

Final communications and outreach strategy report D6.5

| | |
|-----------|-------------------|
| Author(s) | Minna Lappalainen |
| Status | Final |
| Version | 1.0 |
| Date | 30.11.2022 |

| Document identifier: | |
|------------------------|---|
| Deliverable lead | Minna Lappalainen |
| Related work package | WP6 |
| Author(s) | Minna Lappalainen |
| Contributor(s) | Jonna Helenius, Anne Sofie Fink |
| Due date | 30.11.2022 |
| Actual submission date | 30.11.2022 |
| Reviewed by | Vilma Häkkinen, Ilja Livenson |
| Approved by | |
| Dissemination level | Public |
| Website | https://www.eosc-nordic.eu/ |
| Call | H2020-INFRAEOSC-2018-3 |
| Project Number | 857652 |
| Start date of Project | 1.9.2019 |
| Duration | 36 months (+3 months) |
| License | Creative Commons CC-BY 4.0 |
| Keywords | EOSC-Nordic |

Abstract:

This document designs a coordinated set of actions for communicating EOSC-Nordic efficiently and to ensure coverage of stakeholders and adequate visibility of the project, sustaining the engagement figures and achieving the required levels of collaboration with INFRAEOSC-related initiatives.

Copyright notice: This work is licensed under the Creative Commons CC-BY 4.0 licence. To view a copy of this licence, visit <https://creativecommons.org/licenses/by/4.0>.

Disclaimer: The content of the document herein is the sole responsibility of the publishers and it does not necessarily represent the views expressed by the European Commission or its services.

While the information contained in the document is believed to be accurate, the author(s) or any other participant in the EOSC-Nordic Consortium make no warranty of any kind with regard to this material including, but not limited to the implied warranties of merchantability and fitness for a particular purpose.

Neither the EOSC-Nordic Consortium nor any of its members, their officers, employees or agents shall be responsible or liable in negligence or otherwise howsoever in respect of any inaccuracy or omission herein.

Without derogating from the generality of the foregoing neither the EOSC-Nordic Consortium nor any of its members, their officers, employees or agents shall be liable for any direct or indirect or consequential loss or damage caused by or arising from any information advice or inaccuracy or omission herein.

EXECUTIVE SUMMARY

EOSC-Nordic has aimed to facilitate the coordination of EOSC (European Open Science Cloud) relevant initiatives taking place in Finland, Sweden, Norway, Denmark, Iceland, Estonia, Lithuania, and Latvia and exploit synergies to achieve greater harmonisation of policies and service provisioning across these countries, in compliance with EOSC agreed standards and practices. By doing so, the project has sought ways to establish the Nordic and Baltic countries as frontrunners in the take-up of the EOSC concept, principles, and approach.

The target of the WP6 - Engagement, communication, and competence building work package - was to support these objectives by maximising the project impact by focusing on engaging and communicating within the consortium and with external audiences.

The activities reported in this deliverable are based on the objectives, value propositions, and methodology outlined in D6.1 Stakeholder identification, engagement, and communication strategy, which was released at the beginning of March 2019 (M6). This document was setting out an active Engagement and Communication Strategy with identified stakeholders, including the objectives and the communication activities supporting the engagement of each targeted stakeholder group and the monitoring mechanisms to assess their evolution. This strategy was created in close collaboration with the other WP leaders as a part of the coordination of the work package activities.

This deliverable - D6.5 Communication and Outreach Strategy Report - offers an overview of the project's outreach and impact.

The text is divided into sections as follows:

- **Section 1:** Introduction.
- **Section 2:** Presents stakeholder engagement & impacts achieved.
- **Section 3:** Provides an overview of the dissemination and communication activities and the main achievements.
- **Section 4:** Presents outreach results M1-M36+3

D2.9 Sustaining the coordination of EOSC national initiatives at Nordic level summarises the key exploitable results generated by the EOSC-Nordic project for all stakeholders in a detailed way. The document also highlights the specific added value brought by the Nordic partners in the creation of such assets and analyse potential exploitation paths to sustain these outputs in the future. Finally, the document explains how the coordination around EOSC in the region initiated by EOSC-Nordic will be sustained in the future.

TABLE OF CONTENTS

| | |
|--|-----------|
| EXECUTIVE SUMMARY | 3 |
| TABLE OF CONTENTS | 4 |
| List of Figures | 5 |
| List of Tables | 5 |
| 1. INTRODUCTION | 6 |
| 2. ENGAGEMENT WITH THE STAKEHOLDERS AND IMPACT ACHIEVED | 8 |
| 2.1 The Knowledge Hub: A window to the EOSC-Nordic | 9 |
| 2.1.1 The brief concept of the Knowledge Hub | 10 |
| 2.1.2 The impact | 12 |
| 2.2 EOSC for Nordic and Baltic Researchers | 12 |
| 2.2.1 Impact | 13 |
| 2.3 EOSC for Nordic and Baltic Data Repositories | 14 |
| 2.3.1 Impact | 14 |
| 2.3.2 Use case: FAIRification | 14 |
| 2.4 EOSC for Nordic and Baltic Service Providers | 15 |
| 2.4.1 Maturity model | 15 |
| 2.5 EOSC for Nordic and Baltic Policymakers | 16 |
| 2.5.1 Impact | 17 |
| 3. MAIN ACTIVITIES AND ACHIEVEMENT M1-M36 (+3) | 18 |
| 3.1 Overview of main activities | 18 |
| 3.2 Website | 19 |
| 3.3 Newsletter | 20 |
| 3.4 Social media channels | 21 |
| 3.5 Events and webinars | 21 |
| 3.5.1 The flagship project events | 21 |
| 3.5.2 Other events | 22 |
| 3.6 InfraEOSC-5 projects | 24 |
| 3.6.1 Position papers | 25 |
| 3.6.2 Joint workshop and presentations at the EOSC-hub Week 2020 | 25 |
| 3.6.3 Joint video introducing the INFRAEOSC-5 collaboration | 25 |
| 3.6.4 Joint workshop, presentations and booth at the EOSC-symposium 2022 | 25 |
| 3.6.5 Joint presentations and panel discussions | 25 |
| 4. OUTREACH RESULTS M1-M36+3 | 26 |
| 4.1 Effectiveness of the communication and engagement | 28 |
| 4.2 Key performance indicators | 29 |

List of Figures

| | |
|--|----|
| Figure 1. The EOSC-Nordic objectives | 6 |
| Figure 2. The relevance of the different work packages' activities to each key stakeholder community | 8 |
| Figure 3. Launching the Knowledge Hub | 9 |
| Figure 4. Description of the stakeholders in the "Users and Organisations" entry | 10 |
| Figure 5. The six sections of the Knowledge Hub | 11 |
| Figure 6. The EOSC pioneers from the Nordics | 13 |
| Figure 7. EOSC-Nordic website analytics | 19 |
| Figure 8. EOSC-Nordic newsletter analytics 24.10.2019-30.11.2022 | 20 |

List of Tables

| | |
|---|----|
| Table 1. Main results by 11/22 | 26 |
| Table 2. EOSC-Nordic KPIs for communication | 28 |

I. INTRODUCTION

The EOSC-Nordic project has aimed to establish the Nordic and Baltic countries as frontrunners in the take-up of the EOSC concept, principles, and approach. The objectives of EOSC-Nordic are described in figure 1.

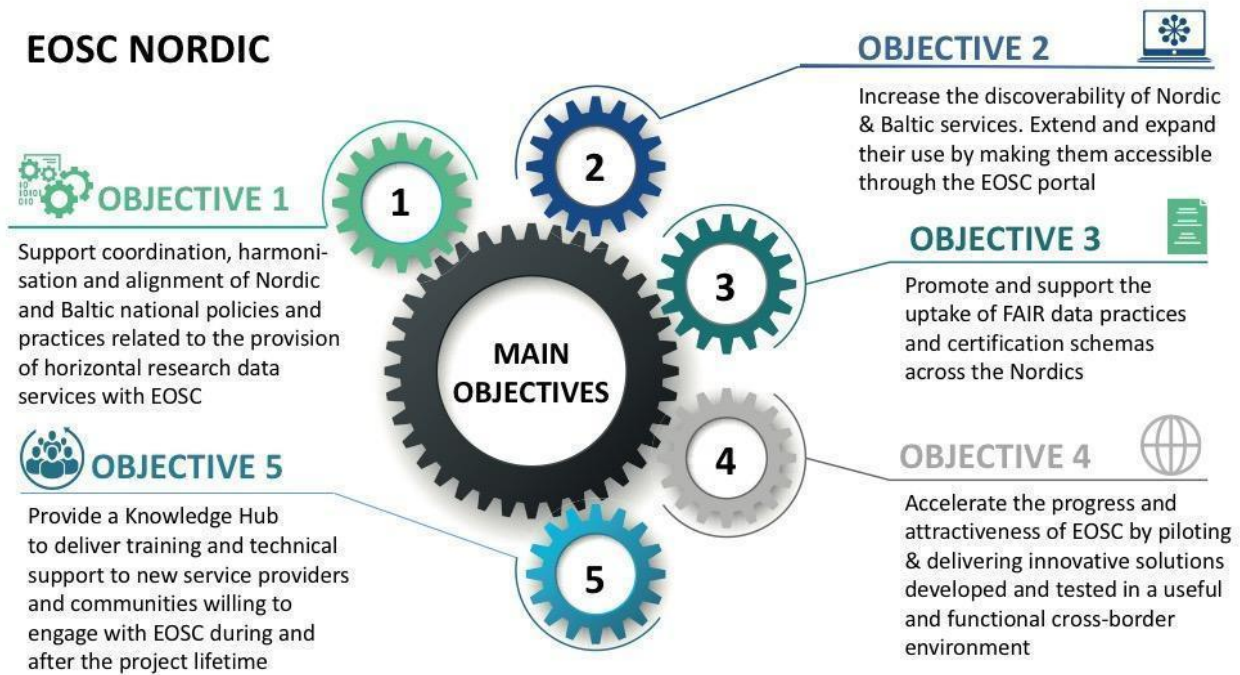


Figure 1. The EOSC-Nordic objectives.

WP6 - Engagement, communication, and competence building - implemented the EOSC-Nordic Knowledge Hub to act as a window to EOSC-Nordic. Successful implementation of the KnowledgeHub was done in close collaboration with the other work packages.

WP6 has also supported the targets of the project by focusing on engaging and communicating within the consortium and with external audiences.

The principal objectives of all dissemination, training and outreach activities led by WP6 have been:

- Maintaining a coordinated and continued communication of the EOSC-Nordic, providing appropriate visibility to all stakeholders, and supporting their engagement.
- Disseminating regular publication of up-to-date content based on information from the other work packages covering project updates, events calendars, and information in the field of EOSC.
- Ensuring that the project results are captured and disseminated to targeted stakeholders.
- Developing and implementing the necessary tools (website, social media) to keep stakeholders continually engaged and updated.
- Organising project-related events.

- Building competencies and sharing advice through the framework of the EOSC-Nordic Knowledge Hub.
- Liaising with the other communication teams belonging to the other EOSC-related funded projects to ensure coordination of messages.

2. ENGAGEMENT WITH THE STAKEHOLDERS AND IMPACT ACHIEVED

EOSC-Nordic identified a wide range of potential stakeholders, including e-Infrastructure and service providers, data repository managers, research communities and research performing organisations, university and libraries, as well as policymakers and funding agencies.

The relevance of the different WPs and activities to each key stakeholder community is shown in the following figure.

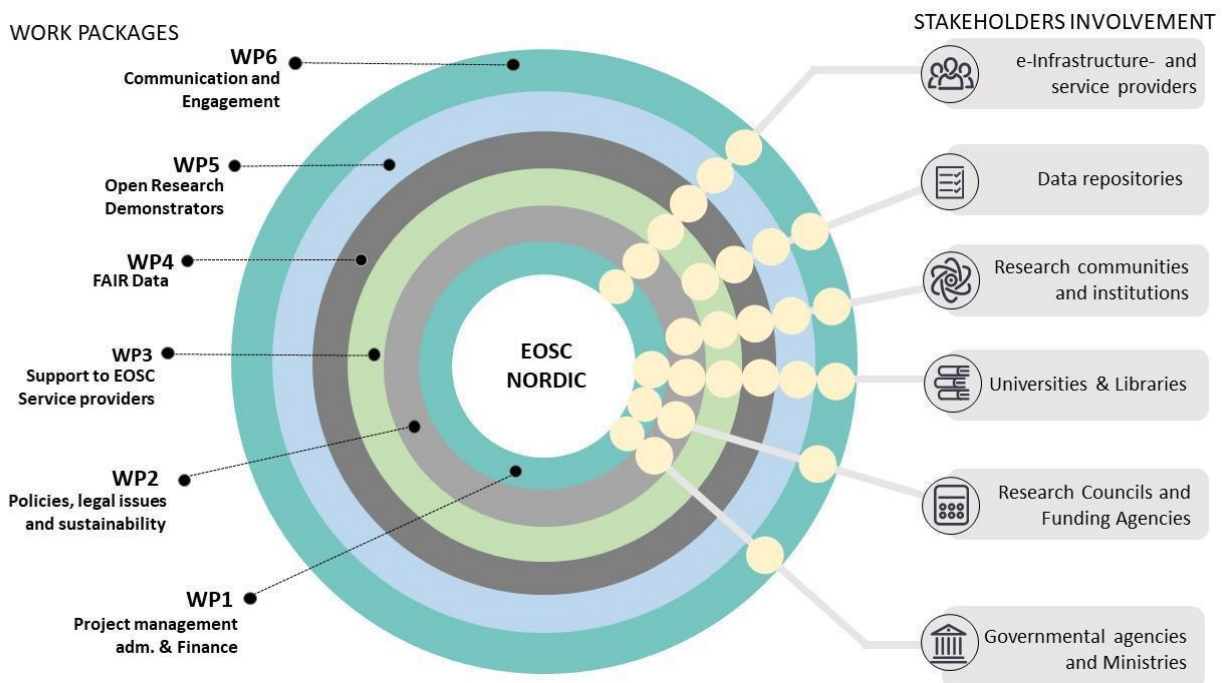


Figure 2. The relevance of the different WPs and activities to each key stakeholder community

The challenge faced by the EOSC-Nordic project was that a majority of stakeholders did not know about EOSC or did not have a clear idea about its benefits. It was not always clear to them how to engage with EOSC. EOSC-Nordic has made an effort to increase the adoption of EOSC by supporting new service providers and communities willing to engage with EOSC to make use of tools, guidance, and services during and after the project's lifetime.

EOSC-Nordic brought together a strong consortium of 24 partners, including e-infrastructure providers, research performing organisations, and expert networks, with national mandates with regards to the provision of research services and open science policy, and broad experience of engaging with the research community and mobilising national governments, funding agencies, international bodies, and global initiatives and high-level experts on EOSC strategic matters.

During its implementation, the project established and developed a network of 200 actors from 10 countries. By working together to realise EOSC at the regional level, the countries have provided “Nordic Added Value” (Nordisk Nytte), a key concept for the Nordic Council of Ministers and Nordic cooperation at large and a way to achieve more together than separately.

The following gives an overview of the engagement with the stakeholders and the impact achieved.

2.1 The Knowledge Hub: A window to the EOSC-Nordic

One of the main objectives of the EOSC-Nordic project was to provide the Knowledge Hub to deliver training and technical support to new service providers and communities willing to engage with EOSC during and after the project's lifetime.

The Knowledge Hub brings processes and best practices forward in the EOSC community, and it helps remove barriers to onboarding EOSC by knowledge sharing.



Figure 3. Launching the Knowledge Hub

WP6 launched the first beta version of our Knowledge Hub in the EOSC-Nordic Open Symposium in September 2020. A holistic picture of the launching the Knowledge Hub made by a graphic facilitator is shown in the previous figure. Successful implementation of the KnowledgeHub was done in close collaboration with the other work packages

The EOSC-Nordic Knowledge Hub is a customer-oriented service site for different stakeholders who can benefit from EOSC-Nordic: a channel that brings value and produces successful user experiences by offering targeted information about the services and knowledge that the EOSC environment offers to each type of stakeholder. The Knowledge Hub was designed to disseminate detailed project results to the various stakeholders engaging in EOSC-Nordic, and to act as an interface to the general EOSC community as well.

2.1.1 The brief concept of the Knowledge Hub

The Knowledge Hub is a window to EOSC-Nordic, a virtual platform on the EOSC-Nordic website for competence building and knowledge sharing. It is an entry point for new service providers and communities willing to engage with EOSC during and after the project's lifetime. Furthermore, it provides hands-on use cases from research communities and a portal for collecting training activities related to the project. Details on the concept, strategy, design elements and planning of the Knowledge Hub were presented in the report Knowledge Hub planning, D6.2.

The Knowledge Hub is a service site built for our various stakeholders: [Users and organisations](#) The description of the stakeholders in the “Users and Organisations” entry is shown in the following figure.

Users and organisations

A wide range of stakeholders benefit from EOSC-Nordic. Find out what EOSC-Nordic can offer for you.



Research communities and institutions

Are you creating new knowledge, products, processes, methods, or systems. Conducting research or experimental development? Explore EOSC's research data management and publishing services to enable reproducible research and dissemination of the results

[Read more](#)



Service providers and e-infrastructures

Are you a service provider? See how EOSC-Nordic can help you engage with your user communities and use your resources more efficiently

[Read more](#)



Data repositories

Are you a data repository owner or manager? See how EOSC-Nordic can help you in the uptake of FAIR practices.

[Read more](#)



Funders and policymakers

Stay up to date on EOSC developments, strategy plans, roadmaps, and how the Open Science can benefit the economy and society. Participate and influence the direction of the EOSC!

[Read more](#)

Figure 4: Description of the stakeholders in the “Users and Organisations” entry.

Our aim was to create a service channel that brings value and produces successful user experiences for the following stakeholder groups:

1. **Policy makers** that coordinate national policies and legal issues in the context of the provision of services in a cross-border environment [Funders and policymakers](#)
2. **Service providers** for support and integration and interoperability of services with EOSC [Service providers and e-infrastructures](#)
3. **Research community managers** focusing on e-Infrastructure services, FAIR data management practices across communities, and hands-on use cases [Data repositories](#)
4. **Researchers** that want to find the solutions developed by the project within research communities (Use cases/ Research communities demonstrators) [Research communities and institutions](#)

The Knowledge Hub consists of six elements in order to integrate and disseminate project results. Each of these sections contains targeted content for stakeholders, making it easy for users to access the right information. The six sections of the Knowledge Hub are shown in the following figure:

Knowledge Hub

Welcome to EOSC-Nordic Knowledge Hub! We invite you to explore the beta version of our knowledge base.

We have collected all our useful resources and information into this Knowledge Hub. Content and materials are constantly evolving and updating throughout the project. Here's a short description of each section to help you find what you're looking for.







| | | |
|---|--|---|
|  <p>Materials Key documents of the project (Reports, recommendations & guidelines)</p> <p>Read more</p> |  <p>Users and organisations Find out what EOSC-Nordic can offer for you</p> <p>Read more</p> |  <p>Training Library All sorts of training events and materials</p> <p>Read more</p> |
|  <p>Services The services available and a guidance how to register a service</p> <p>Read more</p> |  <p>Support Browse FAQs or send over your request via our Service Desk</p> <p>Read more</p> |  <p>Community Connect with peers and learn from others in your field</p> <p>Read more</p> |

Figure 5: The six sections of the Knowledge Hub

11

Knowledge Hub Materials

The Knowledge Hub is designed to disseminate detailed project results to the various stakeholders engaging in EOSC-Nordic.

The majority of the project deliverables are reported, including guidelines and recommendations from the different project themes, i.e., Policy insights (WP2), e-Infrastructure services (WP3), FAIR data (WP4), and Use cases (WP5). The content can be further defined using keywords and topics.

In addition to the offering, the Knowledge Hub also contains services that are easy to use and come with the necessary support. It is considered an interface to the general EOSC community as well.

Support is provided online using several means to engage with the EOSC-Nordic community:

- How to join the EOSC-Nordic community, upcoming community events, interface to the general EOSC community: [Community](#)
- Interactive web tool mapping Nordic infrastructure services. The map also serves as an entry point for service providers. It is also accompanied by a dashboard that delivers insight into what types of services are available: [Services](#)
- FAQs based on questions from the service desk and widgets: [Support](#)
- A network of experts from work packages handling requests from [the Service Desk](#).
- Training materials are found in [Training Library](#)

In addition to all these features, we also wanted to invite our users to collaborate with us and share the outcomes of their use case or a success story that highlights how EOSC services and resources have supported their work using the site's contribute feature: [Contribute](#)

2.1.2 The impact

The Knowledge Hub as a concept for competence and knowledge sharing has been presented to other EOSC projects and networks. We expect to see the concept be reused, adapted, and developed by other projects in the future. EOSC-Nordic is confident that this tailored approach can inspire new user-friendly ways of sharing competencies and knowledge to support the EOSC and EOSC-related projects and initiatives in the future.

2.2 EOSC for Nordic and Baltic Researchers

The target has been to accelerate the progress and attractiveness of EOSC by piloting & delivering innovative solutions developed and tested in a useful and functional cross-border environment.

The WP5 team has worked closely with scientists trying to make or utilise what is to be the European Open Science Cloud. In the EOSC-Nordic, there have been ten (10) use cases. These use cases, demonstrators, are ten projects from five different scientific fields. The demonstrators have been selected to ensure representation from different disciplines and have been designed to foster

12

interdisciplinary exchange. The use cases have demonstrated how to support cross-border research collaboration, using the Nordic and Baltic countries as a testbed environment.

The demonstrators have addressed different parts of the research and data life cycle: discovery and reuse, analysis and post-processing, data management (including sensitive data management), sharing, and archiving. The solutions which have been tested and validated by research communities leverage existing services (national e-infrastructures and/or research communities, core EOSC services, and components provided by pan-European initiatives involved in EOSC) and are suitable by design to spin-off on a cross-border environment outside of the Nordics.

2.2.1 Impact

Our scientists have been EOSC pioneers from the Nordics, who have already adopted an EOSC mindset of sharing and using data across disciplines and so provided a proof of concept amongst its users for EOSC. The EOSC pioneers are shown in the following figure:



Figure 6: The EOSC pioneers from the Nordics

Links to different use cases in EOSC-Nordic :

- <https://www.eosc-nordic.eu/demonstrating-eosc-nordic/>
- <https://www.eosc-nordic.eu/kh-users-and-orgs/use-cases/>

2.3 EOSC for Nordic and Baltic Data Repositories

The target was to promote and support the uptake of FAIR data practices and certification schemas across the Nordics and Baltic countries.

The implementation of the FAIR data practices is one of the key pillars of EOSC. FAIR was weakly supported in communities and repositories. 1/3 of the datasets do not pass any test, while 2/3 score is less than 33%.

EOSC-Nordic made a strong dedication to increasing the FAIR uptake in the region. The EOSC-Nordic FAIR team (WP4) has helped repositories in the transition towards becoming more FAIR-enabling by co-designing guidance and implementation stories focused on recommendations from deliverables.

2.3.1 Impact

Promoting and support for the implementation of FAIR data practices have had an impact, and according to a survey conducted to track the FAIR uptake in the region the results have been clear. The EOSC-Nordic FAIR team has, in concrete terms, increased the FAIR score for 98 repositories and trained over 300 data stewards across the Nordics. EOSC-Nordic has also worked in close collaboration with FAIRsFAIR and other relevant initiatives, such as GoFAIR, on data management to promote best practices and support the adoption of relevant certification schemas.

2.3.2 Use case: FAIRification

During the three years of the EOSC-Nordic project, we tracked the FAIR maturity of the Nordic and Baltic research data repositories and supported the repositories in FAIRification. As part of this work, we organised a series of webinars that provide step-by-step guidance on how to make your metadata more FAIR.

One of the key messages that we wish to convey is that FAIRification is entirely possible, and the time to start is immediately. Several repositories in our sample increased their FAIR scores, notably during the project's timeframe. Another key message is that calculating FAIR scores or assessing FAIR maturity levels of repositories is not a straightforward task, and analysis of the scores needs to be done carefully. However, FAIR assessments are an excellent tool for improving repository practices. Repositories can and should do self-assessments to recognise where they have gaps. It is also worth noting that a digital object cannot really be made FAIR or evaluated for FAIRness in isolation from its context – in this case, the data repository. For example, the persistence of an identifier is determined by the commitment of the organisation assigning and managing it.

The step-to-step guidance for FAIRification is possible through our webinar series.

- STEP1 “Global Unique Identifiers for Datasets” (Nov 26, 2020) [Event](#) | [Summary](#) | [Recordings](#)
- STEP2 “FAIR principle F3 – Metadata includes the identifier of the data it describes” (Feb 3, 2021) [Event](#) | [Summary](#) | [Recording and presentations](#)
- STEP3 “Generic metadata standards” (Apr 29, 2021) [Event](#) | [Summary](#) | [Recording and presentations](#)

- STEP4 “Domain-specific metadata” (Oct 7, 2021) [Event](#) | [Summary](#) | [Recording and presentations](#)
- STEP5 “Value and Limitations of (FAIR) Automated Evaluators” (Feb 8, 2022) [Event](#) | [Summary](#) | [Recording and presentations](#)

More information about the EOSC-Nordic’s FAIR evaluation journey is available in this [article](#) and these two deliverables: [D4.1 An assessment of FAIR-uptake among regional digital repositories](#), and [D4.3 Report on Nordic and Baltic repositories and their uptake of FAIR](#)

2.4 EOSC for Nordic and Baltic Service Providers

The target has been to increase the discoverability of Nordic and Baltic services and tools, make them applicable for cross-border usage and expand their use by making them accessible through the integration with the EOSC Future catalogue.

The level of maturity and fitting into EOSC is generally high, but readiness to provide cross-border services has been lower. It was clear that there is a need for support **to prospective EOSC service providers** in their EOSC implementation. This has meant concrete actions: promoting the benefits of joining the EOSC service catalogue and integrating with other relevant EOSC core functions, and support for publishing services into the EOSC portal. Also, promoting the benefits of EOSC and the implementation of the FAIR principles was needed.

WP3 provided a regional [pre-onboarding platform](#) to facilitate the integration and onboarding of services provided by Nordic and Baltic service providers into the EOSC Marketplace. The EOSC-Nordic pre-onboarding platform has also developed functionalities to onboard HPC (High Performance Computing) and other infrastructure services in the EOSC Marketplace and to manage the allocation of those resources by resource allocators automatically.

Sharing of services cross-border in the Nordic region has been addressed by several projects funded by the Nordic e-Infrastructure Collaboration (NeIC), the coordinator for EOSC-Nordic, from different aspects. The fundamental issues have been identified and approached both in EOSC-Nordic and other projects, e.g., NeIC Dellinger and NeIC Puhuri 1 and 2. Due to the close collaboration of Nordic countries in joint procurement of infrastructures, such as EuroHPC LUMI and EuroHPC LUMI Q, the model of cross-border sharing was easier to agree upon in a common way.

2.4.1 Maturity model

The WP3 team has focused on identifying existing Nordic generic and thematic service providers and supporting their integration and the discovery of their services via the EOSC portal and other relevant catalogues.

In order to promote the EOSC implementation, the EOSC-Nordic approach has been clear: making consumable services more mature and usable. Since the beginning of the project, the WP3 team has

been working on establishing interoperability efforts in making services in different countries more similar to each other and tailoring them to the research community.

EOSC-Nordic established a maturity model to assess the status of the services provided. The model assesses service management, data management and FAIR data requirements, accessibility and legal requirements, sustainability, and EOSC architecture compatibility. This maturity system ensures that services are predictable and reliable.

Several activities were dedicated to fostering the organisational semantic and technical interoperability of service providers and to proposing solutions for improving the interoperability approach within EOSC.

The service compliance checklist and the maturity model help quickly to validate if a service is fit for EOSC. The EOSC-Nordic maturity model has also been adopted by the EOSC Pillar project.

2.5 EOSC for Nordic and Baltic Policymakers

The target was to support coordination, harmonisation, and alignment of Nordic and Baltic national policies and practices related to the provision of horizontal research data services with EOSC.

By interacting and engaging with policymakers, funding agencies, and governance bodies, we have aimed to make them informed about the project strategy plans, roadmaps and to demonstrate added values and successes.

Our policy workshops have been the cornerstone of the policy work in the EOSC-Nordic project. The workshops have been held once a year and have every time gathered together over 80 policymakers and stakeholders from the Baltics and Nordics to discuss common objectives related to Open Science policies and cross-border collaborations. The policy workshops have been a good opportunity for participants to hear the latest information on Open Science updates in other countries and developments in the EOSC. In addition, the workshops were very valuable gathering points to stimulate the dialogue among the different countries and meet new partners.

EOSC-Nordic supported the organisation of the first EOSC tripartite event in the Nordic and Baltic countries. The event brought together the most active EOSC ambassadors of the region spanning from ministerial representatives active in the EOSC Steering Board to research performing organisations working on Open Science and FAIR and from the representatives of the EOSC mandated organisations and national structures to the national infrastructure providers. The European Union and the EOSC Association provided the European perspective on the latest EOSC developments, and the countries reflected on the impact and the follow-up actions.

2.5.1 Impact

EOSC-Nordic has had a significant impact on the regional consolidation of EOSC as well as the increment of cross-country and cross-disciplinary collaboration, building upon the Nordic e-Infrastructure Collaboration (NeIC).

The regional approach has been good for engaging countries for EOSC. In the Nordic case, it has helped in giving a stronger feeling of ownership among the stakeholders. Engagement on national and regional levels contributing to the development and dissemination of EOSC has increased. EOSC has become an important vehicle for the development of the national open science and open data agendas. National structures, such as forums and coordination groups, have been formed in each of the Nordic countries.

3. MAIN ACTIVITIES AND ACHIEVEMENT

MI-M36 (+3)

3.1 Overview of main activities

A coordinated and continued communication of the EOSC-Nordic has maintained appropriate visibility and engagement with all stakeholders. Activities have aimed at continuously creating relevant content in order to illustrate EOSC-Nordic and how EOSC can benefit the targeted stakeholders.

The EOSC-Nordic website, newsletters, social media activities, and major events were generic ways to serve nearly all types of stakeholders. Activities have included monthly newsletters and the generation of content in different formats such as news, articles, and blog posts to the EOSC-Nordic web portal and social media channels. One of the central points for communication and marketing has been the promotion of events and workshops prior to, during, and after the event.

The dissemination and exploitation of project results have been supported by carrying out a number of outreach activities tailored to specific target audiences and organised in connection with existing events, such as EOSC-Hub and EOSC Symposium events. As an outcome of the COVID-19 pandemic, many planned on-site events were cancelled, and this increased the focus on virtual engagement. Webinars and online events have been important ways to engage with targeted stakeholder groups. Publishing webinar recordings, presentation slides, articles, and blogs from these events have supported the dissemination goals.

A number of onboarding and training activities (workshops, hackathons, and hands-on training) have been carried out to support service providers in engaging with EOSC and to help repositories improve their data management practices. All instructions and material, including training material, are available through the Knowledge Hub.

Content reuse and publication on third-party platforms have also been utilised. An example of this is GÈANT's CONNECT website, where a EOSC-Nordic use case was republished: <https://connect.geant.org/2021/02/17/open-science-will-help-us-better-understand-the-vikings>.

The communication and marketing activities have used a specific EOSC-Nordic brand identity to underline the consistent message at all meeting points. The brand package (MS38) was created in project month 2 (M2). New promotional materials were developed for dissemination at online events.

EOSC-Nordic has actively engaged with other INFRAEOSC-5 call projects with concrete activities across projects.

3.2 Website

The website, www.eosc-nordic.eu, has been the primary access point and reference for the EOSC-Nordic project.

A preliminary version of the website (Milestone, MS37) was launched in project month number (M2, October 2019). The roles of the different content parts of the website were defined alongside the launch of the beta version of the [Knowledge Hub](#) in M12 (September 2020).

The role of the main site has been to act as a general information channel for the project and the activities, whereas the Knowledge Hub was created to be a service site built for users and stakeholders. The main site has attracted visitors with a dynamic content feed supported by social media messages. It has been containing news, expert blogs, and article-type references about the impact and events organised by or related to EOSC-Nordic. Also, a collection of the latest social media messages has been found on the page.

The EOSC-Nordic website has had a steady visitor flow, and the number of new sessions has been about seventy percent of the traffic gained on the website. The average session duration has been 3:04 minutes, while the average time spent on EOSC-Nordic content was 1:03 minutes; this fact is indicative that the users have found EOSC-Nordic content engaging. This is shown in Figure 7.

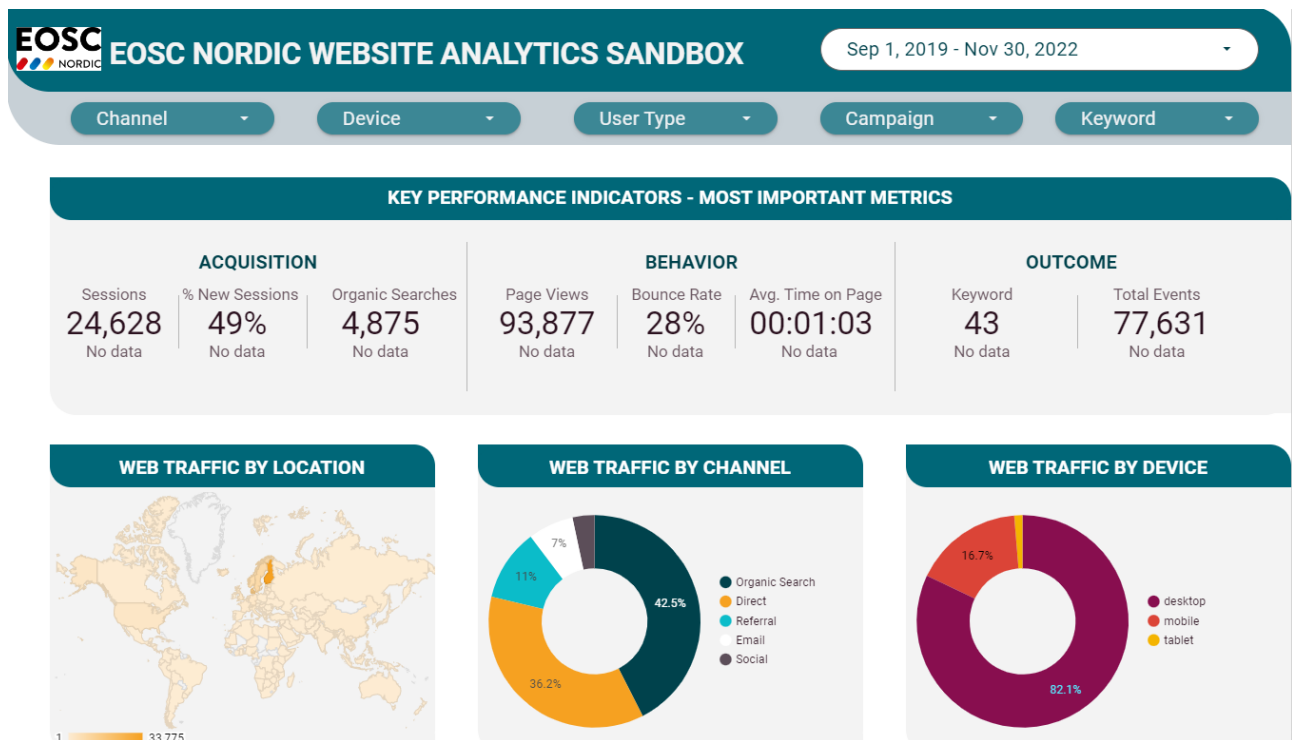


Figure 7. EOSC-Nordic website analytics 1.9.2019-30.11.2022

Most read articles and blogs on the EOSC-Nordic website:

- [EOSC-Nordic FAIRification webinar on PIDs](#)
- [Demonstrating EOSC-Nordic FAIRification STEP 2 on DATA / METADATA webinar](#)

- [New assessment tool developed and ready](#)
- [Materials from the Second EOSC-Nordic Policy Workshop are now available](#)
- [FAIRification STEP 3 on DATA / METADATA webinar](#)
- [Well done is better than well said](#)
- [FAIR + Time: Preservation for a Designated Community](#)
- [FAIR Maturity Evaluation of Nordic and Baltic data repositories](#)
- [EOSC as a ‘driver’ for the Open Science Movement](#)

The EOSC-Nordic website went through an accessibility audit at the end of 2020; the study found some accessibility issues with the site. Some time and effort were invested in fixing these issues on the code side and involving content generation practices, such as using headings consistently and providing alt texts and more pronounced and accessible link information.

3.3 Newsletter

In addition to the website, the EOSC-Nordic project disseminated its results through a total of 31 newsletters. Email marketing was also used for specific target audiences and purposes (events, ongoing and planned work, achievements, use cases, and digital training materials) via the direct contacts of the different work packages.

The newsletter has been performing extremely well, with an average open rate of 42.15 % and a click-through rate of 13.06%. The trend is shown in figure 8.

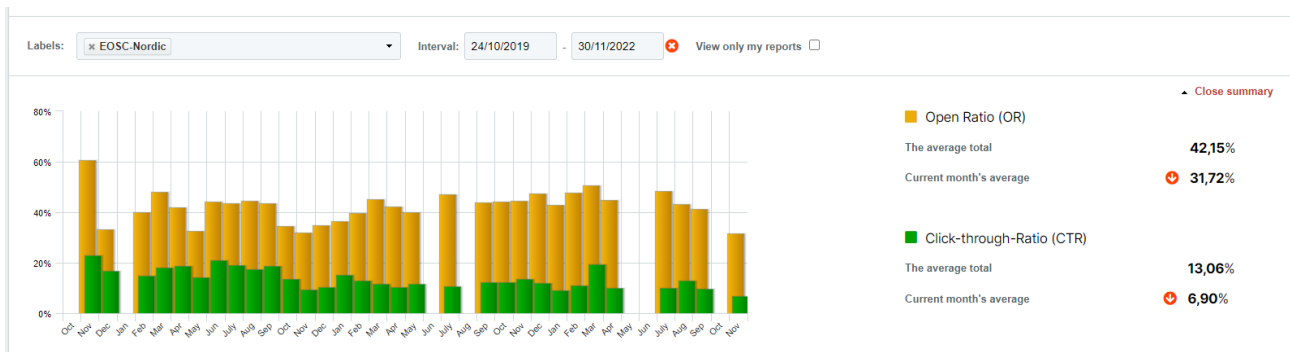


Figure 8. EOSC-Nordic newsletter analytics 24.10.2019-30.11.2022

The newsletter subscription was available on the website. Due to GDPR regulations and to simplify the collection and storing of the contact data, we changed our original strategy to collect a centralised database of the stakeholder contacts to one which is consent-based, opt-in subscription. The only data we collected has been the newsletter subscriptions for which we have consent to collect data. The different work packages have also used their own contact lists.

3.4 Social media channels

EOSC-Nordic's social media activities were focused on objective-oriented and content-rich posts that could explain the value, the concept, and the aim of the project. Specifically, social media was deployed to engage with project stakeholders and research communities in order to promote the activities and outputs of the EOSC-Nordic project and other EOSC-related news & activities and support the other communication channels.

Our [Twitter](#) account (@EOSC_Nordic) was the main entrance point and content provider - together with the website - for our community; it had 614 followers. Our [Instagram](#) account (eosc.nordic) had 75 followers, and the [YouTube](#) channel had shared **30 videos and recordings** made during the events and webinars explaining the project, the objectives, and the important connections with the community.

The channels to follow and stay connected with EOSC-Nordic were:

[Subscribe to our Newsletter](#)
[Follow us on Twitter](#)
[Follow us on Instagram](#)
[Follow us on YouTube](#)

3.5 Events and webinars

EOSC-Nordic specific events and the participation of EOSC-Nordic at third-party events created face-to-face opportunities for collaboration, which supported the dissemination and exploitation of project results.

3.5.1 The flagship project events

EOSC-Nordic carried out three flagship project events and one Train-the-trainer event:

- The project kick-off was organised on 2-3.9.2019 (MS1) in Helsinki, Finland, to create awareness around the project and its ambitions and engage with stakeholders.
- Online EOSC-Nordic Open Symposium 26.9.2020 (MS39) was a launch event for the Knowledge Hub.
- The 2nd General Assembly on 29.-30.09.2021 was held in Copenhagen, Denmark, and served as the EOSC-Nordic Knowledge Hub Train-the-Trainer event (MS40).
- The Final event (M36) was organised as EOSC in the Nordics & Baltics – three-day regional events in Tallinn and Tartu 4-6.10.2022 (MS41)

Almost 150 people registered for on-site participation across the Final event in October 2022, and to top it off, we also had remote participants. [The first EOSC Tripartite Event in the Nordic & Baltic countries](#) was supported by EOSC-Nordic and co-located with the Final event. The parallel program was organised as the format of the technical session: [Sensitive Data e-Infrastructure in the Nordics workshop](#) on 4.10. In addition, [The Data Science Seminar](#) at the University of Tartu was held on Thursday, 6.10.

The Final event shared the Key Exploitable Results that the EOSC-Nordic consortium had generated in the last three years.

The short summaries from the sessions of the Final event are listed below:

- [The Final Event: Opening Session](#)
- [The Final Event: Session: The added value of regional collaborations and how this can support EOSC](#)
- [The Final Event: Session: Window to EOSC-Nordic and EOSC-Nordic for data repositories](#)
- [The Final Event: Session: EOSC for Nordic-Baltic Researchers and Service Providers](#)
- [The Final Event: Closing Remarks](#)

All presentations are available in the Knowledge Hub.

- [The EOSC-Nordic Final Event](#)
 - [Recording of the Final Event is available on YouTube](#)

3.5.2 Other events

Where feasible, EOSC-Nordic organised co-located events or sessions with other relevant initiatives (e.g., EOSC stakeholder forum, etc.). All the relevant EOSC-related events, workshops, and webinars have been communicated on the website.

As mentioned earlier, the COVID-19 outbreak in Europe impacted the organisation of physical events for many projects and meant cancellations, rescheduling, or switching to an online format. This meant that also EOSC-Nordic had to rely mostly on online events and webinars. WP6 has provided support, promotion, and live-tweeting for webinars and has made the eventual public recordings and slides available on the event pages of the EOSC-Nordic website and in the Knowledge Hub.

EOSC-Nordic representatives have also taken part in many third-party events organised by key stakeholders in the EOSC environment. Nevertheless, the COVID-19 outbreak has either cancelled many planned events, or they have been replaced with virtual conferences and workshops. The lack of physical meetings had a negative effect on taking full advantage of collaboration benefits.

Below is a list of all the events listed on the EOSC-Nordic website.

Events 2019

- FAIRsFAIR kickoff, Amsterdam, 14 March 2019
- EOSC-Hub week, Prague, 9-11 April 2019

- NeIC2019, Copenhagen, 14-16 May 2019
- GBIF, Oslo, 23 May 2019
- TNC2019, Tallinn, 16-20 June 2019
- SNIC all-hands, Stockholm, 6 September 2019
- [EOSC-Nordic kickoff, Espoo](#), 2-3 September 2019
- Building EOSC through the H2020 projects, Brussels, 9-10 September 2019
- Open Science FAIR, Porto, 16-18 September, 2019
- Trygve all hands meeting, Espoo, 8-9 October, 2019
- European Open Science Coordinators' meeting, Helsinki, 21 October 2019
- The International Research Data Community contributing to EOSC, Helsinki, 22 October 2019
- DeiC Conference, Fredericia, 30-31 October 2019
- European infrastructures in data management and scientific computing: Finland's point of view. EOSC-Nordic presentation, Helsinki, 6 November 2019
- [The 1st collaborative webinar with EOSC Executive Board working groups](#) 8 November 2019
- EOSC Symposium, Budapest, 26-27 November 2019
- EOSC-Nordic meets Nordic and Baltic e-IRG delegates, 4 December 2019

Events 2020

- [Nordic Policy Workshop](#) Copenhagen, Denmark, 6 February 2020
- [FAIRification of Nordic and Baltic data repositories](#) 22 April 2020
- [EOSC-Hub week 20202: Policy landscape across Europe online workshop](#)
- [EOSC Landscape Validation workshop](#) 27-28 April 2020
- WP4 taking part in FAIRsFAIR Synchronisation workshop breakouts 6-14 May 2020
- [EOSC-Hub week](#)
 - 1. EOSC-Nordic position paper
 - 2. Tuesday, May 19; 14-15:30 CEST: Issues in Cross-Border Consumption of Resources in EOSC
 - 3. Wednesday, May 20; 10-11:30 CEST: National Policy Developments Supporting EOSC Implementation 18-20 May 2020
- Bioinformatics Community Conference 2020, 19-22 July 2020
- [ESOF2020 – Online session: I want to be an Open Scientist! Research Evaluation and Incentives to boost Open Science and Research Careers](#), 5 September 2020
- [EOSC-Nordic Open Symposium](#) 26 September 2020
- EOSC Symposium 2020 19- 22 October 2020
- [Online Galaxy Training on Functionally Assembled Terrestrial Ecosystem Simulator \(FATES\)](#) 26-27 October 2020
- [Seminar series: National and International Trends in Research Storage at Scale](#), 12 November 2020
- [EOSC projects EXPO](#) 16-10 November, 2020
- [FAIRification workshop – STEP 1 Global Unique Identifiers for Datasets](#) 26 November 2020
- [EOSC Enhance Webinar: EOSC Portal New Release – New provider functionalities and tutorial](#), 17 December 2020

Events 2021

23

- [FAIRification STEP 2 on DATA / METADATA webinar](#) 3 February 2021
- [GTN Smörgåsbord: A Global Galaxy Course](#) 15-19 February 2021
- [Second EOSC-Nordic Policy Workshop: Nordic and Baltic collaboration as EOSC enabler](#) 9 March 2021
- [NICEST2 hackathon on FAIR climate data](#) 11-17 March 2021
- [ExPaNDS workshop on EOSC](#) 6-7 April 2020
- [FAIRification STEP 3 – generic metadata standards](#) 29 April 2021
- [RDA4EOSC Webinar – Organisational Approaches To Enhancing Skills And Improving Training](#) 25 May 2021
- [EOSC-Nordic WP4 workshop: From Self-Assessment to Certification with FAIR Results](#) 3 June 2021
- [EOSC Symposium 2021](#) 15-18 June 2021
- [Sensitive data workshop](#) 13-16 September 2021
- [The EOSC-Nordic Second General Assembly](#), Copenhagen, Denmark, 29-30 September 2021
- [FAIRification STEP4 – domain-specific metadata webinar](#) 7 October 2021
- [NICEST2/EOSC-Nordic M4M climate workshop](#) 7-8 December 2021

Events 2022

- [FAIRification STEP 5 webinar: Value and limitations of FAIR assessment tools](#) 8 February 2022
- [Workshop on National Policies relevant to EOSC deployment](#) 4 May 2022
- [FAIR incentives stakeholder workshop](#) 9 May 2022
- [Workshop “EOSC in the Nordics: from policy to practice”](#) 30 May 2022
- [EOSC Regional event in Budapest](#), 28-29 September 2022
- [EOSC in the Nordics & Baltics: regional events in Tallinn/Tartu](#) 4-6 October 2022
- [EOSC-Pillar Final Conference](#) 25-27 October 2022
- [NeIC: An introduction to FAIR data stewardship -course](#) 8-10 November 2022
- [EOSC Symposium](#) 14-17 November 2022

3.6 InfraEOSC-5 projects

EOSC-Nordic is not only advancing the coordination of EOSC-relevant initiatives in the Nordic and Baltic countries but is also collaborating with other EOSC-related Horizon2020 projects. As one of the parties to the Collaboration Agreement (CA) "Support to the EOSC Governance", EOSC-Nordic contributes to the cross-project task forces.

[EOSC-Nordic part of Collaboration Agreement in support of EOSC Governance](#)

Communication and Events Task Force keeps the projects up to date on each other's engagement activities and catalyses joint communications and engagement activities between the projects. EOSC-Nordic has actively engaged with concrete activities across projects.

3.6.1 Position papers

One of the main communication activities jointly carried out by the INFRAEOSC-5 projects, and in particular by the five projects involved in the INFRAEOSC-5b subgroup, was the creation of position papers on EOSC, which were collected by EOSCsecretariat.eu and published via Zenodo on 18 May 2020, during the EOSC-hub Week 2020. A piece of news was published on the EOSC-Nordic website introducing the collection of position papers.

[EOSC position papers – Insights from Regional Projects & Infrastructures](#)

3.6.2 Joint workshop and presentations at the EOSC-hub Week 2020

The online edition of the EOSC-hub week 2020 gathered an impressive number of participants: more than 800 persons dialed in over the three-day event. The EOSC-Nordic project was also involved in co-organising a workshop and delivering presentations.

[Events EOSC-Hub week 2020: Policy landscape across Europe online workshop](#)

[News and Articles EOSC-Nordic at the EOSC-hub week 2020](#)

3.6.3 Joint video introducing the INFRAEOSC-5 collaboration

The seven projects involved in the collaboration also produced a brief promotional video describing the main features of their joint efforts and the six task forces that were established in the Collaboration Agreement. Its realisation was coordinated by EOSCsecretariat.eu, and the video is currently available on the EOSCsecretariat.eu [YouTube channel](#).

3.6.4 Joint workshop, presentations and booth at the EOSC-symposium 2022

During the EOSC-symposium 2022, session regional projects discussed the current topics, challenges and issues concerning the EOSC engagement at regional level. This session provided an insight to collaboration and developments of EOSC regional projects, and capitalising on success stories and lessons to learn:

<https://symposium22.eoscfuture.eu/symposium/eosc-engagement-at-regional-level/>

3.6.5 Joint presentations and panel discussions

EOSC Regional Event in Budapest 28-29.9.2022:

The representation of EOSC regional projects, namely EOSC-Nordic, EOSC Pillar and EOSC Synergy, as well as presentations on projects that enhance the EOSC capacity – DICE, EGI-ACE OpenAIRE-Nexus and C-SCALE, provided a holistic view of the Open Science ecosystem and highlighted the value of collective work performed for achieving global coverage of the Pan-European Cloud <https://ni4os.eu/eosc-regional-event-in-budapest/>

The EOSC-Pillar Final Conference 25-27.10.2022 in Paris:

Building an EOSC from National Contributions highlighted some of the main results of the EOSC-Pillar project alongside other European Open Science Cloud (EOSC) regional projects and national initiatives, in particular how they provided important foundations for the operations and sustainability of EOSC. EOSC-Nordic took part for two panel sessions:

[Guided Panel Discussion](#) - Engaging the community

[Closing session](#) Regional and national views on the current status of EOSC compared to 3 years ago
[EOSC-Pillar Final Conference](#)

4. OUTREACH RESULTS MI-M36+3

During the project, EOSC-Nordic was able to create a consolidated community of members interested in the development of EOSC-Nordic thanks to social media activity, event participation, and partners’ multiplying efforts.

4.1 Effectiveness of the communication and engagement

The achievement of these results was possible through a coordinated and continuous communication effort. Continuous publication of content has plenty of engaged users: 714 Social media followers, 149 newsletter subscribers, and 11,852 website users. Based on the time spent consuming the content, it is interesting. Four larger EOSC-Nordic-specific events were organised and many training events, webinars, and third-party events were supported.

The following table presents the main achievements from M1-M36+3 in terms of communication and stakeholder engagement.

Table 2. Main results by 11/22

| | Result by 11/22 |
|---|--|
| Community | |
| Engaged users | Engaged users: Social media followers (614 Twitter + 75 Instagram), 149 newsletters subscribers [11,878 website users] |
| Website sessions | 24,628 |
| Website users | 11,878 |
| Website page views | 94,836 |
| Average time spent on the web page | 03:05 |
| Newsletter open rate (average) | 42.15% |
| Newsletter click-through rate (CTR) (average) | 13.06% |
| Materials | |
| Communication Materials | 120 content pieces, 2 flyers, 3 roll-ups, 6 graphic illustrations, 30 videos |
| Newsletters | 31 |

| | |
|-------------------------------------|---|
| Downloads of materials in Zenodo | 2,237 |
| Events | |
| Webinars organised | WP4 hosted eight (8) highly successful webinars (including a series on FAIRification) WP5 Number of well-attended workshops on Galaxy for Climate |
| Webinar participants | WP4: A total of 698 registered participants |
| Attendees for each event organised | <ul style="list-style-type: none"> ● Kick-off event, September 2019, 120 participants ● Policy workshop I, February 2020, 60 participants ● Open symposium, September 2020, 118 participants ● Second EOSC-Nordic Policy Workshop: Nordic and Baltic collaboration as EOSC enabler, March 2021, 143 participants ● The EOSC-Nordic Second General Assembly, Train-the-Trainer event, September 2021, 89 participants ● Workshop “EOSC in the Nordics: from policy to practice” May 2022, 187 participants ● Final event: EOSC in the Nordics & Baltics: regional events in Tallinn, October 2022, 150 participants |
| Participation in third-party events | 23 |

4.2 Key performance indicators

Stakeholder interactions and the effectiveness of the activities are reviewed by a number of involved or interested stakeholders, project activities and materials, participants in the activities, visitors on the website, and social media followers.

The initial set of indicative key performance indicators (KPIs) are set below. The table summarises the status of communication and engagement KPIs at the end of the project.

Table 3. EOSC-Nordic KPIs for communication

| Action | KPI | Measure | Achieved M1-M18 | M19-M36 |
|--------------------------------------|---|---|--|--------------------------|
| Profiled database of contacts | Number of contacts | 2,000 by the end of year one and over 4,000 contacts by the project end | Due to GDPR regulations, and to simplify the collection and storing of the contact data, we have changed our original strategy to collect a centralised database of the stakeholder contacts to one which is consent-based, opt-in subscription. | N/A |
| Content in the web portal | Number of published news, articles, blog posts, interviews, reports, videos, success stories, webinars, information sheets, etc | At least 3 / month | 60 (avg. 3.3/month) | 61 (2.9/month) |
| Marketing materials | Number of targeted newsletters | 10 yearly newsletters | 16 | 15 |
| | The number of newsletter orders | At least 500 / year | 155 | 149 |
| | | Other metrics: click-through rates | 14.5 7% | 11.68 % |
| | | | | |
| Project website | Total Site Visits | At least 1000 visits per month | avg 715 visits per month | avg 284 visits per month |
| | the goal is to convert anonymous visitors to registered visitors | Other metrics followed: interactions per visit, new visitors, referrals, country, organic keywords, source: direct visitors or organic/search traffic | N/A | N/A |
| | | Time spent on content | 01:12 minutes | 02:58 minutes |

| | | | | |
|-------------------------------------|--|---|----------------------------|--|
| | | Website users | 6,135 | 5,957 |
| Social Media Channels | Number of followers | >700 outside of the project | 403 Twitter + 52 Instagram | 211 Twitter + 23 Instagram |
| | Number of tweets | At least 500 tweets per year (unique and retweeted) | 379 | 321 |
| Support publications | Number of leaflets/flyers/brochures | 15 for the lifetime of the project | 2 | |
| | Number of posters | 10 for the lifetime of the project | 3 (roll-ups) | |
| Engagement with stakeholders | Number of stakeholders involved | Over 500 end-users in the science demonstrators and other events by the project end | | 500 |
| | | 200 participants in each EOSC-Nordic flagship event | | From 120 in the first to 300 in the last event |
| | Number of external events participated | At least 15 for the lifetime of the project | 23 | 8 |