



**EUROPEAN OPEN
SCIENCE CLOUD**

EOSC GOVERNANCE SYMPOSIUM 2020

#EOSCSymposium2020

19-22 October 2020

Launching the Second Phase of EOSC

Highlights

The EOSC Governance Symposium Programme Committee

The EOSC Symposium Programme Committee is made up of representatives of EOSC Governance and the EOSC landscape, as well as representatives of the German Presidency of the Council of the EU.



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Disclaimer

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Programme

Follow the link below for the detailed programme including session recordings and presentations.

www.eoscsecretariat.eu/eosc-symposium-2020-programme



Finally, we'd like to thank you, the EOSC stakeholders who despite these challenging times, made this the biggest EOSC Symposium to date



Introduction

The EOSC Governance Symposium 2020 brought the EOSC community together to discuss the transition of the EOSC from its initial phase of development (2016-2020) to its second implementation phase (2021-2027). The event was a culmination of two years of work carried out by the current EOSC governance including the EOSC Governance Board and the Executive Board and its Working Groups.

Delivered online to just under **1,000 EOSC stakeholders from over 50 different countries**, this was not only the largest EOSC Symposium yet, but it was also an essential opportunity for convergence and alignment on principles and priorities which are key for ensuring a smooth transition to the implementation phase.

During the Symposium, the Executive Board and its Working Groups delivered nine vital documents which are in various stages of publication. They pave the way forward for EOSC and provided the right spark for extensive and constructive discussion throughout the four days.

Central to these documents and the Symposium itself, was the **EOSC Strategic Research and Innovation Agenda (v0.8)** which defines the general framework for future strategic research, development and innovation activities in relation to the EOSC. This will be further defined in the context of the candidate EOSC European Partnership proposed under the Horizon Europe Programme.

Documents published during the Symposium

- **EOSC Strategic Research and Innovation Agenda - Version 0.8¹**
- **Six Recommendations for Implementation of FAIR Practice² - official publication**
- **A Persistent Identifier (PID) policy for the European Open Science Cloud³ - official publication**
- **Landscape of EOSC-related Infrastructures and Initiatives⁴ - official publication**
- **FAIR Metrics for EOSC⁵ - 2nd Draft out for comments**
- **Solutions for a Sustainable EOSC⁶ - Iron lady Draft**
- **PID Architecture for the EOSC, EOSC AAI Architecture, Scholarly Infrastructures for Research Software⁷ - Drafts for consultation**
- **EOSC Rules of Participation⁸ - Draft 0.5**

Over the four days, the EOSC Governance animated a range of interactive sessions with the community. Each day provided a focus on specific aspects of the journey towards the next iteration of EOSC. With the symposium held as part of the German Presidency Programme the event was opened by representatives of the German Presidency of the Council of the EU, members of the EOSC Governance, and the European Commission. Each gave a comprehensive overview of the current landscape in Europe in the context of the new **European Research Area⁹**.

With the **EOSC Association¹⁰** established just one month before the event, the first day also focussed on providing an update on the status of ongoing and planned activities for the Association and the EOSC European Partnership. To date, 170 organisations have applied to become members, observers and mandated organisations. This shows the strong interest and commitment from across Europe.

An important future role of the Association will be the evolution of the EOSC SRIA, the first version of which is being completed by the EOSC Executive Board. The current version **0.8¹¹** was presented at the event and the topics formed the core areas focus for much of the rest of the event and which provide the framework for activities in the context of the **EOSC European Partnership** under the Horizon Europe programme.

The COVID-19 platform has changed our lives dramatically and Day 2 focussed on the **COVID-19 Data Portal¹²** which is one of the clearest examples of international cooperation in open science and is addressing perhaps the most pressing of societal challenges that we face today. The portal has also highlighted where improvements can and should be made. Challenges and best practices for building EOSC on national and thematic initiatives were also discussed and inspired by the example of NFDI – the German National Research Data Infrastructure.

On days 3 and 4, the **EOSC Executive Board Working Groups** took centre stage, sharing the latest updates on their work as well as key outputs¹³ to be discussed within the EOSC Community, on the road to the official publications to be released by the end of 2020.

On day 3 **implementation challenges of EOSC** were covered including the designing **Minimal Viable EOSC**, including architecture, interoperability and FAIR priorities. Furthering involvement of the public and private sectors in EOSC was also discussed, as well as collaboration with key initiatives such as **GAIA-X¹⁴** which is proposing a next generation of data infrastructure for Europe. Policy and technology priorities on the issue of equity in the development of EOSC across countries with different open science environments was also discussed.

Day 4 considered the **boundary conditions for EOSC** such as the **rules of participation**. With open science practices not yet the norm amongst many researchers, transparent and consistent rules of participation in EOSC are essential to build the trust and confidence required to support this process of change. Similarly, viable business models can ensure an operational, scalable and sustainable EOSC. Finally, **skills and training** were also addressed which are essential for the mainstreaming of open science practices in research which is vital for the success of EOSC.

With open debate on the topics of all documents a key element of the symposium, **“open clinic” sessions** ran each day and were particularly effective in enabling participants to directly interact with the speakers from each day.

Co-creation is an important part of how the EOSC is being built and each day lightning talks were also given from studies, workshops, interviews and other activities funded by the **EOSCsecretariat.eu** project¹⁵. These have proved to be an important source of information for the EB and the Working Groups over the last two years, and many are still on going.

In this report you will be able to learn about the main outputs from all sessions, you can also find the presentations and recordings of the entire Symposium on the EOSC Secretariat website¹⁶.

¹ <https://www.eoscsecretariat.eu/sites/default/files/eosc-sria-v08.pdf>
² <https://op.europa.eu/en/publication-detail/-/publication/4630fa57-1348-11eb-9a54-01aa75ed71a1/language-en/format-PDF/source-166584930>
³ <https://op.europa.eu/en-GB/web/eu-law-and-publications/publication-detail/-/publication/35c5ca10-1417-11eb-b57e-01aa75ed71a1/language-en>
⁴ <http://op.europa.eu/en/publication-detail/-/publication/cbb40bf3-f6fb-11ea-991b-01aa75ed71a1/language-en/format-PDF/source-156485650>
⁵ <https://www.eoscsecretariat.eu/eosc-liason-platform/post/provide-feedback-second-draft-fair-metrics-eosc>
⁶ https://www.eoscsecretariat.eu/system/files/solutions_for_a_sustainable_eosc_-_ironlady_draft_19oct20.pdf

⁷ <https://www.eoscsecretariat.eu/news-opinion/eosc-architecture-pid-aa1-and-sirs-task-forces-draft-documents-out-comments>
⁸ <https://www.eoscsecretariat.eu/eosc-liason-platform/post/new-draft-rules-participation-eosc-available-comments>
⁹ https://ec.europa.eu/commission/presscorner/detail/en/ip_20_1749
¹⁰ <https://www.eoscsecretariat.eu/news-opinion/eosc-association-numbers>
¹¹ <https://www.eoscsecretariat.eu/sites/default/files/eosc-sria-v08.pdf>
¹² <https://www.covid19dataportal.org/>
¹³ <https://www.eoscsecretariat.eu/eosc-governance/eosc-executive-board-outputs>
¹⁴ <https://www.data-infrastructure.eu/GAIX/Navigation/EN/Home/home.html>
¹⁵ <https://www.eoscsecretariat.eu/funding-opportunities/list-approved-co-creation-activities>
¹⁶ <https://www.eoscsecretariat.eu/eosc-symposium-2020>



**Monday, 19 October 2020
Towards EOISC 2.0**



**Monday,
19 October 2020**
Towards EOSC 2.0

9:30-11:00 EOSC Symposium welcome & keynote presentations



Chair

Hanifeh Khayyeri
EOSC Governance Board Co-Chair

Introduction

The EOSC Symposium was opened by the EOSC Governance Board Co-Chair **Hanifeh Khayyeri**, who emphasised the strong collaborative relationship that has been established between the current EOSC Governance and Executive Boards (EB) in the last two years. She commended the effort of the Executive Board (EB) in working tirelessly on the EOSC Strategic Research and Innovation Agenda (SRIA) for inclusion in the next European Commission framework programme, Horizon Europe. She also commented on the EB's efforts in taking into consideration the numerous Member States' concerns. Therefore, the SRIA can be considered as a result of co-creation and co-design.

Further opening speeches were given by **Susanne Burger**, Director General at European and International Affairs Federal Ministry of Education and Research (BMBF) in Germany, **Kostas Glinos**, the Head of Unit of DG RTD Open Science Unit, **Liina Munari**, Deputy Head of Unit eInfrastructures and Science Cloud of DG Connect, and finally the Representative from German Scientific Council **Petra Gehring**.

[Watch the full session](#)

Main takeaways

- Open Science is becoming a high-level objective of the European Union and the general idea behind Open Science is becoming more concrete and tangible.
- The key Commission strategies are:
 - The Digital Strategy, setting a vision for the Commission to become a digitally transformed, user-focused and data-driven administration by 2022.
 - The Industrial Policy Strategy, strengthening the competitiveness of Europe's manufacturing sector and, as a result, the whole European economy.
 - The European Green Deal making Europe the world's first climate-neutral continent by 2050.
 - The EuroHPC strategy deploying in Europe a world-class supercomputing infrastructure and a competitive innovation ecosystem in supercomputing technologies, applications and skills.
 - The Data Strategy creating common European data spaces, covering also data processing, computing and interconnection of existing computing capacities at a national and a European level.
- EOSC builds on trans-European academic infrastructures which have evolved over the past thirty years with EU support. National infrastructures, Research Infrastructures and e-Infrastructures are the key pillars of EOSC.
- Germany, with the National Research Data Infrastructure (NFDI) initiative, has fully embraced the EOSC vision by creating "safe" spaces for experimentation by communities, data producers and practitioners, so that they have the time, and shared ambition, to find workable solutions, and in which the numerous unresolved questions, or fit-for-purpose models, can be explored "bottom up", i.e. involving the people who really understand the data and how it should be handled in the respective communities
- Overall extraordinary progress has been made and now we are very fortunate to witness as the remarkable, sometimes starry-eyed, vision behind the EOSC as it becomes a reality.

Future steps

- EOSC to grow into a trusted data space (strategic objectives in the next funding period until 2027) and ensure a transition towards a web of data (important to determine its operationalization and added-value and benefits).
- Main challenges for the next phase of EOSC include moving towards operationalisation (from the current prototyping status) and establishing a stakeholder-driven and federated Governance.
- To ensure long-term sustainable success, new practical thinking is required to tackle long-standing deficits and find workable solutions (e.g. to issues such as quality assurance, legal compliance, GDPR, etc.).
- Recommendations for a successful EOSC implementation are: listen to the communities; carefully select the priorities; avoid politicising; and invest in EOSC.



**Monday,
19 October 2020**
Towards EOOSC 2.0

11:30-13:30 All you need to know about the EOOSC European Partnership & Association and interactive discussion on the results of the SRIA Consultation



Chair

Sarah Jones
EOOSC FAIR WG Chair & Individual Expert

Introduction

The EOOSC Executive Board Co-Chair **Karel Luyben** opened the session presenting the results of the SRIA consultation which saw over 200 responses collected. **Sarah Jones**, Individual expert in the EOOSC EB and Chair of the EOOSC FAIR Working Group, presented how the feedback had been key to creation of the SRIA version 0.8, published during the Symposium¹⁷. The SRIA consultation and respective priorities weighing of the Multiple-Choice responses also resulted in the development of the Multi-annual Roadmap, which will be integrated into future versions of the SRIA. **José Luis de Miguel** from CSIC, one of the four EOOSC Association founding members, provided an update on the EOOSC Association which will be tasked with the implementation of the SRIA.

[Watch the full session](#)

Main takeaways

- A SRIA V0.8¹⁸ including guiding principles, strategic objectives, action areas (divided into implementation challenges and boundary conditions) and KPIs is now available .
- The EOOSC EB is working on a Multi-Annual Roadmap (MAR) structured around three broad objectives:
 1. Develop Open Science practices as the new normal; ensure the new normal by coordination and communication activities that promote Open Science.
 2. Building an Open Science community based on shared publications, data and software, enabling exploitation of a FAIR data via thematic clouds.
 3. A functional, performant federation of research infrastructures.
- An EOOSC Association was established as a Aisbl¹⁹ on July 2020.
- The international purpose of the Association is
 - To provide a single voice for advocacy and representation for the broader EOOSC stakeholder community;
 - To promote the alignment of European Union research policy and priorities with activities coordinated by the Association;
 - To enable seamless access to data through interoperable services that address the entire research data lifecycle, from discovery to storage, management, analysis, and reuse, across borders and scientific disciplines.
- All the EU players have been invited to join the EOOSC Association through an open call: To date, 184 applications have been received (candidate members mostly, and a few observers).

Future steps

- The next iteration of the SRIA (V0.9) will be shared with the Governance Board in November.
- The maintenance and update of the SRIA will be handed over to the EOOSC Association at the end of the year. A Multi-annual Roadmap will be released by the EOOSC EB by the end of the year.
- The EOOSC Association will continuously onboard new members, if you are interested please apply now²⁰.
- The first General Assembly of the EOOSC Association will be held in December 2020.

¹⁷ <https://www.eoscsecretariat.eu/news-opinion/eosc-strategic-research-and-innovation-agenda-version-08>

¹⁸ <https://www.eoscsecretariat.eu/sites/default/files/eosc-sria-v08.pdf>

¹⁹ https://www.eoscsecretariat.eu/sites/default/files/eosc_statutes.pdf

²⁰ <https://www.eoscsecretariat.eu/application-joining-eosc-association>



**Monday,
19 October 2020**
Towards EOOSC 2.0

13:30-14:30 First EOOSC clinic:
Ask me anything session

[Watch the full session](#)

EOOSC clinic

The EOOSC clinic: Ask me anything sessions were an essential part of the EOOSC Symposium program and enabled participants to lively interact with the members of the EOOSC EB. On the first day, most questions focused on high-level EOOSC topics, the SRIA version 0.8 and the EOOSC Association.

Main discussion points

- It was noted that partnerships are fairly new and that the EOOSC partnership is just one of the many partnerships in Horizon Europe. The roles and responsibilities in the tripartite system were explained to the participants.
- Setting up the new EOOSC governance is a process. The working groups, or some of them, could be asked to continue for a while because there is a lot of expertise in them. New working groups might be set up in the future.
- The Sustainability WG commissioned a study on the EOOSC core operational costs. The results will be incorporated into the Iron Lady document. It was noted that it is an advanced study and provides a lot of information. However, it provides only limited info on the EOOSC exchange. Business model should cover EOOSC exchange in addition to EOOSC core.
- There is a two-fold coordination challenge ahead: How to get the projects to get in touch with the EOOSC Association? How national data initiatives could feed into the future EOOSC?



**Monday,
19 October 2020**
Towards EOOSC 2.0

14:45-15:30 EOOSC Secretariat co-creation main outputs and contributions to EOOSC



Chair

Bob Jones

CERN & EOOSCsecretariat.eu

[Watch the full session](#)

Main Outputs

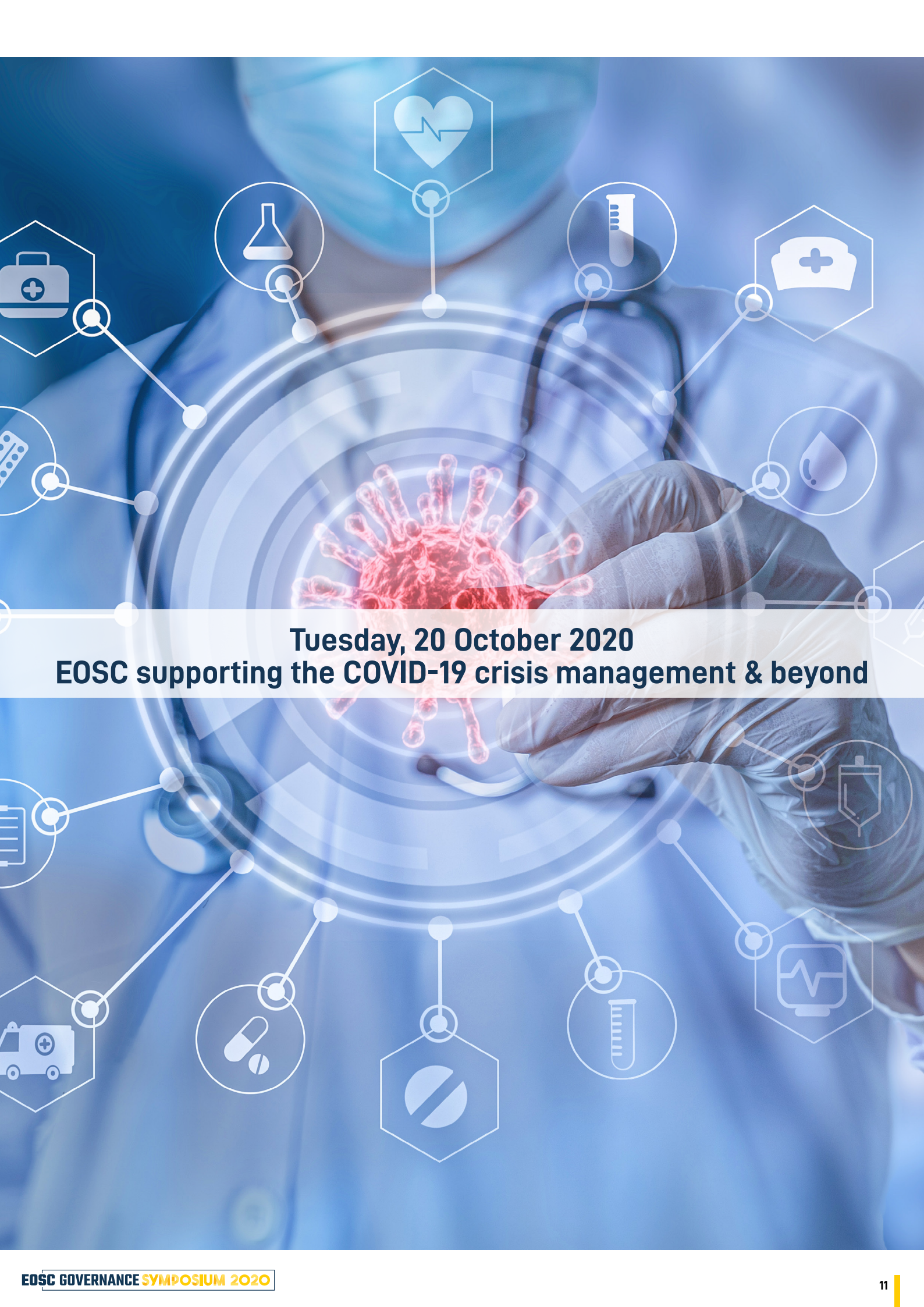
The chair of the session, **Bob Jones** from CERN, introduced the concept of the Co-creation Fund to all the participants and highlighted the work done with the co-creation fund and the impact of the results/deliverables, as well as its contribution to shaping EOOSC.

This session was the first of a series of four that took place over the Symposium. The first presentation featured the following three co-creation activities:

- 1: Analysis to support the Strengthening of the EOOSC Risk Governance - **Fabrizio Sechi**, Aon Advisory and Solutions S.r.l.
 - This study was developed through an open call, commissioned by the EOOSC Secretariat and supported by the Sustainability WG. The study was carried out to support the current and future governance of the EOOSC through the implementation phase (2021) and is currently being reviewed by the Sustainability WG. The goal was to produce two orientation maps that could facilitate the understanding of the strong relationship between risk governance and the EOOSC's strategic agenda.
- 2: Legal and strategic advice on EOOSC legal entity membership and governance structure - **Hans Craen**, Kellen
 - This study centred on the EOOSC legal entity membership and governance structure. The study focused on the practical and governance aspects that should be taken into consideration when setting up the EOOSC Association: Belgian law; membership options; governance aspects. The study reflected on several key questions, such as: What should be the role of the member states? What should be the role and function of the European Commission? How to deal with organisations that do not want to be integrated into the legal entity as such, but at the same time want to maintain a connection?
- 3: EOOSC Glossary - **Dario Mangione**, Individual expert
 - This presentation was about the production and the development of the EOOSC Glossary to be used as a basis for the standardisation of EOOSC's terminology. The glossary has been produced with the support of different communities. The process included the following steps: collection > analysis > definition writing and harmonization (reuse of existing definitions) > validation. A challenge that has emerged from the study is that the various communities involved in EOOSC projects do not always share the same understanding of the terms used/adopted in EOOSC. The glossary is an ongoing activity: two versions have been released so far (June 2020²¹ and September 2020²²). The latest version features 107 concepts (27 unstructured). There is the need for a common abstraction level.

²¹ <https://www.eooscsecretariat.eu/eoosc-liaison-platform/post/first-intermediate-version-eoosc-glossary-released>

²² <https://www.eooscsecretariat.eu/eoosc-liaison-platform/post/second-intermediate-version-eoosc-glossary-released>



Tuesday, 20 October 2020
EOSC supporting the COVID-19 crisis management & beyond



**Tuesday,
20 October 2020**
*EOSC supporting
the COVID-19 crisis
management & beyond*

9:30-10:30 The European COVID-19
Data Platform: early
results, challenges & future
developments



Chair **Kostas Glinos**
DG RTD, European Commission

Introduction

Chaired by **Kostas Glinos**, DG RTD, this session introduced the European COVID-19 Data Portal²³ which was launched in April 2020. **Guy Cochrane** from the European Nucleotide Archive offered an overview of the Portal and focussed on its relevance for EOSC. The portal relies on the EOSC-Life, Elixir and the Corbel European infrastructures integrating them with components built for the analysis of infectious disease in the context of other projects (e.g. COMPARE project). The platform has centralised components (for the management of bio-molecular data), national level components (for the retrieval and analysis of sensitive clinical and human data) and European components (the data from infrastructures across Europe). Cochrane remarked that the rapid start-up of the platform was possible because of the strong foundations built in the past via previous investments in the data infrastructures area.

Marion Koopmans and **Wiro Niessen** from the Erasmus Medical Centre underlined how critical the combination of different types of data is for understanding the biology of the virus and how the virus spreads. The bio-molecular data from sources like EMBL-EBI played an important role in the research performed in recent months. However, this data is not enough as it needs to be complemented by clinical and therapeutical data to understand the wider context of the disease and its impact.

Watch the full session

Main takeaways

- Data sharing is still very challenging.
- Currently within health data there is fragmentation for data, images and samples, collected in different places and under different conditions. Additionally, there are problems with the reliability, quality, and usability of data. Together these issues make the reuse of data very problematic.
- A willingness to share data requires building trust within the research community, especially where different disciplines start to work together. A key element of this is to establish a legal basis for re-use of data. This includes addressing issues of consent, which is crucial for many researchers.
- A key challenge is to be able to integrate bio-molecular data with clinical data and with data from the social sciences. This will allow to understand the dynamics and the impact of COVID-19 and of the associated societal challenges.
- Machine learning can be a very powerful tool to help in understanding the evolution of the pandemic. It can provide insights into the data down to the level of understanding impacts on individuals. However, it requires access to good data for development and validation.

Future steps

- Governance processes for data sharing must be very clear, and incentives for data producers to share their data must be put in place.
- The diversity of the stakeholders involved in providing relevant data for the COVID-19 research (patients, doctors, etc.) makes the building of an effective and efficient governance policy very complex.
- The new European Health Data-space will work to address the above challenges in collaboration with EOSC and the other existing initiatives.

²³ <https://www.covid19dataportal.org/>



**Tuesday,
20 October 2020**
*EOSC supporting
the COVID-19 crisis
management & beyond*

11:00-12:00 EOSC supporting the COVID-19
crisis management



Chair

Kostas Repanas
DG RTD, European Commission

Introduction

Featuring the three speakers from the previous session, this panel session was chaired by **Kostas Repanas** from DG RTD. They were joined by **Priyanka Pillai**, University of Melbourne and RDA who presented the final version of the COVID-19 Recommendations and Guidelines for Data Sharing published on 30 June 2020²⁴ by the Research Data Alliance COVID-19 Working Group; and **Sylvia Kritzing**, University of Vienna who introduced the work done by the Austrian Corona Panel Project²⁵.

The panel discussion looked at significant questions in the area of social science and health data, and how these can be combined to support a better understanding of the COVID-19 pandemic and how to respond to it. Working across domains is difficult, and there is a real need to invest in infrastructures, skills, and data partnerships.

[Watch the full session](#)

Main takeaways

- The linking of medical and social data often requires use of personal identifiers which imply legal and medical constraints. These legal and ethical issues need to be solved as soon as possible to enable an effective data sharing.
- Cross-border data sharing is another issue. Each country has different regulations. Even GDPR issues may vary within Europe, as legal frameworks can be interpreted differently. It is of paramount importance to understand what legal frameworks allow and do not-allow in an emergency situation like the current pandemic.
- Having good data collection and management processes in place will help with reuse of data as well as incentives for data providers.

Future steps

- There is a need to understand why the same legal frameworks are interpreted differently in different places, as this implements an obvious barrier to data sharing.
- Studies across boundaries based on effectively sharing the tools and keeping the data local. In the short term, distributed solutions will provide the fastest way scale up the solutions.
- EOSC can support the connection of data catalogues across different infrastructures.
- There is a lack of a good health data infrastructure to support the reuse of data. The crisis has made explicit what areas we need to advance and what needs to be done – now we are better prepared for future challenges.

²⁴ <https://doi.org/10.15497/rda00052>

²⁵ <https://viecer.univie.ac.at/en/projects-and-cooperations/austrian-corona-panel-project/>



Tuesday, 20 October 2020

EOSC supporting the COVID-19 crisis management & beyond

12:30-13:30 Building EOSC on a national & thematic focused initiative: the NFDI use case



Chair

Anu Nuutinen
EOSC Governance Board
& Academy of Finland

Introduction

The session, chaired by EOSC Governance Board member **Anu Nuutinen**, started with an overview of the main results of the EOSC Landscape Working Group provided by the WG Chair **Jan Hrušák**. The discussion then moved on to the example of the National Research Data Infrastructure (NFDI)²⁶, a large nationwide initiative that has been recently established in Germany, which was presented and discussed by **York-Sure Vetter**, **Mehtap Özasan**, and **Christoph Wolf**.

From the landscaping report²⁷ it is clear that EOSC is well recognised in all countries, and there has been significant progress across Europe in EOSC related activities accompanied with investments in data oriented RIs.

NFDI is a relatively new but already living network consisting of a growing number of consortia of which two were presented. The consortium Konsortium SWD presented their work and how they are contributing to the United Nation's (UN) sustainable development goals. The consortium NFDI4cat is working on exchanging and sharing data in the chemical process chain (where catalysis plays a role). The approach involves finding a common language in the community and training.

[Watch the full session](#)

Main takeaways

- Infrastructures must be linked to EOSC for success (horizontally as well as vertically). RIs must be incorporated properly into the EOSC architecture because they are those delivering the data.
- EOSC is and will be an evolving system. EOSC must focus on the researchers and the researchers will be the ones determining the focus of the services. The EOSC Core equates to what the researcher needs.
- It is good to have lighthouse communities that show how data sharing is an indispensable part of their research. For example, social sciences have lots of experience and this can be passed on to other research domains. The aim is to produce solutions beyond the scope of NFDI.
- The session demonstrated the importance of different needs for different disciplines and showed that EOSC and national initiatives are built for bigger purposes for example the sustainable development goals of the UN.

Future steps

- For EOSC to reach its full potential the data infrastructures need to be federated and made accessible to users in a seamless way.
- Until now EOSC has not played a large role in national strategies but now national policies are ready to be aligned with EOSC.
- The German NFDI is an example of federation of data infrastructures in Germany that can support the future development of EOSC.

²⁶ <https://www.nfdi.de/en-gb>

²⁷ <https://op.europa.eu/en/publication-detail/-/publication/cbb40bf3-f6fb-11ea-991b-01aa75ed71a1/language-en/format-PDF/source-156485650>



**Tuesday,
20 October 2020**
*EOSC supporting
the COVID-19 crisis
management & beyond*

13:30-14:30 Second EOSC clinic:
Ask me anything session

[Watch the full session](#)



EOSC clinic

The EOSC clinic: Ask me anything sessions were an essential part of the EOSC Symposium program and enabled participants to lively interact with the members of the EOSC EB. On the first day, most questions focused on high-level EOSC topics, the SRIA version 0.8 and the EOSC Association.

Main discussion points

What can EOSC and the EOSC Association do for better cohesion among EU countries to get more legitimacy among countries?

- Data, research results, infrastructures, countries, etc. need to be gradually linked. Data competence centres may play a crucial role in this. Learning from each other, recognising each other's competences and aligning strategies and (to some degree) objectives might help to increase cohesion between the EOSC Association and EU countries.

The lack of rewards for researchers is one of the issues to tackle in order to promote the reusability of data & research outputs. How can/will the EOSC Association contribute to this?

- "Science quality" and "excellence" are still tightly linked to "highly cited publications", which is very unfortunate in the view of many scientific communities. A strong signal to change this culture must be sent. That change needs to find its roots on the institutional level. All who signed the declaration should also be aware of the fact that part of the declaration addresses rewards and recognition systems. Re-think reward mechanisms (also on institutional levels) and find other means to reward researchers by emphasizing publications a bit less, while focusing more on e.g. science communication and public outreach, greater benefits for society, etc.

How can EOSC support GDPR "Other Third country" collaboration on sensitive data?

- The GDPR deals more with personal data. However, it can be said that within collaborations data needs to be FAIR and, if possible, open. When it is FAIR, it'll also be findable, accessible, interoperable and reusable for "other third countries". The same goes for the openness of data: when data is open, it is open.

How can we guarantee the long-term access to data considering research infrastructures life cycle (e.g. after decommissioning)?

- This question highlighted the crucial role of domain/ discipline-specific repositories as well as the need to distinguish between a) who owns the data and b) who is responsible for the data. Responsibilities must be very well defined; questions such as "Who decides whether data is still relevant?", "Who makes sure they are accessible in the long-term?" must be answered. Domain/discipline-specific repositories will (need to) have a say when addressing this issue.

How do you foresee the effort by scientists to open data which will remain open, without sustainable and open services?

- There are objections to universal openness. Opening data takes time, it is difficult and issues such as the sensitivity of data need to be considered. Thus, not all of the data will or should be open. In order to determine what data should be open and/or how to open specific data, it makes sense to involve data stewards and other experts to discuss issues at hand on institutional levels first.



Tuesday, 20 October 2020

EOSC supporting the COVID-19 crisis management & beyond

14:45-15:30 EOSC Secretariat co-creation main outputs and contributions to EOSC



Chair **Bert Meerman**
GOFAIR & EOSCsecretariat.eu

Watch the full session

Main Outputs

With a focus on the most relevant contributions to the EOSC, four co-creation budget-funded projects were presented and discussed within the afternoon session EOSC Secretariat co-creation main outputs and contribution to EOSC. **Bert Meerman**, GO FAIR & EOSCsecretariat.eu, highlighted the definition of FAIR and its potential impact on research,

The main takeaways of the session are summarized below:

1: FAIR forever 2.0 by **William Kilbride** and **Amy Currie**, Digital Preservation Coalition

- The Digital Preservation Coalition (DPC) identified the development, the monitoring and the maintaining of EOSC's capability in the preservation of digital materials as an urgent need. Thus, their work focused on the assessment of current strengths, weaknesses, opportunities and threats to the digital preservation of research data.
- As an interim result of their work, the DPC noticed that explicit visions for EOSC that relate to digital preservation (such as roles, responsibilities, accountabilities) are opaque. This, in return, is a risk to data, to reputation and to sustainability. Counteracting measures may include three stages: First, minimally viable functions including workflows and at least a bit of preservation must be established. Second, preservation functions should be built. Third, preservation functions need to be elaborated in order to establish co-creative metadata and community ownership models (= three stages of a digital preservation roadmap).

2: Making Dark data fair by **Jack Casey**, TU Delft

- Dark data is usually taken to be data which is, for whatever reason, non-reusable by researchers. Poor metadata, non-standard formatting or forgetting about the data are common reasons for data being non-reusable. For High Performance Computing facilities (HPCs) dark data often constitutes a waste of public resources as it limits scientific progress. There is, however, a gap in the FAIR principles, which is data being FAIR whilst being aptly described as dark. This class of data was then called "lost data". The reason for that is that fact, that data can be forgotten about. Unfortunately, there is evidence that a huge data volume becomes dark that way.

3: Flexible Semantic Mapping Framework by **Daan Broeder**, CLARIN ERIC

- SEMAF (Semantic Mapping Framework) is a collaboration between the Group European Data Experts (GEDE) and CLARIN ERIC. The objective is and was to study and propose a framework that supports pragmatic semantic mappings.
- The first phase of the project consisted of a discussion of the mission statement, requirements and goal refinement. Stakeholders and experts were identified. Relevant reports and sources include FAIRsFAIR, the FAIR semantics recommendations, and the EOSC interoperability framework report. The second phase saw interviews with community experts on requirements and existing approaches as well as the inventarising of existing infrastructure and semantic artefacts so that they could be integrated in an over-arching SEMAF framework.

4: Co-development of HARDOCS: An Open Source Tool that makes FAIR data easy to adopt in hardware and product design by **Jose Carlos Urra Llanusa**, TU Delft.

- TU Delft is working on a solution to prevent data from being forgotten/getting dark even though it is FAIR. Thus, they are developing a suitable augmentation to the principles, which they call FAIR+. Currently, their main suggestion is to augment the role of scientific data officers (SDO) such as to preclude the possibility of data being lost in this manner and formalize the role of institutional memory.
- Metadata and FAIR principles should be an evident and daily need for practitioners. Against this background, metadata should be easy to generate, edit and publish.
- The need to address the easier editing of metadata is evident. It seems, however, that certain criteria support the continuation of such work, which are dedicated task forces, open source and funding support. In addition, the issue at hand is not just some sort of hardware-domain--related problem - it is about trans-disciplinarity.

²⁸ <https://doi.org/10.5281/zenodo.3707985>

²⁹ <https://www.eoscsecretariat.eu/sites/default/files/eosc-interoperability-framework-v1.0.pdf>



Wednesday, 21 October 2020
The implementation challenges of EOSC



Wednesday, 21 October 2020

The implementation challenges of EOSC

9:30-10:30 Designing EOSC



Chair

Sarah Jones
EOSC FAIR WG Chair & Individual Expert

Introduction

The session, chaired by **Sarah Jones**, Individual expert and Chair of the EOSC FAIR Working Group, focused on three presentations:

- Introducing the Minimal Viable EOSC - **Rupert Lueck**, EOSC Sustainability WG Co-Chair, & EMBL giving an overview of the main EOSC components (EOSC Core & Exchange);
- EOSC Architecture update - **Jean-François Abramatic**, EOSC Architecture WG Chair & INRIA summarising the main outcomes of the work of the Architecture WG;
- EOSC Interoperability Framework - **Oscar Corcho**, EOSC FAIR WG Member & Universidad Politécnica de Madrid discussing the interoperability layers of EOSC.

[Watch the full session](#)

Main takeaways

- The concept of MVE is described as the bare minimum development necessary to establish an initial implementation of EOSC.
- Expected main added value of the MVE is connecting disciplinary research & data infrastructures and enabling interdisciplinary research.
- There has been limited effort on research software, 9 existing infrastructures engaged, and 4 pillars identified for research software architecture: Archive, References, Describe, Credit.
- Challenges of strengthening interactions between the 4 pillars, metadata standards and the use of persistent identifiers need to be tackled.
- Components of minimal interoperability framework were identified. It consists of 4 layers: Technical, Semantic, organizational, and legal; inclusion of software and other digital objects is important, in addition to data.

Future steps

- The critical first step to be taken is the federation of research data infrastructures via clusters and regional projects.
- Establishing a common understanding of the benefits & objectives of EOSC among stakeholders is key.
- Strengthening the interaction between the different layers of the research software infrastructure.
- A repository of licences needs to be built.



Wednesday, 21 October 2020

The implementation challenges of EOSC

11:00-12:00 Architecture & FAIR priorities



Chair

Jean-François Abramatic
EOSC Architecture WG Chair & INRIA

Introduction

Chaired by **Jean-François Abramatic**, EOSC Architecture WG Chair & INRIA, the session included three presentations on:

FAIR practice activities, PID, and AAI architecture documents.

- FAIR practices - **Marta Teperak**, TU Delft, and **Rob Hooff**, ELIXIR & Dutch Techcentre for Life Sciences
- PID Architecture - **Raphael Ritz**, MPG - Max Planck Computing and Data Facility (MPCDF)
- AAI - **Klaas Wierenga**, GÉANT

Watch the full session

Main takeaways

- The FAIR practice task force addressed the questions of how different communities practice FAIR and what technical and social challenges are faced.
- Discussion on the six recommendations for implementation of FAIR practice³⁰, mainly focusing on funding and incentives.
- The PID architecture for EOSC was opened for consultation. Gaps and priorities have been identified. The PID ecosystem presents challenges of interoperability between PID systems and hidden complexity of metadata.
- The AAI Task Force aimed to deliver a consistent AAI architecture for EOSC. Important elements of AAI for EOSC are: Principles & requirements, architecture, Rules of Participation (RoP), and catalogues of good examples.
- The EOSC AAI will be a distributed system, open to anyone that plays by the rules and it is built on the outcomes of the AARC initiative.

Future steps

- Harmonization work is required on the meaning of AAI attributes.
- Multi-infrastructure workflows and scalability issues for AAI need to be addressed.
- Catalogues of good examples as an element of AAI for EOSC must be planned.

³⁰ <https://op.europa.eu/en/publication-detail/-/publication/4630fa57-1348-11eb-9a54-01aa75ed71a1/language-en>



Wednesday, 21 October 2020

The implementation challenges of EOSC

12:30-13:30 Widening EOSC to the public and private sectors



Chair **Rupert Lueck**
EOSC Sustainability WG Co-Chair & EMBL

Main takeaways

- The development of Compliance Framework that also provides technical and contractual tools is essential both for EOSC and GAIA-X to build the ecosystem.
- The development of data spaces is a very dedicated activity. GAIA-X has decided to not adopt only one architecture.
- FAIRification is seen as a unique selling point for EOSC also from the industry perspective and development of dataspaces is a dedicated activity.
- Industry and professional/private data collectors such as clinicians should be seen as an additional stakeholder.
- Incentives ensure FAIRness and high quality of data of private and public sectors where a level of quality and standards of data are required.
- Collaboration between different groups ensures reciprocity and is an important step towards common standards.
- Implementation of interoperability should be done on the practical level leveraging on the existing initiatives in countries aimed at improving the availability of data.
- Wide collaboration within marketplaces and infrastructures are indeed required and all parties should follow the same rules in order to keep open data trackable and manageable and thus useful to all.

Future steps

- A good collaboration and exchange of information must be established between EOSC and other initiatives, such as GAIA-X, the European Joint Programme on Rare Diseases or the the upcoming EIC marketplace.
- FAIRness of data should apply both in private and public sectors by ensuring simultaneous security and trustworthiness.
- Smart services could access private and public databases so that service providers could build their business models on them.
- Interoperability is required as a tool for supporting EOSC readiness, and therefore the local systems should be reviewed and it should be considered how each of them could be integrated.
- Domain knowledge is critical and needs to be preserved.

Introduction

The session Widening EOSC to the public and private sectors chaired by **Rupert Lueck** (EOSC Sustainability WG Co-Chair, EMBL) highlighted the future possibilities for EOSC to engage a wider user base and promote its use beyond FAIR research data. The session started with a presentation from **Andreas Weiss** (Head of Digital Business Models, eco Association of the Internet Industry Director, EuroCloud Germany) on GAIA-X³¹ and its objectives of increasing transparency and attractiveness of digital services, of strengthening the digital sovereignty of business, science, government and society and of reducing private and business consumers' dependency of single providers. The goal of GAIA-X is to activate and represent the user side in order to develop GAIA-X, maintain FAIRness in data through a secure and trustworthy collaboration. The approach adopted by GAIA-X relies on use cases from different domains that face the same interoperability challenge.

The presentation was followed by a discussion involving the panellists **Liina Munari** (Deputy Head of Unit eInfrastructure and Science Cloud, DG CNECT, European Commission), **Rod Franklin** (Academic Director of Executive Education and Professor of Logistics Practice at the Kuehne Logistics University), **Michela Magas** (Chair at Industry Commons Foundation) and **Daria Julkowska** (Scientific Coordinator of the European Joint Programme on Rare Diseases). The discussion highlighted the different opportunities for collaboration between EOSC and the represented initiatives. **Michela Magas** gave insights on the results of the "Expanding EOSC" study which was conducted on behalf of the Sustainability Working Group and underlined the importance of use cases for the development of the EOSC ecosystem. Daria Julkowska emphasized the importance of collaboration within the rare diseases research community but between research communities to bring together different resources, both as an immediate step and as a long-term perspective to derive common standards. **Liina Munari** talked about the perspective of the EC and the need to make data "as open as possible as closed as necessary", so finding the right balance when promoting Open Science and open data: How to measure? How to broker access? How to govern? **Rod Franklin** presented the differences between the academic and industry point of view towards Open Science. While in academics, the concept experiences more and more acceptance, open and FAIR data comes with many questions e.g. regarding competitiveness and lack of resources to implement (as it is often the case with SMEs) but also regarding the actual meaning of Open Science.

[Watch the full session](#)

³¹<https://www.data-infrastructure.eu/GAIAX/Navigation/EN/Home/home.html>



Wednesday, 21 October 2020

The implementation challenges of EOSC

13:30-14:30 Third EOSC clinic:
Ask me anything session

[Watch the full session](#)



EOSC clinic

The EOSC clinic: Ask me anything sessions were an essential part of the EOSC Symposium program and enabled participants to lively interact with the members of the EOSC EB. On the third day, three main topics emerged from the questions posted in the chat and on sli.do: GAIA-X, PID and AAI.

Main discussion points

- Half of GAIA-X's use cases were old-fashioned digital transformation use cases, which do not suffer from solutions in technical level but rather willingness of the stakeholder to move forward.
- GAIA-X is also working on demonstrators to showcase how GAIA-X can work; especially the interaction between infrastructures and the data space layer and to understand how data spaces can be built up. For the time being, the discussions within the GAIA-X are more in the B-2-B level. Nevertheless, GAIA-X is looking forward to other actors joining. For this reason, multi stakeholder exchange is needed e.g. to understand the needs of the science community.
- It was noted the time is right (end of 2020 – early 2021) to build up a shared understanding how GAIA-X and EOSC will go forward as EOSC is going through a transition period.
- **Philippe Segers** (PRACE) was asked to organize a workshop with the help of e.g. Rupert Lueck to bring the EOSC community in a dialogue with the PRACE and HPC communities.



Wednesday, 21 October 2020

The implementation challenges of EOSC

14:45-15:30 EOSC Secretariat co-creation main outputs and contributions to EOSC



Chair

Jos van Wezel
KIT & EOSCsecretariat.eu

Watch the full session

Main Outputs

With a focus on the most relevant contributions to the EOSC, five co-creation budget-funded projects were presented and discussed within the afternoon session EOSC Secretariat co-creation main outputs and contribution to EOSC. **Jos van Wezel** from KIT opened the session and moved on to introducing the afore-mentioned projects' presenters:

1: Alignment of EOSC Strategic Implementation Plan with US NIH Strategic Plan for Data Science - **Carlos Luis Parra-Calderón**, Andalusian Health Service - Institute of Biomedicine of Seville & Virgen del Rocío, University Hospital.

- The objective of this study is to identify similarities and differences between two important Data Science strategies, in this case between the EOSC strategy and US NIH Data Science strategy. This alignment was related to the 5 EOSC WGs with particular relevance to the scope of the FAIR principles. The work was based on public documents from both projects/institutions and is still ongoing (incorporating the newest versions of the EOSC documents). It is scheduled to be completed by 30 November 2020.

2: Decentralized Assessment of FAIR data sets - **Aliaksei Kulik**, DEIP.

- The purpose of this activity is to implement a use-case to assess FAIRfield data sets. It is understood that a key aspect of Open Science is making research data interoperable and as open as possible so that the data can be easily discovered and exploited. One of the core elements is to have good incentives and rewards, as well as some good metrics and indicators.
- They are currently speaking to various communities to understand their needs and processes; surveying research communities in order to discover what is the process and criteria they currently use to assess data sets' quality and reliability, and are still looking for more partners to join the platform pilot (feel free to reach out).

3: Boosting EOSC readiness: creating a scalable model for capacity building in RDM - **Nadica Miljkovic**, University of Belgrade.

- The purpose of this activity is to create a scalable model for the South Slavic-speaking non-EU Western Balkans countries and to increase readiness in order to use EOSC resources & services.
- This project aims to build a model for local capacity building RDM by creating a scalable technical solution of a database which will cover researchers and librarians. The final aim is to compensate for the current delay in adopting open research data and FAIR policies in non-EU Western Balkan.

4: Research Libraries, Researchers and the EOSC - **Tiberius Ignat**, Scientific Knowledge Services.

- This project has the ambition to inform the EOSC WGs about the role of Libraries in EOSC, what libraries expect EOSC to be, and how to support the traditional and new services in EOSC. This will be done through 5 workshops and 6 reports.
- Focus of the discussion: What is the value of EOSC for researchers and research libraries based on the goals and the work of EOSC WGs? What kind of input is needed from these stakeholders? How can these stakeholder groups be involved in the activities of EOSC WGs? And what do they need in order to get involved? What sort of feedback mechanism could be built to continuously inform EOSC?

5: DDI Cross Domain Integration: Applications for EOSC - **Arofan Gregory**, DDI-CDI / CODATA.

- EOSC faces challenges presented by its scale: the variety of data across scientific disciplines is broad, with different communities using different structures and formats. Traditional approaches to data integration involve labour-intensive point-to-point mapping, requiring a thorough knowledge of disparate structures which is often not available.
- The need for cross-domain data sharing is growing. The project will perform a structured consultation with European and international fora (such as EOSC WGs, 5Bs, ERICs, ESFRI Clusters, FAIRsFAIR; GO FAIR, RDA, CODATA) to analyse the innovative capabilities of the new domain-agnostic Data Documentation Initiative-Cross Domain Integration (DDI-CDI) specification (in review) and apply them to needed search and data integration functions within EOSC. The outputs of the project will be a refined profile of DDI-CDI to enable efficient reuse and discovery of data across disciplines, guidelines for the implementation of DDI-CDI in EOSC infrastructures and data sources, and feedback to the DDI-CDI committee on any identified gaps.
- Main outputs will be recommendations on how these metadata in spectrum could be applied within EOSC context and how to enable scalability in future.



Thursday, 22 October 2020
Boundary conditions for EO SC



**Thursday,
22 October 2020**
*Boundary conditions
for EOSC*

9:15-10:00 EOSC Rules of Participation



Chair

Juan Bicarregui
EOSC Rules of Participation WG Chair,
STFC & RDA

Introduction

The session was chaired by **Juan Bicarregui**, Chair of the EOSC Rules of Participation Working Group, and opened with a presentation on the development process behind the Rules of Participation (RoP) since instantiation of the WG including a recap of the history and the aims of the RoP.

The RoP define the accountability of transactions within the EOSC for all participants. To deal with EOSC there needs to be some guarantee of the quality of the data and services. The assessment of quality needs to be open and transparent. The rules themselves are very brief (each of the 8 rules has one line) and abstract and therefore are expected to endure. They are suitable for all onboarding processes. They must apply to all communities and resources and it is assumed that the Association will take control of the rules and manage their evolution.

[Watch the full session](#)

Main takeaways

- The assumption in the rules is that there is no need to repeat things that are already in the EU regulation (i.e. GDPR).
- Rules 1, 2 and 3 deal with "Openness" which is key in EOSC but this does not mean free. The process of rule management should be open as well.
- Rules 4, 6 and 7 deal with "Behaviour" and include sanctions.
- Rules 5 and 8 deal with the "Community" aspects. The basic idea is that the community can improve the quality of EOSC by contributing back into EOSC.

Future steps

- The RoP has released a new document: RoP V0.5³². Version 1.0 will be published in Dec 2020 and will include the feedback e.g. from the session during the Symposium. Some remarks will lead to a revisitation of the rules and a discussion in the WG.
- Further alignment of RoP terminology will be done with the support of the team working on the EOSC glossary.

³² https://www.eoscsecretariat.eu/sites/default/files/draft_eosc_rop_version_0.5_20-10-2020.pdf



Thursday, 22 October 2020 *Boundary conditions for EOSC*

10:15-11:00 EOSC Business Models



Chair

Lidia Borrell-Damià
EOSC Sustainability WG Co-Chair
& Science Europee

Introduction

This session was chaired and introduced by **Lidia Borrell-Damià**, Science Europe and EOSC Sustainability WG Co-Chair.

The session included two presentations by the consulting firms, namely, AccrossLimits and Boundaryless, contracted by the Sustainability WG since April 2020 to support their work on business models. The experts talked about the current status of their work on identifying the operational cost of the EOSC core and the business model design for EOSC as a platform, respectively.

[Watch the full session](#)

Main takeaways

- Regarding the operational cost of EOSC, the following preliminary observations are presented.
 - The scope of EOSC-Core is not fixed, risking underestimation of costs.
 - To simplify the work of the legal entity, a need to retain service aggregators is identified.
 - Currently, incentives to participate in a shared research market are low.
 - Some of the cost-related problems and other problems need to be solved by entities outside of EOSC, such as national policy makers. Lobbying is required to address these problems.
 - A bottom-up approach of financing EOSC is very hard, as most of the services run with very little overhead. Funding is needed to cover the initial cost/investment of establishing EOSC.
- While thinking of a business model for EOSC, the platform is considered as a whole and the EOSC association serves as a platform shaper.
- EOSC does not aim to create services from scratch, but supports and amplifies existing service providers, serves as a governance model, as well as a data driven policy making entity.
- Business models need to be attached to each component of the MVE.
- Two business models need to co-exist: a transaction engine (based on charging single access) and a learning engine, which offers a growth space. It is assumed the learning engine business model will prevail in the long term.

Future steps

- Funding mechanisms to cover the initial investment as well as the sustainability of EOSC need to be identified.
- Pricing structures for services need to be put in place.
- The mapping of the services described in the 'Iron lady' will continue.
- Interviews with marketplace representatives are planned to identify cost items.



Thursday, 22 October 2020 *Boundary conditions for EOSC*

11:15-12:00 Skills and Training



Chair

Natalia Manola

EOSC Skills & Training WG Chair
& OpenAIRE

Introduction

EOSC is a strong digital research data ecosystem with data and software at its core. Skills and training are a key factor for EOSC to succeed. Thus, the objective of the Skills & Training EOSC WG is to provide a framework for a sustainable training infrastructure within the EOSC ecosystem.

That objective is driven by several principles and visions: the promotion of transparency and recognition of skills and qualifications, the fostering of an equitable and balanced digital research labour market, the strengthening of the research-industry-public sector, the promotion of learning, experimenting and growth (cultivate a digital open science culture), resilience of digital skills, and the embedding of the human factor in the design of future digital skills systems.

EOSC Skills & Training WG Chair **Natalia Manola** and Co-chair **Vinciane Gaillard** offered an overview on two of the four Task Forces that operate inside the WG: the EOSC minimal skillset (that will identify and prioritize OS and digital skills for EOSC) and EOSC in national strategies for digital skills (working on how to align their findings with national strategies).

[Watch the full session](#)

Main takeaways

- Examples of skills that are relevant for the EOSC: Information and data literacy, communication and collaboration, digital content creation, safety, problem solving.
- Skills and training must be adjustable to local context. Specific roles need to be defined within the whole EOSC landscape. The identifying and defining of roles also matter because depending on these professional roles, the exact skills they need to acquire and the training they need to undergo will vary (e.g. different set of skills for researchers, service providers, policy makers. A diagram was developed to increase the visibility of such roles).
- The EOSC needs to be seen in a wider context - we are operating in an already existing ecosystem of initiatives of which EOSC is a part.
- A study on national strategies for digital skills was funded to provide an overview of the national Digital Skills initiatives in Europe. It aimed at identifying gaps and overlaps of existing national initiatives in comparison with skills that are envisioned as EOSC Skills. Other objectives were to analyse and provide insights on how to best position EOSC Skills and Training within national initiatives and develop recommendations for policy makers to include in national strategies for Digital Skills and up-skilling.

Future steps

- Developing the next generation of open science professionals career paths, digital skills profiles, and recognition.
- Coordinating training and aligning curricula for students and researchers (Align curricula and training with demand, discipline specificities, rewarding early career researchers for open science practices...).
- Building a trusted and long-lasting knowledge hub of learning materials and tooling (quality assurance framework for learning materials, common framework for learning pathways, development of an EOSC Knowledge/Education Hub, adoption of open learning environments, innovative ways of learning...).
- Developing an EOSC leadership programme to foster the right policy environment for skills and training.



Thursday, 22 October 2020 *Boundary conditions for EOSC*

12:30-13:30 An equitable EOSC: EOSC challenges & opportunities in South-Eastern and Eastern Europe



Chair

Cathrin Stöver
EOSC Executive Board Co-chair & GÉANT

Introduction

The session, chaired by EOSC Executive Board co-chair **Cathrin Stöver** sought to gain perspectives on moving towards an equitable EOSC - with a specific focus on challenges and opportunities in South Eastern and Eastern Europe. Panellists represented views from Estonia, Turkey, and South East Europe. All agreed that there should be longer term support for regional initiatives to stimulate and ensure EOSC participation in all countries across Europe, in order to ensure that the benefits and opportunities of EOSC are available to all.

It was noted that having strong national and regional data centres and service providers can be a big societal driver for regions, in particular South East Europe, helping to stop the brain drain and close the digital divide. Participants agreed that there was a strong need to use knowledge sharing as a way of increasing national maturity levels to support cross disciplinary working. The biggest policy challenges expected at the national level are the ones regarding the National Open Science initiatives. In addition to that, at the European level, a clearer role of the NOSCs in the EOSC Association was sought. Finally, it was noted that the current open model of membership, as well as the proposed flat fees, seem to put smaller countries and institutions in a position to opt out.

[Watch the full session](#)

Main takeaways

- Sustainable national and regional initiatives must continue to underpin, enable scalability, and support EOSC in order for it to be a success.
- There is a strong need to use knowledge sharing as a way of increasing national maturity levels to support cross disciplinary working.
- The current proposed open model of membership, as well as the proposed flat fees, seem to put smaller countries and institutions in a position to opt out i.e. Membership model of EOSC Association fees is problematic for the small countries and institutions. This a policy challenge for South East Europe.
- Even when national policy making is co-ordinated, the main issues are in communicating, adopting, and then implementing these national open science policies.

Future steps

- It is important to work regionally via EC funded initiatives to build a strong service oriented EOSC and enable scalability.
- Strong national public infrastructures are also important and should continue.
- Making EOSC more accessible to smaller countries, more levelled, and unified between the members.
- Strong national and regional data centres. Public infrastructures are very important for the future of EOSC. Even though speaking of clouds usually means centralization of resources at the big providers, having strong national and regional data centres and service providers can be a big societal driver for the SEE region, stopping the brain drain and closing the digital divide.
- EOSC Association to consider how fees should be charged for less developed regions of Europe to ensure equity of access and participation.



Thursday, 22 October 2020 *Boundary conditions for EOSC*

13:30-14:30 Fourth EOSC clinic:
Ask me anything session

[Watch the full session](#)



EOSC clinic

The EOSC Clinic session brought together the discussions based on the sessions of the day. The topics of the Clinic session related to the work of various working groups but specially to Rules of Participation, Sustainability, and Skills and Training. The questions discussed business and learning models, RoP targets and criteria, EOSC participation, as well as the role of Skills and Training. It was highlighted that industry is very advanced, but EOSC is equally advanced.

The session ended with a warm thank you from the Executive Board Co-Chair **Cathrin Stöver** to all parties who participated in the event for the good discussions and also to the session Chairs, speakers, and EOSCsecretariat.eu consortium who organised the Symposium.

Main discussion points

- Any legal entity should be able to join EOSC.
- Users of EOSC do not need to be members of the Association.
- It would be optimal to have competition among research providers in the marketplace to share wider resources.
- Learning model can coexist where learning engine and core are sustained by EC.
- Librarians are a key target for EOSC.
- A homogeneous accounting system would be beneficial.
- EOSC's interest is to amplify business models.
- EOSC aligns and coordinates the concerned local efforts to onboard services in EOSC but does not act as a training provider since it can be seen only as a facilitator. Core training will be expected though.
- The aim is to make boundaries more flexible and Data Stewards closer to researchers.
- Granularity of research managers will be discussed in the Skills and Training WG but also work is in progress concerning research management.
- EOSC could contribute to the AAI skillset to ensure that data is made FAIR. It was recommended to focus also on how software is being produced.
- It was recommended that awareness of EOSC should be raised further.



Thursday,
22 October 2020
*Boundary conditions
for EOSC*

14:45-15:30 EOSC Secretariat co-creation
main outputs and contributions
to EOSC



Chair

Nicholas Ferguson
Trust-IT Services & EOSCsecretariat.eu

Watch the full session

Main discussion points


The EOSC Symposium has shown that the activities contributed by the various organisations have played an important part. The last session of the EOSC Governance Symposium, chaired by **Nicholas Ferguson** from Trust-IT Services and EOSCsecretariat.eu, presented the following five co-creation activities:

- 1: Visions, needs and requirements for (future) research environments - **Katharina Flicker**, TU Wien.
 - Early messaging around EOSC that was initially communicated (in early 2018) was too abstract for the research community. This resulted in scepticism and in lack of understanding of potential benefits. This resulted in a disconnect between researchers active in EOSC and those who are not. The aim of this activity, with researchers and members of university networks as the main target group, has been to address these challenges by consultations, discussions, and workshops.
 - Science is and should remain a global effort. The world is changing and so should research requirements according to the researcher's needs. Many documents were produced; particularly the collection of services was given as recommended reading³³.
- 2: European overview of merit and incentive systems in relation to FAIR data creation - **Janne Pölonen**, Federation of Finnish Learned Societies.
 - The project consists in a review of data models, information systems, and assessment policies based on existing resources, an online survey targeted to Research Performing Organisations (RPOs) and Research Funding Organisations (RFOs), as well as 3-5 case studies of data models and information systems.
 - FAIR research data can be fully acknowledged in career assessment only if data and infrastructure supporting assessment is FAIR and R(esponsible). The overview and case studies highlight the good practices and key challenges for creating a European FAIR data environment for responsible career assessment. In addition to that a preliminary vision for data models and information systems for FAIR and responsible data about research and merits in Europe is outlined.
- 3: Vision and roadmap for rewards and incentives for research data in research career - **Henriikka Mustajoki**, Federation of Finnish Learned Society TSV.
 - Building on A2 it is divided in a bootcamp to create a vision for FAIR data in research assessment, a public consultation of the vision and a bootcamp to build a roadmap from the current state.
 - The outputs are a vision for responsible and sustainable use of FAIR data in research and researcher evaluation encouraging European researchers to create FAIR data and a roadmap post 2021 towards responsible and sustainable research merit system for European organisations encouraging European researchers to create FAIR data.
- 4: Terms4FAIRskills - **Peter McQuilton**, Oxford e-Research Centre.
 - The initiative is carried out to build a formalised terminology that describes the competencies, skills, and knowledge associated with making and keeping data FAIR. The result will be a terminology that will apply to a variety of use cases, including to assist with the creation and assessment of stewardship curricula, to facilitate the annotation, discovery, and evaluation of FAIR-enabling materials (e.g. training) and resources, and to enable the formalisation of job descriptions and CVs with recognised, structured competencies.
- 5: Building the EOSC Training Collaborative Approach - A workshop on Rules of Participation for Training - **Ingrid Dillo**, DANS.
 - A three-day workshop with 35 participants was building on the Community of Practice of training coordinators, initiated by DANS and hosted by OpenAIRE. Its findings were fed into the EOSC WGs on RoP and Skills and Training. The workshop had 2 main results: RoP for training and practical guidance for training service providers. A report can be found online³⁴.

³³ <https://www.eoscsecretariat.eu/eosc-liaison-platform/post/services-performing-cutting-edge-research-europe>

³⁴ <https://doi.org/10.5281/zenodo.3894370>

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