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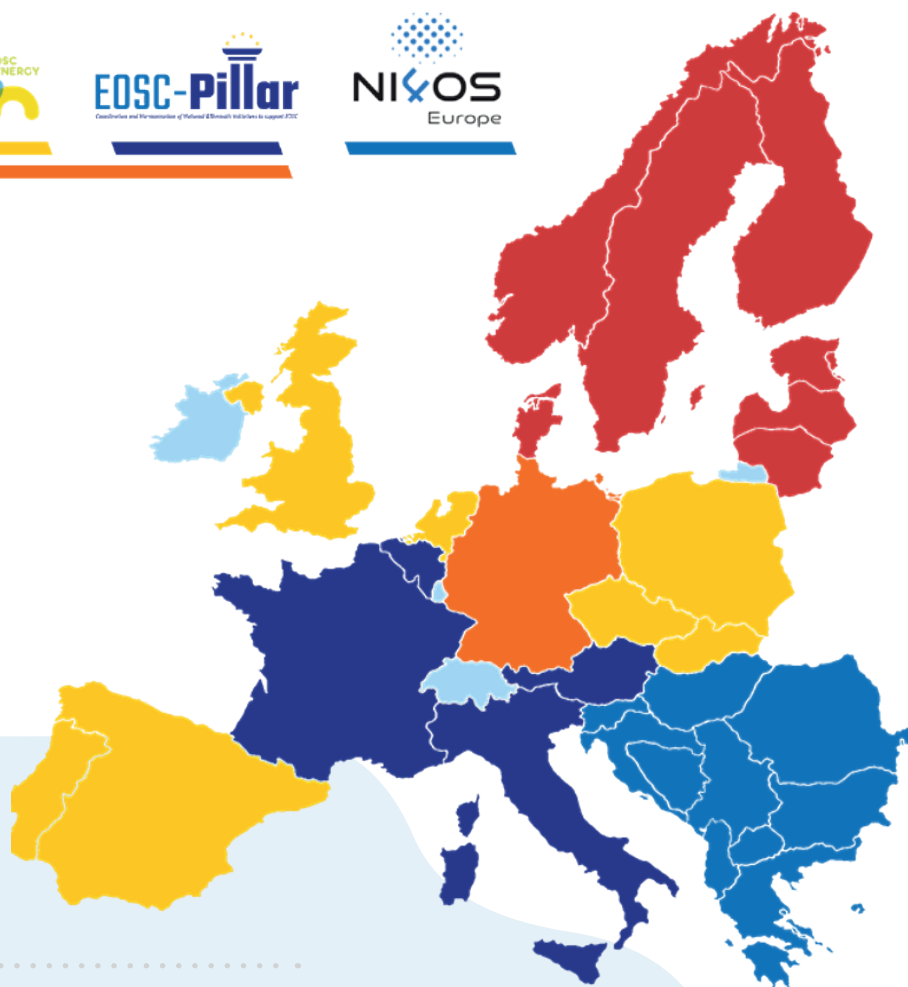


Workshop Report

National Policies relevant to EOSC deployment

*Status, gaps, and steps towards
harmonisation*

4 May 2022 | Strasbourg, France



Authors

Rob Carrillo (EOSC-Pillar & Trust-IT Services),
Maria Giuffrida (EOSC-Pillar & Trust-IT Services),
Federico Drago (EOSC-Pillar & Trust-IT Services)

Disclaimer

This is a post-event report for the workshop “National Policies Relevant to EOSC Deployment” and was produced by the EOSC-Pillar project with support from the other event co-organisers. The information and views set out in this document are those of the author(s) and do not necessarily reflect the official opinion of the European Commission. Neither the European Commission guarantees the accuracy of the information included in this document. Neither the European Commission nor any person acting on the European Commission’s behalf may be held responsible for the use which may be made of the information contained therein.

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Introduction

On 4 May 2022, EOSC Synergy, together with EOSC-Pillar, EOSC Nordic, ExPaNDS, NI4OS-Europe, EOSC Future and FAIRsFAIR held a workshop, '**National Policies Relevant to EOSC Deployment: Status, gaps, and steps towards harmonisation**' in Strasbourg.

During the workshop, the findings of the regional EOSC projects on national open science, funding, and access provisioning policies were presented. The workshop was timely as it was organised within the last year of the regional EOSC projects. The workshop was also organised right after the EOSC Policy Event organised by EOSC Future in collaboration with the European Commission, the EOSC Association, the EOSC Steering Board and the University of Strasbourg which tackled the same topic but more on a European policy level and context.

Ludek Matyska, EOSC Synergy opened the event and welcomed more than 100 online and on-site participants. At the opening, he stressed the importance of implementing EOSC at all levels and having a proper geographical coverage, which is one of the main themes of the event.

Workshop Themes

Open Science and EOSC National Policies

This session focused on the presentation of findings from the EOSC regional projects on the status of national Open Science and EOSC policies in the regions concerned. Countries in different regions have different approaches and are progressing at different paces. The workshop discussed differences and gaps, with the view that these make the implementation more complicated. It will aim to increase understanding of the different policies and approaches and suggest recommendations and steps that can be taken to support a successful EOSC implementation and uptake.

Funding policies

This session focused on findings from the EOSC regional projects with respect to funding policies in the regions concerned. It included presentations of successful business models and viable funding schemes at the institutional, national, or regional and international level. It addressed the shortage of coherent and stable funding policies, differences and gaps, and saw suggested recommendations and steps that can be taken to foster better alignment of funding policies nationally and internationally.

Access Provisioning Policies

This session focused on the presentation of findings from the EOSC regional projects with respect to access provisioning policies in the regions concerned. Specific aspects discussed were related to EuroHPC and cross-border resources provisioning, cross-border collaboration, and conditions for transnational access. However, access was also considered in terms of sustainability, from the user point of view and the availability of skills and capacity building. The findings and recommendations looked at the applicable scope (national/cross-border) and the profile of service policies for access (i.e., how and where they are provided, to which users, and under which conditions).

Programme

Session 1 Open Science and EOSC National Policies

- Open Science Strategy Landscapes, Gap Analysis and Recommendations - Filipa Pereira (EOSC Synergy)
- National Policy Landscapes – Sara di Giorgio (EOSC-Pillar)
- Open Science /EOSC policies in the Nordics - Per-Olov Hammargren (EOSC Nordic)
- Open Science EOSC and national policies and strategies in SEE - Ilias Papastamatiou (NI4OS Europe)
- FAIRsFAIR Policy Support – Joy Davidson (FAIRSFAIR)
- **Panel Discussion**
Chair: Ludek Matyska | **Panellists:** Filipa Pereira, Sara di Giorgio, Per-Olov Hammargren, Ilias Papastamatiou, Joy Davidson, Helen Clare, and Gareth O'Neill.

Session 2 Funding policies

- EOSC Synergy perspective and recommendations on funding – Dale Robertson (EOSC Synergy)
- Getting a grip on sustainability - Rebecca Reichenbach (EOSC-Pillar)
- Funding models supporting cross border collaborations: lessons learnt from the Nordics – Lars Fisher (EOSC Nordic)
- NOSCI organisational and funding models towards sustainability – Eleni Toli (NI4OS Europe)
- **Panel Discussion**
Chair: Sara Garavelli | **Panellists:** Dale Robertson, Rebecca Reichenbach, Lars Fisher, Eleni Toli, and Franciska de Jong.

Session 3 Access Provisioning Policies

- EOSC Synergy perspective and recommendations on Access policies – Ignacio Blanquer (EOSC Synergy)
- Mind the gap: data access may have strings attached – Jos van Wezel (EOSC-Pillar)
- Access provisioning policies in national context - Per-Olov Hammargren/ Peter Mac Callum (TNC) (EOSC Nordic)
- The Open Call for accessing NI4OS-Europe services - Andreas Athenodorou (NI4OS Europe)
- **Panel Discussion**
Chair: Volker Beckmann | **Panellists:** Ignacio Blanquer, Jos van Wezel, Per-Olov Hammargren, Peter Maccallum, Andreas Athenodorou, Mark Van der Sanden, and Hien Bui.

Session 4 Feedback poll and conclusions

Session 1:

Open Science and EOSC National Policies

EOSC Synergy

EOSC Synergy, represented by Filipa Pereira, opened her presentation with a landscape of the various initiatives and frameworks to support OS. She then followed this with the gaps identified during their landscaping activities.

She reported that on national policies, six countries adopted a policy on open access to publications while four countries have a policy on open and FAIR data. Only two countries made explicit references to EOSC in current national policies (Netherlands and Spain).

There are differences and gaps across the EOSC Synergy countries covered. Overall, EOSC Synergy recommends that where not present, national strategies and policies on OS and FAIR data should be defined. EOSC should also be promoted in national policies. National open science cloud initiatives (NOSCI), which have already started to be observed in some countries, should be adopted and implemented. Investment in the communication and dissemination of OS practices should be allotted and support the promotion of EOSC at all levels.

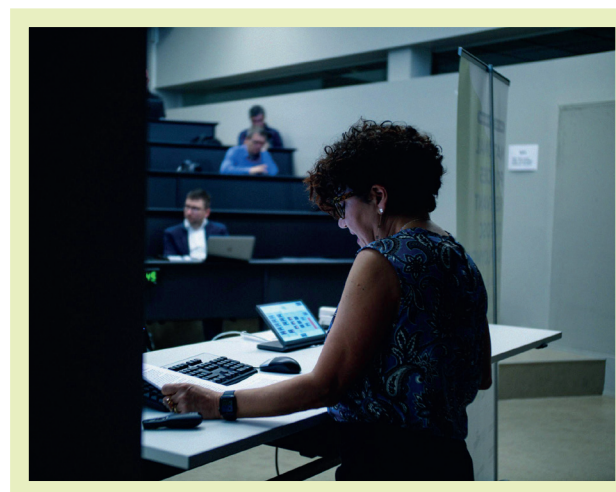
EOSC Synergy also recommended to encourage and reward researchers and organisations that apply OS and FAIR principles, implement national competence centres in key areas, ensure optimal levels of data storage, preservation, and maintenance, and finally, as a standard, require submission of data management plans(DMP) and require research data to be deposited in trustworthy repositories.



EOSC-Pillar

EOSC-Pillar's Sara Di Giorgio highlighted the varying state of OS policies in her region where Austria and France have national plans/policies for Open Science, while Belgium - only for the Flanders region, and Germany and Italy don't have policies in place. Di Giorgio also highlighted a number of gaps around the two pillars of IP/copyright law and personal/non-personal data protection law particularly for the implementation of open science, open data, open educational resources, and reusable data. She also presented one of the latest outputs of EOSC-Pillar, *Legal Compliance Guidelines for Researchers: a Checklist* which helps researchers through the life cycle of a research project and help them to address a range of issues related to Intellectual Property Rights (IPR) and data protection. It also helps policy makers to understand the workflows needed to develop open-by-default projects. Both [print](#) and [interactive digital](#) versions are available for download.

Di Giorgio concluded that in order to develop harmonised OS national policies, it is necessary that regulatory reforms on IPR and data protection are adopted both at European and national level, to meet the principles of open data and open science. In addition, policy makers need to take into account the operational processes that researchers need to adopt, so that the research project is open by default.



EOSC Nordic

Per-Olov Hammargren (EOSC Nordic) started with an overview of the OS policies in the Nordics summarised in their D2.8 which took stock of how EOSC is reflected in national policies as well as OS policies in the Nordics in general. He also highlighted the work of their FAIR incentives task force where the ultimate goal is to reach policy harmonisation in the Baltic and Nordic region.



A FAIR incentives study unveiled the need to offer additional resources for data curation and sharing (money and time), have a sustainable infrastructure in place for sharing and publishing data, improve research support services and offer training, develop data sharing metrics and a system based on merits as well as clear requirements for data sharing and FAIR compliance and to foster a cultural change towards FAIR research, and to communicate best practices. Following the analysis of the interviews, it was discovered that there is a need for a cultural shift in research regarding FAIR data.

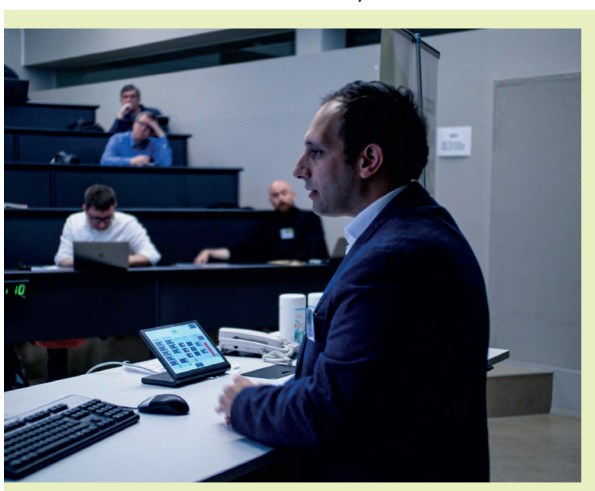
He concluded saying that the incentives introduced in this study act both as “carrots and sticks” to increase the uptake of FAIR use in the Baltic and Nordic region. The goal is that the relevant stakeholders, such as ministries, research performing organisations, research funding organisations, and service/infrastructure providers take action to increase the uptake of FAIR.

Finally, to significantly increase the uptake of FAIR, he expressed the need to take the next step from raising awareness and promoting understanding to start acting towards an environment that makes it easy and rewarding for researchers to follow the FAIR principles.

NI4OS-Europe

Ilias Papastamatiou (NI4OS Europe) introduced NI4OS Europe which covers the Balkans area. He highlighted some specific characteristics such as the diversity of the level of maturity of OS policies, RIs, research and education policies. He highlighted that governmental changes often affect the introduction and implementation of OS policies and there is a lack of sustainable structures to encourage scientific collaboration in the region.

A landscape survey was conducted where it was seen that there is a fragmented policy landscape in a unique area with many differences. It is clear that there is a need for a solution to concretely support OS policies for



the Southeast Europe (SEE) countries and encourage engagement with EOSC. The project advocated the establishment of NOSCI as a potential solution which can provide a coordinating and synergy-establishing role. He highlighted one output which was a toolbox for the establishment of NOSCI which included checklists, blueprints, training, and support events. So far, 10 NOSCI have been established across the region with five in progress. Across these, there were more than 150 independent organisations listed as official members of these NOSCI.

To conclude, he said that for SEE, it is important to keep the region aligned with EU efforts, to support countries on the path to EU accession, to ease the digital divide between the region and rest of EU, increase the retention of talented scientists and engineers in the region, and to make the benefits of the information society and Open Science available for all citizens.

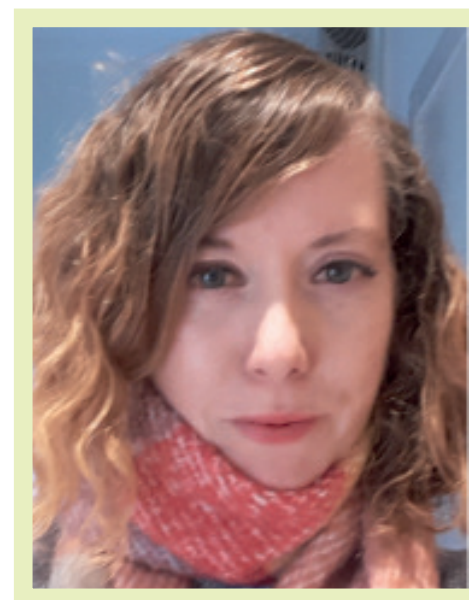
FAIRsFAIR

Joy Davidson from FAIRsFAIR provided a unique perspective from her project which was not a regional project but provides policy support activities specifically on FAIR-enabling OS policies across Europe and beyond. She presented some of the support tools they have introduced.

For policy harmonisation, they have introduced a FAIR-enabling data policy checklist which allows self assessment on whether elements of policies are FAIR-enabling aside from providing practical recommendations. This includes 40 policy elements (DMPs, persistent identifiers, repositories, etc.) across three thematic areas. (See: <https://www.fairsfair.eu/policy-recommendations-and-support-programme>)

For self-assessing organisational capabilities, she introduced ACME-FAIR as a self-assessment framework that helps to make sure the concepts are well understood and helps facilitate discussions on realistic FAIRness goals, and collaboratively plan how to achieve them. (see: <https://fairsfair.eu/acme-fair-guide-rpo>)

To support monitoring the landscape, FAIRsFAIR also developed a template for structured descriptions (see: <https://doi.org/10.5281/zenodo.6225937>). FAIRsFAIR highlighted the need to have structured descriptions as there are many mapping the OS policy landscape.



Open Discussion Key Insights

Chair: Ludek Matyska

Panellists: Filipa Pereira, Sara di Giorgio, Per-Olov Hammargren, Ilias Papastamatiou, Joy Davidson, Helen Clare, and Gareth O'Neill.

The speakers were joined by Gareth O'Neill (EOSC Future) who presented the EOSC Observatory which showed four layers of data to be collected by the EOSC Observatory to support EOSC Monitoring. Also joining them is Helen Clare.

One point of discussion was **how the work of the regional projects will continue** considering that they are ending this year. Sara Di Giorgio (EOSC-Pillar) highlighted the NOSCI which have been established in some countries or the other EOSC national structures as key to continuing the regional projects' efforts. Ilias Papastamatiou (NI4OS-Europe) also emphasised the importance for new and active projects to take up the outputs of the regional projects. Gareth O'Neill (EOSC Future) also highlighted the work of the EOSC regional projects task forces where EOSC Future has taken forward some of these outputs.

Another point was **how upskilling can be introduced at a country-level**. In NI4OS, they believe NOSCI will also play a key part in this.

One point of discussion was **what should be the role of the EOSC Association in policy harmonisation**. Sara Di Giorgio (EOSC-Pillar) said the EOSC Association can provide vision and guidance. "We need a coherent and shared vision and to coordinate the action of harmonising at a Member State-level. The association can also support the engagement of communities.

EOSC Association President Karel Luyben, who was present at the event, said this is in line with their thinking, where **a coordinating role can be fulfilled by the EOSC Association**. He highlighted the early days of the EOSC as an initiative where there was a proliferation of EOSC-tagged activities which were diverse in direction and focus. Now with the EOSC Association established, the coordination of stakeholders can be done. He noted



however that while European policies cannot dictate National Policies, best practices at the European level can help influence national policies. Filipa Pereira highlighted the importance of the linkage between the national initiatives and EOSC.

Another suggestion which came from the audience was the promulgation of a “**European Knowledge Act**” which could support and enable EOSC and OS in the future.

Reacting to some of the points mentioned, the EC’s Michel Schouppe confirmed the **importance of monitoring the progress of open science at the scale of the European Research Area**. He added that the EOSC Observatory will play a key role in achieving this. He also recommended that ongoing initiatives should **capitalise on existing structures**, one example of which are the country delegates in the EOSC Steering Board. Finally, he invited **all projects with EOSC and open science policy outputs to contact the EC and the steering board**. He said the EC will be happy to share them with the country delegates and push for their uptake by the Member States.

Session 2: Funding policies

EOSC Synergy

Dale Robertson (EOSC Synergy), opened with their funding gap analysis which identified that up to 0.83% to 2.16% of the GDP is spent on research. This is well below the target of 3% in all countries.

There is also a variation in the existence and alignment of investment strategies where most countries' investment strategies for research infrastructures, e-Infrastructures and data infrastructures are aligned to either national or European investment strategies. Only half of the countries have Open Science investment strategies in place. There was an observed mixture of national and European alignment and only a minority have investment strategies for EOSC.

Other gaps also noted were the different levels of availability of infrastructure funding, and inadequate funding for EOSC-related services to guarantee stability or continuity in most of the countries

EOSC Synergy recommended to ensure confidence in the level and stability of funding, coordinate funding for national strategies at European level, coordination of investment and strategy, ensure service providers are able to calculate and justify their service unit costs and ensure receipt of non-grant revenues is possible for infrastructures.



EOSC-Pillar

Rebecca Reichenbach of EOSC-Pillar started with a quote from one of their workshops: ““Funders and the broader research community need to think about the transition from project funding to sustained funding.”

The project follows the definition of business models as a blueprint on how an institution creates and captures value. She highlighted the various business model patterns of which there are 55. These can be linked in or combined in different ways. She also highlighted the Business Model Canvas which is one of the most streamlined ways of coming up with a business model.

EOSC-Pillar organised workshops were to study common business models particularly with their open science or educational services. Current results show five different business model patterns suitable for OS services: advertising, commissioning (percentage-based fees), pay-per-use, subscription and public funding.

For data-as-a-service, subscriptions and public funding are most feasible. For platform-as-a-service, they found the most feasible models to be advertising, commissioning, pay per use and public funding. Finally, for SaaS, advertising, subscription and public funding were seen as the most feasible.

To conclude, she said that not only is the development of these services expensive, but also their maintenance. She said that at least in the introduction phase of these services, public funding is needed. Finally, she said that a combination of various business models should be explored, but it is clear that sustainability of services is important.



EOSC Nordic

Lars Fisher (EOSC Nordic) went through funding models of six cross-border collaborations which are delivering services to more than one country and are also funded by more than one country.

Lars Fisher said that trying to identify a single funding model for EOSC is very challenging and not an appropriate solution. Breaking EOSC down into different components that can be aggregated and provided internationally, according to different strategic rationales and different funding schemes would be the best strategy to move forward.



Additionally, identifying more clearly what is in the scope of EOSC (type of resources and value proposition of offering) can facilitate the identification of appropriate funding models.

Also, EC funding for EOSC should be substantially complemented by national funding linked to the specific investments, preferably articulated in connection to national strategic interests. In addition, federation and existing legacy should not prevent the selection of the best qualitative and cost-effective solution or to build a new one .

Other recommendations were that some share of funding in EOSC should be dedicated to the cross-border infrastructural needs of the long tail of science and any new funding mechanisms identified by EOSC should come with clear rules and guidelines.

EOSC should also investigate the new governance framework for digital transition launched in March 2021 by the European Commission (EDIC - European Digital Infrastructure Consortium) which proposes a combination of investments from the EU budget, the Member States and the industry.

For more information, see: <https://doi.org/10.5281/zenodo.6217744>.

NI4OS-Europe



Eleni Toli (NI4OS Europe) introduced some of the common trends on procurement and funding sources for services and infrastructures in their region. A key part of their presentation was on NOSCI.

On NOSCI funding and sustainability, current and potential funding mechanisms were discussed. At present, a lightweight consortium structure governed and coordinated through a MoU, and funded through in kind contributions by its partners is the current model followed. All resources (computing, storage, software, connectivity and access to data) remain the property of parties who own them and make them available at their usual terms and resource management and operation, as well as the establishment of usage policies are the responsibility of each party. Eventually, the acquisition of dedicated national funding, as part of the countries OS orientation, dedicated national projects with fixed duration and the introduction of membership fees

NI4OS-Europe then called for the provision of incentives as an indirect funding mechanism for encouraging OS and FAIR such as award a priority in equipment/ service provision, award extra points according to the official research assessment system (e.g., project proposal evaluation, career advancements, allocation of funds), award a conference fee, membership fee and funds for APCs

Open Discussion Key Insights

Chair: Sara Garavelli

Panellists: Dale Robertson, Rebecca Reichenbach, Lars Fisher, Eleni Toli, and Franciska de Jong.

Dale Robertson, who also chairs the EOSC Association Financial Sustainability Task Force, said they are producing **proposals for the sustainability of the main components of EOSC**. Initial proposals will be shared this year and in the next year, they aim to validate their proposals by gathering feedback. The task force is taking into account the works of the previous projects as well as the outputs of the regional projects.

Another point that came out was that **institutes have a big role** (i.e. how libraries were funded by universities which were then funded by their ministries, but users use the library services freely). The **ESFRI and ERIC models, which provide sharing services across borders, was highlighted** especially considering services are provided to members across different countries and ERICs themselves are legal entities while still receiving funding from member countries. She called for that model to be investigated for the federated service offer for EOSC.

As for how to move forward, Lars Fisher (EOSC Nordic) said we **need to find mechanisms for international funding and free at the point of use**. Cost recovery needs to be tackled. He highlighted these models exist now and Franciska de Jong added that these are also receiving support and funding from countries.

Meanwhile, Rebecca added that not only Open Science or Open Data business models have to be considered, but we **need to motivate researchers to provide these data in the first place** otherwise the system won't be functional. Cultural change and how researchers do research has to be changed as a foundation.

An Expands project representative highlighted the models in their project where national RI which federate their data services that are funded by H2020 but also income by operating these RIs.

Another point that came out during the open discussion was that communities have differences in how they provide access to users and as EOSC needs to be cross-community, this has to be taken into account.

The disconnect between national funding for pan-European infrastructures, which may be a reflection of the lack of interest for governments to prioritise such activities, has been highlighted.

It was also generally agreed that there won't be a single business model which will fit all, but potentially a set of multiple ones that can be agile to also fit how the stakeholders operate.

One principle emphasised was that it doesn't matter the level of federation, connection or collaboration, but whoever uses services should be able to do so free at the point of use while not ignoring the source of funding to cover the costs of providing these services.

There was also a discussion on how to sustain the EOSC components and a suggestion was made for EOSC Core to be funded publicly while EOSC Exchange should be more market driven, citing some of the innovative business models in the previous presentations.

To conclude, task forces were called upon to see how the regional projects outputs can be taken into account with support from the EOSC Association. Clarity on the issues and various aspects of business models has started to come, but the next challenge will be to consider all the points. One suggestion was for the proposals and business models to be tested. Reinventing the wheel is not necessary and that implementation or testing is now key. notion



Session 3: Access Provisioning Policies

EOSC Synergy

EOSC Synergy has finalised a report on the EOSC landscape and policy gap analysis in the countries covered by the project: Czech Republic, Netherlands, Poland, Portugal, Slovakia, Spain, United Kingdom. The report featured a first set of recommendations for national and international stakeholders on measures for alignment and harmonisation of policies to facilitate EOSC implementation.



Ignacio Blanquer, EOSC Synergy Work Package leader on “Thematic Services” highlighted the main takeaways, starting with the results of a survey completed across countries on their level of awareness and implementation of EOSC, which was used to draw the landscape analysis. Ignacio explained that access conditions to research data and resources differ between countries and infrastructure types. Access may be granted - after a positive evaluation - to users of a specific country, institution or collaboration on a free basis or with a cost and potentially requiring some access policies for results. Concerning data repositories, in some cases it is required to develop a DMP and ensure compliance to FAIR principles, providing also restricted access depending on the type of data, as it may be mandatory to deposit the data in a public repository. The analysis of the country report led to 12 indicators for the gap analysis, including access restrictions, access costs, organisation procedural or technical barriers, amongst others.

Despite differences between countries, some commonalities emerged such as the high level of alignment in trying to facilitate access to part of the resources through competitive calls, and support transnational access to part of the resources through international collaborations.

Blanquer concluded sharing some recommendations stemming from the report:

1. Increase the uptake of implementation and fulfilment of FAIR principles
2. Harmonisation of policies, licensing and procedures for storing and accessing data and resources at national and international level
3. Need for a sustainable model to fund access.

EOSC-Pillar



Jos van Wezel, who oversees EOSC-Pillar’s activities on policies and legal frameworks, highlighted the results of a study to identify the legal constraints hindering the development of Open Access, Open Science and FAIR principles in EOSC-Pillar member states.

An analysis was conducted considering three selection criteria:

1. comparative relevance of the legal obstacles across EOSC-Pillar Member States,
2. the relevance of legal obstacles for scientific stakeholders (e.g. specific needs to facilitate good Open practices)
3. the urgency of fixing time provisions whose modernisation is long overdue.

A recommendation on copyright emerged: science products should

be explicitly included in copyright contract regulations and individual researchers could be acknowledged as contractual parties. Topics are regulated by EU initiatives but national implementations such as safeguards for research and statistics purposes are not equal, and at times they actually have conflicting approaches.

Another issue is that legislation does not rely on technical standards for interoperability. Best practices should be harmonised on the conditions for processing personal data for research purposes. For instance, there is no harmonisation of anonymisation procedures yet. There are flaws in the European copyright and data protection legal frameworks. The address of these flaws should be holistic and consider all science domains.

EOSC Nordic & ELIXIR

Per-Olov Hammargren introduced three deliverables on resource allocation policies for e-infrastructures. The reports looked at national policies for HPC, and aimed at understanding how to facilitate cross-border resource exchange and provisioning, as well as identifying the role of EuroHPC in this context.

National HPC resources are bound by national constraints via agreements that set the scope for the availability of resources. Most organisations in the Baltic and Nordic states have a national scope, and cross-border provisioning happens on a pilot scale.

Peter Maccallum from ELIXIR also took part in the presentation, introducing an example of cross-border provisioning between Italy and Finland in the framework of EOSC Life, specifically working on the deployment of scientific software containers from Italy and the UK on an e-infrastructure located in Finland (CSC).

EOSC Life Monitor (Italy) and EOSC PombeMine (UK) brought costs to CSC in a category that was not part of the original GA budget. This experience brought up the need for EU financing methods to be updated, as it was difficult to report e-infrastructure costs in the budget categories present at the time. The new cost category should be added via amendment to GA. In the future, open calls and new cost categories could be useful additions for this kind of cross-border collaboration.



NI4OS-Europe

Andreas Athenodorou, who leads NI4OS-Europe's User Engagement activities, presented the Open Call launched in April 2022, providing successful applicants with access to services available in the NI4OS-Europe Catalogue, which is also integrated with the EOSC Portal. The Open Call works as a Proof of Concept to test quality and usefulness of the available services and resources, enabling researchers to produce scientifically relevant outputs, which are expected to be in line with Open Science principles.

Representatives from thematic communities in the region carried out use cases to test and finetune the environment prior to the launch of the Open Call¹, covering such domains as life sciences, digital cultural heritage, climate science and computational physics. Aside from thematic services, successful applicants are also able to exploit NI4OS-Europe generic services like HPC resources, storage and data management.



1 <https://doi.org/10.5281/zenodo.3971647>

Open Discussion Key Insights

Chair: Volker Beckmann

Panellists: Ignacio Blanquer, Jos van Wezel, Per-Olov Hammargren, Peter Maccallum, Andreas Athenodorou, Mark Van der Sanden, and Hien Bui.



The session centred on obstacles to international use of EOSC resources, such as the lack of an international framework, or financial aspects.

An important issue that emerged early in the discussion was what kind of access policies are there for the services available in the EOSC Portal. According to Mark van de Sanden (EOSC Future), it should be up to providers to define them, and they might be different also depending on the type of user (local, international, etc.).

When it comes to cross-border sharing of resources, Hien Bui (EGI-ACE) highlighted the need for a common framework which goes beyond the usual project basis, also as a way to address long-term sustainability after projects end.

While it is desirable to work towards a common European transnational framework, Per Olov Hammargren (EOSC-Nordic) mentioned that we also

have to deal with the concrete reality we are in, including eventual restrictions and differences between countries.

Projects themselves cannot solve these issues alone, and that is where the wider policy ecosystem comes into play, especially through actors like the EOSC-Association and Member States representatives. Alignment is particularly important at national level as well as at regional level. According to Ignacio Blanquer (EOSC-Synergy and EOSC Association Director), what NI4OS is doing at the national level is helpful.

National funding agencies are a key stakeholder in this discussion, and the EC can play a proactive coordination role in stimulating Member States to tackle Open Science issues.

Jos van Wezel (EOSC-Pillar) wonders if we already know what exactly the necessity is for cross-border access, for example via the monitoring that was discussed in the morning.

The need for cross-border access is high for thematic communities, and it would be really useful to be able - for example - to access different survey data from other countries. There is no comparative research without cross-border access to relevant materials.

According to Andreas Athenodorou (NI4OS-Europe), cross-border access to resources can play a fundamental role especially for researchers in smaller countries, which are often not able to cover all scientific domains, or to provide top quality services and datasets. Research on the COVID-19 pandemic was a perfect example of this.

With the EOSC Marketplace, there is an attempt at making useful resources available across borders.

Peter Maccallum (EOSC-Life) also brought the example of cross-national projects to highlight the need for transnational access to resources, which makes the mechanism relevant also outside of EOSC.

Generally speaking, cross-border services at thematic level/vertical are more sustainable than general ones.

The main reason why transnational access for large infrastructures is appreciated is that its value is clear. We need to convince funders to pay for services (such as computing, storage, and so on) and make them available to research communities.

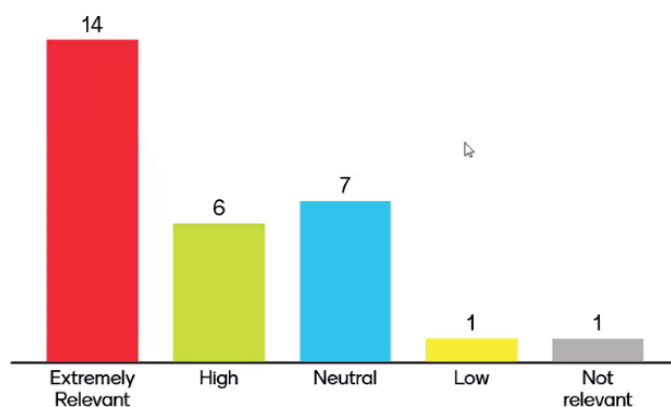
There are a few questions that also need to be addressed in that context: why would one country pay another country to provide a service that you could provide in your own country. Also, what would motivate someone to provide a service in this way?

One of the closing remarks was also to make these resources easier to access in general, as private providers simply request to be paid and then users can exploit the resources, while it often is more complex to do the same for those provided by public infrastructures. Policies to help transfer best practices should also be encouraged.

Session 4 Feedback poll and conclusions

The event concluded with an interactive session aimed at engaging all the audience both online and on-site. The session started with a warming up question focused on the country of residence of the conference participants and then continued with various polls related to the Open Science domain, and more specifically the National Open Science Cloud Initiatives. Firstly, attendants were asked about the importance of international policies. The majority of people believe that the implementation of policies at an international level is extremely relevant to implement EOSC also at national level

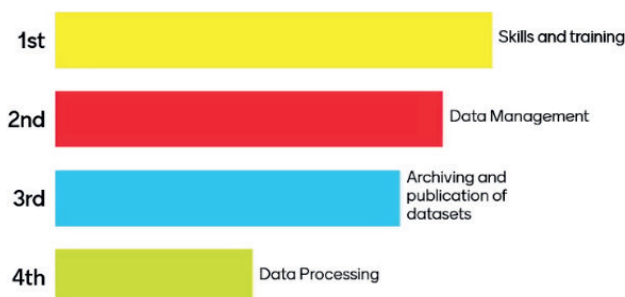
Open Science Strategy and Policy: National Open Science Cloud Initiative (NOSCI)



Please rank by relevance (1 the highest) the key areas that should be supported by national competence centers (general).

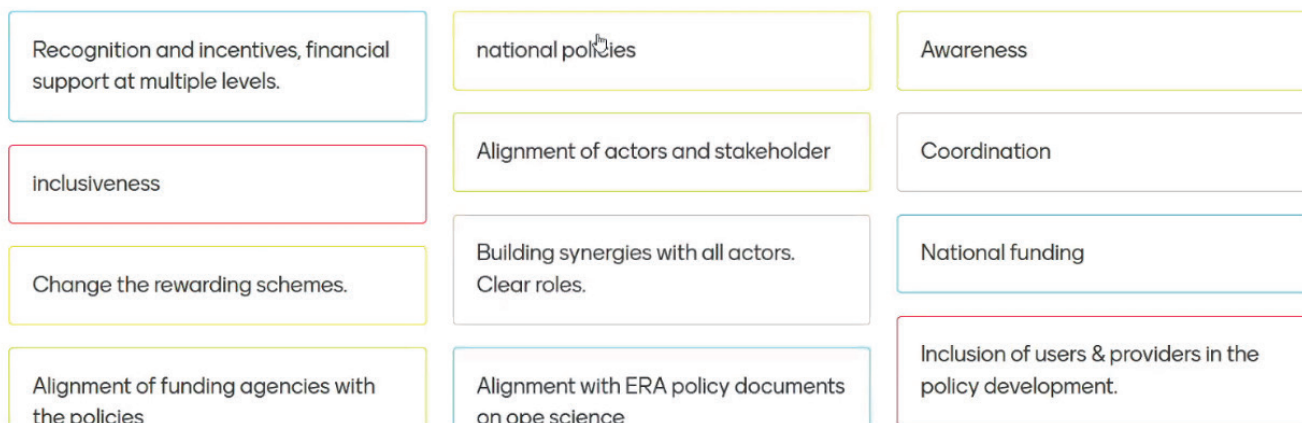


Please rank by relevance (1 the highest) the key areas that should be supported by national competence centers (thematic)

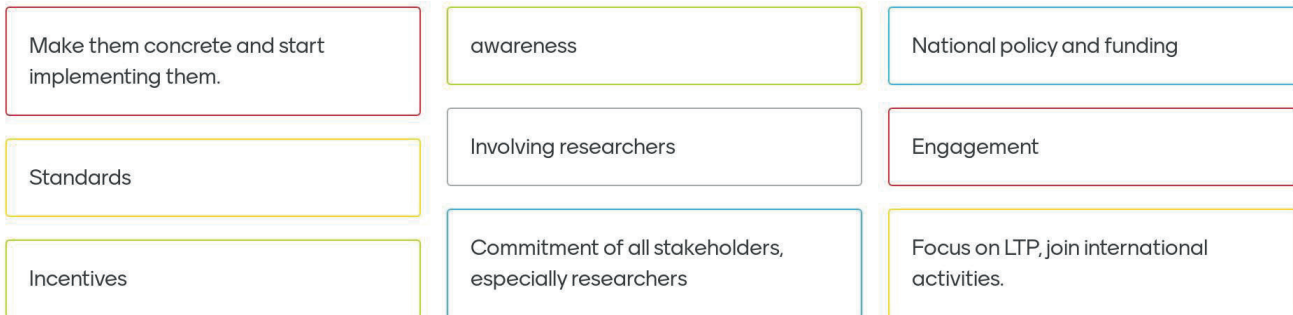


Afterwards, people expressed their opinion on the key areas that should be supported by national competence centres. There are some slight differences when considering general or thematic initiatives. While skills and training are considered relevant areas for both types of initiatives, data management is more important at thematic level, whereas archiving and publication of datasets are more relevant for general initiatives

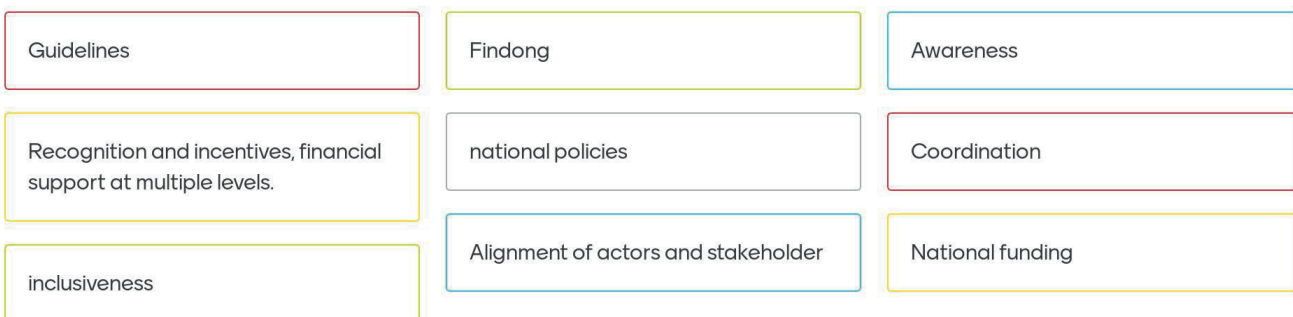
What are the key factors in the development and implementation of national Open Science policies?



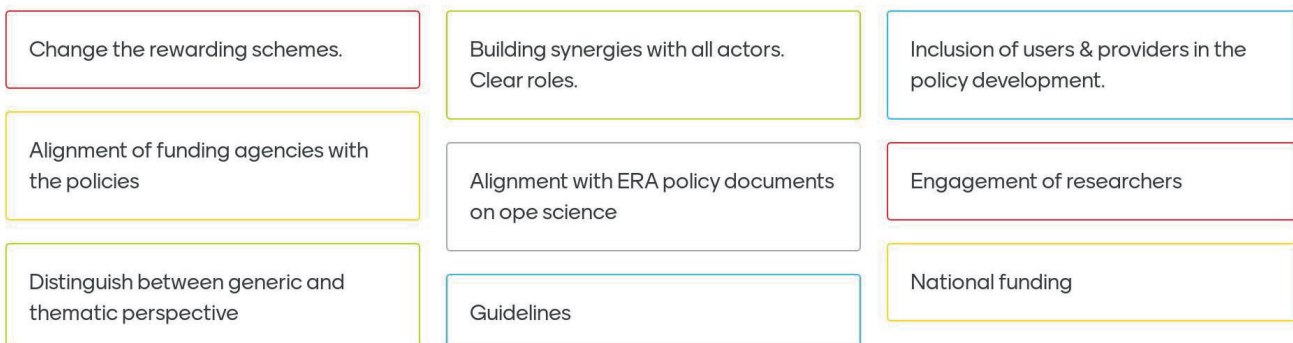
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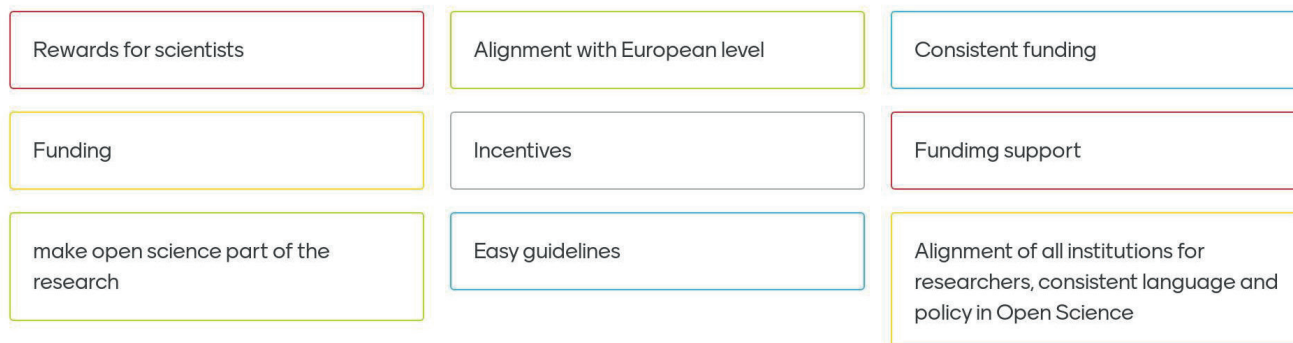
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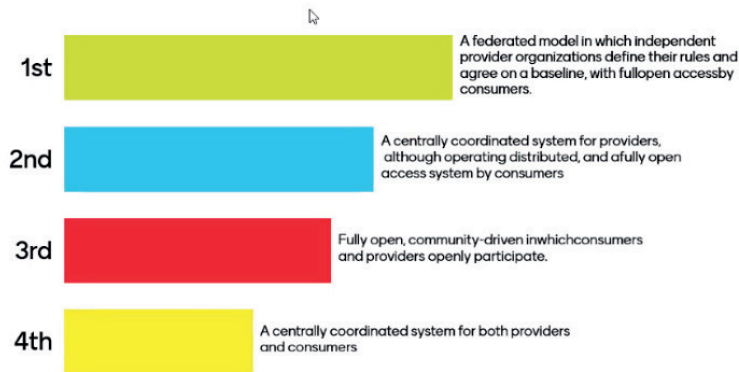


Beyond international and national policies, the audience was asked to mention key factors in the development and implementation of national open science policies. As a result a set of factors emerged, revealing the importance of ensuring alignment and coordination among different types of stakeholders.

In the final segments of the sessions questions were asked regarding the preferred access models to national open science initiatives, also considering cross-border access and funding schemes.

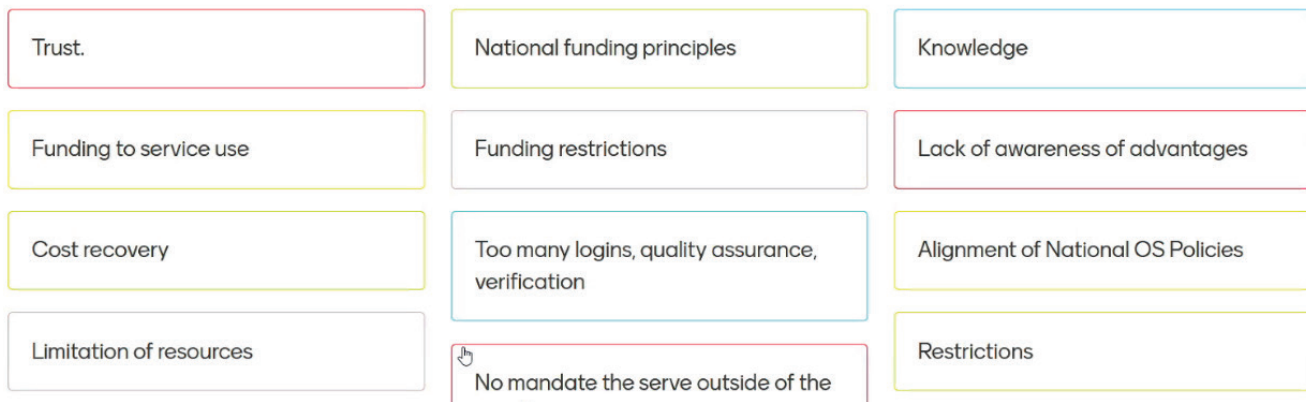
Regarding the access models, the audience prefers a federated model in which independent provider organisations define their rules and agree on a baseline with full open access by consumers, while a centrally coordinated system for both providers and consumers is least preferred.

What are your preferred (1 the most) access models, for both users (consumers) and data and service providers?

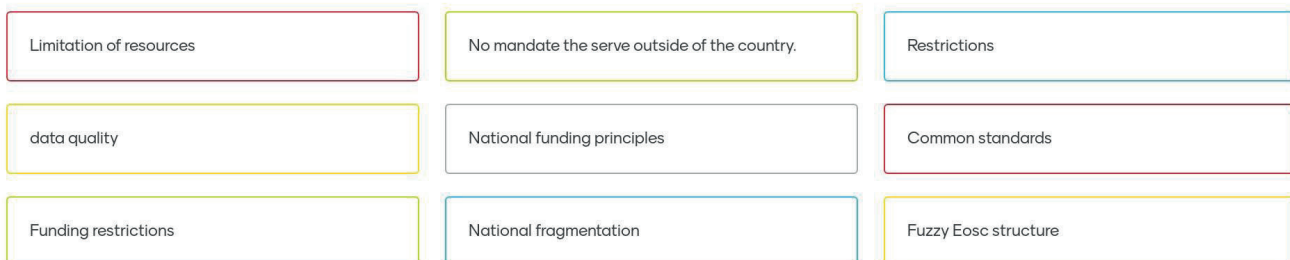


Regarding cross-border access, key barriers were identified around the themes of funding restrictions, lack of awareness and trust problems. This latter is an extremely important barrier which was not touched in the panel discussion.

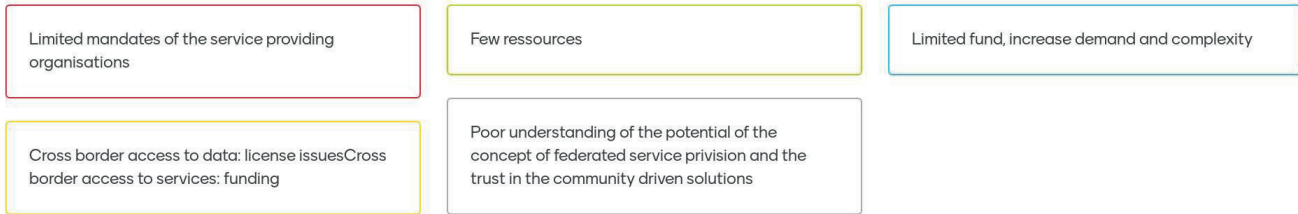
What are the key barriers to foster cross-border access policy?



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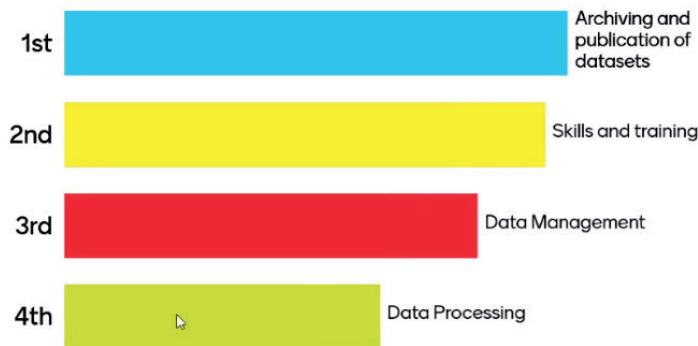


What are the key barriers to foster cross-border access policy?



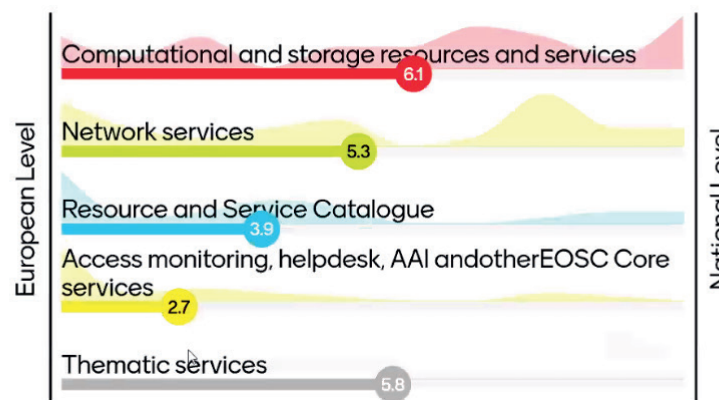
Finally, regarding the funding and cost savings topics, participants believe that archiving and publication of databases and skills and training are the top areas that should be funded by national intervention.

Please rank by relevance (1 the highest) the key areas that should be funded by national intervention?

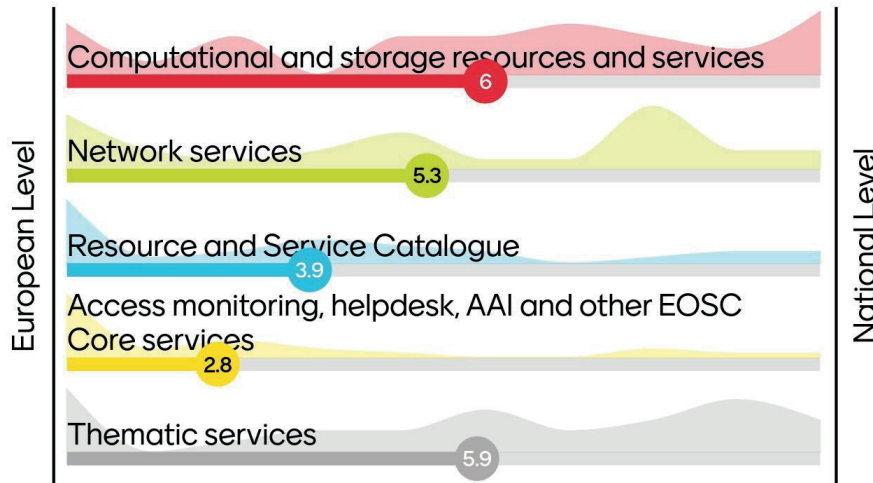


It also emerged that computational and storage resources, network services and thematic services should be mainly funded at the national level, while Resource and Service Catalogue and EOSC Core services should be funded at the European level.

Who should fund the following services?



Who should fund the following services?



Funding would be beneficial to the realisation of a series of cost savings following the implementation of EOSC at a national level. While some respondents believe no significant savings could be reached, those who believe there is room for savings identify the areas of computation and archiving, monitoring, knowledge sharing, data production and IT development as the key ones.

Where do you foresee that cost savings could be realised across the research landscape as a result of implementation of EOSC in your country?



Sharing knowledge	No significant savings	Re-development of functionally similar solutions (IT)
Producing of data	Funding multiple times the same experiments.	Archival costs, computation costs (lack of software efficiency)
Nowhere, no reduction in costs but better implementation with EOSC - #sharing of knowledge skills	Domain specific services	Monitoring

Where do you foresee that cost savings could be realised across the research landscape as a result of implementation of EOSC in your country?



Resource of IT building blocks, avoid not invented by me syndrome.	Better optimization of resources and services	Less data redundancies (has also an environmental advantage)
Storage	Skills and Education	Not needing to implement all services nationally
Less need to redo experiments	Monitoring	Catalog and Marketplace

Where do you foresee that cost savings could be realised across the research landscape as a result of implementation of EOSC in your country?



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Where do you foresee that cost savings could be realised across the research landscape as a result of implementation of EOSC in your country?



Collaboration at thematic cluster level leverages national investments in RI services	Very nice to met you all!!!	Interesting sessions, thanks
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Where do you foresee that cost savings could be realised across the research landscape as a result of implementation of EOSC in your country?



Nowhere, no reduction in costs but better implementation with EOSC - #sharing of knowledge skills	Domain specific services	Shared trusted repositories
Common infrastructure	Data storage	sharing and reuse
Shared services and data	No direct cost saving - but better visibility	Support to cooperation

Where do you foresee that cost savings could be realised across the research landscape as a result of implementation of EOSC in your country?



Reuse of data	shared value added services	Re-development of functionally similar solutions (IT)
Sharing knowledge	No significant savings	Archival costs, computation costs (lack of software efficiency)
Producing of data	Funding multiple times the same experiments.	Monitoring

Where do you foresee that cost savings could be realised across the research landscape as a result of implementation of EOSC in your country?



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See the slides presented. Visit:
eosc-pillar.eu/sxb-policies-workshop

