterogeneous challenges on Open Science policies, FAIR maturity and regulatory status at the national level. In addition, both promote open infrastructures and ensure national repositories' access and interoperability by being compatible and interconnected. However, LA Referencia only supports policies on the implementation level and lacks a central funding mechanism.

It was agreed to explore further liaison opportunities to address shared issues and similarities, with the aim to expand both project's impact into new audiences that are beyond the boundaries of the SE Europe or Latin America regions. The OSFair conference, organised every two years, has been identified as possible opportunity, as it is an international event on all topics related to Open Science.

### **RDA**

An important collaboration and engagement dimension is the one related to the participation in broader Open Science and data management initiatives. NI4OS-Europe participation in well-established wide-range initiatives can provide the necessary resources to upscale national efforts and link the NI4OS-Europe stakeholder communities with larger international and scientific communities, which is of great importance for the development of inclusive and sustainable national ecosystems.

On that regard, NI4OS-Europe partners have demonstrated active involvement to the Research Data Alliance which serves as the European data forum for researchers and data stakeholders. Their contribution has been the following:

- Chairing RDA groups

Project partners, such as Athena RC, are leading interest and working groups for engagement of researchers with research data, early career and engagement and active data management plans. This involvement ensures sharing of project outcomes to international communities and getting feedback that can strengthen specifications and shape components of work in an agile way while providing input on new demands identified in the current landscape.

- Wider engagement in the RDA Plenaries

The ongoing engagement of NI4OS-Europe project with RDA via poster sessions and collocated events strengthened the presence of European researchers in the RDA Europe region. European researchers play a prominent role in the regional representation of RDA and actively contribute to the forum's activities, shaping the discourse on a wide range of data-related topics.

- Building on the RDA Europe National Nodes effort

RDA Europe was operating in a project level where some NI4OS-Europe partners assumed the role of National Nodes for RDA in the European region.

## 7. Appendix: EOSC Association Southeast Europe participation

Country	Type	Organisation	NI4OS-Europe
Albania	Mandated organisation	Rrjeti Akademik Shqiptar-Rash	X
Armenia	Observer	Institute for Informatics and Automation Problems of the National Academy of Sciences of the Republic of Armenia – IIAP	X
Bosnia Herzegovina	Observer	University of Banja Luka - UNI BL	X
Bulgaria	Member	Sofia University "St. Kliment Ohridski"	-
Croatia	Mandated organisation	University of Zagreb University Computing Centre – SRCE	X
	Observer	Ruđer Bošković Institute (RBI)	X
Cyprus	Member	European University Cyprus	-
Greece	Member	Athena - Research and Innovation Center in Information, Communication and Knowledge Technologies	X
	Member (pending approval by the GSRI to become the mandated organization)	National Infrastructures for Research and Technology - GRNET S.A.	X
	Member	OpenAIRE AMKE	-
	Observer	National Centre for Scientific Research "DEMOKRITOS"	-
	Observer	JNP Strategy and Management Consulting PCC	-

	Observer	Foundation for Research and Technology - Hellas (FORTH)	-
Hungary	Mandated organisation	Governmental Agency for IT Development (Kormányzati Informatikai Fejlesztési Ügynökség)	x
Moldova	Member	National Agency for Research and Development - NARD	-
	Observer	Institute for Development of Information Society - IDSI	-
N. Macedonia	Member	University Ss Cyril and Methodius in Skopje, Faculty of Computer Science and Engineering (FCSE-UKIM)	X
Romania	Mandated organisation	Institutul National de Cercetare-Dezvoltare in Informatica - ICI Bucuresti	X
	Member	University Ss Cyril and Methodius in Skopje, Faculty of Computer Science and Engineering (FCSE-UKIM)	X
	Member	University POLITEHNICA of Bucharest	-
Serbia	Member	Institute of Physics Belgrade-IPB	X
Slovenia	Mandated organisation	Academic and Research Network of Slovenia (ARNES)	X
	Observer	National Institute of Biology (NIB)	-
	Member	University of Maribor - On behalf of the HPC RIVR Consortium	X