EOSC National Tripartite Event

Germany

24 November 2022

Event Report

Contents

Introduction

This report describes the first EOSC National Tripartite Event organised in Germany. The Tripartite Event was an online organised event by Germany's EOSC Mandated Organisation, the German National Research Data Infrastructure (NFDI)[1]. The event took place in the morning of the 24th of November and included different keynote speakers, a description of the consortia of NFDI and a panel discussion.

National Tripartite Events are essential to understand the current status and development of Open Science in EU member states and to identify problems in its implementation. The event brought together representatives from funders, policy makers and research institutions, the sections of NFDI and the three actors responsible for the governance of the EOSC Partnership: the European Commission, EOSC Association, and Steering Board (representing the EU Member States).

This report provides an overview of the event, a summary of presentations and discussions, key recommendations, and suggestions for next steps.

Event overview

The event was organised in three parts: The first part introduced several keynote speakers that talked about the importance and transition to Open Science and the connection between NFDI and EOSC. Keynotes included presentations of the director of NFDI, the Parliamentary State Secretary in the German Federal Ministry of Education and Research (BMBF), the European Commission, the EOSC Association, the German Council for Scientific Information Infrastructures (RfII), and the German Research Foundation (DFG). The key notes were followed by an introduction of the four sections of NFDI, namely Common Infrastructures; Ethical, Legal and Social Aspects; (Meta)data, Terminologies, Provenience; and Training & Education. The National Tripartite Event ended with a panel discussion. The panel discussion was moderated by Jan-Martin Wiarda, journalist for science and education. Panel members were Roland Bertelmann (Head of Helmholtz Open Science Office), Ute Gunsenheimer (EOSC Association Secretary General), Andrea Herdegen (BMBF and EOSC Steering-Board), Raphael Ritz (Head of Data Division at the Max-Planck Computing and Data Facility) and York Sure-Vetter (Director NFDI) and included topics like the importance of EOSC and NFDI, their underlying relationship and collaboration and the importance of governance.

Keynote presentations

NFDI

Director of NFDI York Sure-Vetter officially welcomed all participants to the event as organiser and gave a short introduction on NFDI. NFDI was founded to coordinate the activities for establishing a national research data infrastructure by connecting communities. He emphasized that already valuable connections have been formed between EOSC and NFDI and this event is meant to build on these connections.

Ministry for Research Transfer and Spin-offs

Mario Brandenburg, Parliamentary State Secretary in the German Federal Ministry of Education and Research, re-emphasised the importance of deepening the connection between science and policy makers and thanked the organisers for the Tripartite event.

European Commission

Anna Panagopoulou, Director of 'European Research Area & Innovation' at the Research and

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[1] https://www.nfdi.de/?lang=en

Innovation Directorate General of the European, talked about the transition that science is currently undergoing, its effects on all of us, and the shared responsibility this entails. Most important is the change to a culture of "openness" that is now greater than ever, and that this change, to which the success of EOSC is undoubtedly linked, is only possible with collaboration between institutional, national and European institutions. National structures like NFDI are of great importance to this development.

EOSC-A

Karel Luyben, president of the EOSC Association, gave a talk to describe the vision for EOSC: what does it really mean for it to become "a web of FAIR data, with FAIR datasets that is accessible and reusable for all"? Using his own research experience in biological sciences, Mr. Luyben vividly portrayed the challenges faced by EOSC, which are technical as well as social. The EOSC Partnership is putting in place the means to tackle these challenges. To do this successfully, cooperation is needed between the European Commission, the EOSC Association as current main driver of the Partnership, and the EU Member States. National events where all three are represented are therefore essential to ensure that all noses are pointed in the same direction. Although there is still much to be achieved, to realise Mr. Luyben's dream that 50% of relevant research data *worldwide* is FAIR by 2040, EOSC stakeholders must seize the current momentum to make significant progress, seeking collaboration with other initiatives in Europe and globally.

German Council for Scientific Information Infrastructures

Lars Bernard from the German Council for Scientific Information Infrastructures[2] introduced the Council as a think tank with a holistic perspective to science that tries to trigger its self-organisation. Their most recent report describes that a joint initiative of all consortia, like the NFDI, can help establish common view on how Open Science is advancing in the EU by comparing policies, strategies, standards and services. Their findings on the lack of long-term planning for funding of infrastructures, and the loose links towards industry-led initiatives (e.g. Gaia-X), indicate in his view the relevance of their most important recommendation to establish closer links between the numerous initiatives. Basic services and service provision contracts are a first step in this direction. Mr. Bernard also observed that while NFDI follows a bottom-up approach by developing domain-specific consortia, EOSC focuses on the expansion and wider use of FAIR data and related services in all scientific disciplines to enable multi- and interdisciplinary research, and aims at establishing a marketplace for both data and services to be exchanged. The connection between NFDI and EOSC will support the interlinking between commercial and non-commercial initiatives.

German Research Foundation (DFG)

Kathrin Winkler of the German Research Foundation[3] explained that the funding strategy in Germany should move simultaneously towards horizontal and vertical integration. Because of the complexity of Open Science that goes back to the diversity and heterogeneity of scientific activity, the development of science policy and funding strategies require institutional, national, European and global collaboration (i.e. along the vertical "axis") that focusses on research culture, as well as on the rules and information infrastructures for research data. DFG pursues the establishment of horizontal cross-connections between subject-specific data repositories and vertical coordination of the offer of services from local to regional, national, and EU structures. NFDI has to expand in a "targeted manner", and establish national and international partnerships.

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[2] https://rfii.de/en/the-council/

[3] https://www.dfg.de/en/

NFDI sections presentations

York Sure-Vetter (NFDI) introduced us to the presentation of the four sections of NFDI (infra, ELSA, metadata and edutrain), which share the core idea of bringing together people from different communities, share resources and explore funding opportunities.

Section Common Infrastructures[4] - NFDI

This section, introduced by Michael Diepenbroek from the University of Bremen, contributes strongly to Base4NFDI[5] to fulfill the need for a multi-cloud-based infrastructure that can provide services to all NFDI consortia. It currently spans 10 working groups that include 120 members and 80 institutions. Base4NFDI align their goals with those of EOSC and ERA on a European level, so that a good collaboration is already integrated within the new infrastructure. The benefits of establishing an overall architecture include shared security and interoperability. It also adds crosswalks with existing European infrastructures. For Mr. Diepenbroek, NFDI's user-driven approach is well complemented by support for the development of policies through EOSC. He expects that alignment with the services to be included in EOSC Core will give added value to the Base4NFDI infrastructure. This is already underway thanks to collaboration with the FAIRCORE4EOSC and FAIR-IMPACT projects.

Section Ethical, Legal and Social Aspects – NFDI

Ulrich Sax (Department of Medical Informatics, University of Göttingen), introduced us to ELSA (Ethical, Legal and Social Aspects)[6]. Here, they try to identify and prioritise ethical, legal and social aspects that affect the task areas of NFDI through connecting people, consortia and specialist communities in order to share experiences. An important focus of this section is to involve projects like FAIR-DS and Base4NFDI. With the goal of obtaining results early on, ELSA will create specific task forces to benefit from synergies between consortia and disciplines, and will pick up new communities through thematically focused workshops, like e.g. on anonymization of data. This way they share best practices, contacts, tools and methods within NFDI and beyond.

Section (Meta)data, Terminologies, Provenance[7] - NFDI

Brigitte Mathiak of GESIS described how this section deals with metadata, terminologies and provenance. Following a bottom-up approach that includes researchers from the start, they have created several use cases from communities and the services to be developed. Future goals and expectations are to standardise activities and to coordinate the exchange between communities, NFDI and beyond on semantic interoperability.

Section Training & Education – NFDI

Peter Pelz (TU Darmstadt) finally introduced Edutrain[8], which deals with training and education. Edutrain is strongly related to the data competence centers and therefore to NFDI. Through a bottom-up approach, they focus on technologies and data literacy early in career development, following their view that this area should be developed and driven by the needs of (future) researchers. To this end they have started the project DALIA: a user-driven knowledge graph of Data Literacy Alliance.

Panel discussion

The panel discussion was moderated by Jan-Martin Wiarda, journalist for Science and Education. Panel members were Roland Bertelmann (Head of Helmholtz Open Science Office), Ute Gunsenheimer (EOSC

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[4] https://www.nfdi.de/section-infra/

[5] https://base4nfdi.de/

[6] https://www.nfdi.de/section-elsa/

[7] https://www.nfdi.de/section-metadata/

[8] https://www.nfdi.de/section-edutrain/

Association Secretary General), Andrea Herdegen (BMBF and EOSC Steering-Board), Raphael Ritz (Head of Data Division at the Max-Planck Computing and Data Facility) and York Sure-Vetter (NFDI Director).

The panel discussed first the coexistence of both national and Europe-wide initiatives, i.e. NFDI and EOSC, which can only work if cooperation between them is established. For Ute Gunsenheimer, the commitment of most EU Member States to ERA Action 1 to enable Open Science overall, and through EOSC in particular, shows the importance this topic has achieved on a European and national level. To take this opportunity and make use of this time where the importance of this topic is felt on multiple levels it is necessary to work together as a community. This view was supported by Roland Bertelmann and Raphael Ritz. Andrea Herdegen pointed out that the endeavour of Open Science goes necessarily beyond borders, and that EOSC stands for a broader concept that focusses on greater integration and inspiration for the European research community. York Sure-Vetter added that Open Science does not stop at EU frontiers, and requires a global approach, which can only be done by ensuring trust on its benefits is reached at European level. The biggest challenges faced in this endeavour are technical interoperability, the lack of appropriate funding opportunities, cultural differences, and "connecting the dots" between them. EOSC must play a leading role in identifying and moving past roadblocks in different countries and disciplines.

After this, the panel discussed the different roles played by EOSC and NFDI. While both work on similar topics, they follow quite different approaches; this results in a mixture of competition and cooperation. There is a shared need for an appropriate technical infrastructure that enables the connection between the different levels (from local institutions to country-wide networks or research facilities), cross-border provision of services, and the deployment of researchers in different countries. Exploring together possible solutions has better chances to find the most efficient ones to remove the roadblocks ahead. This search of common solutions requires the standardisation and harmonisation of the shared infrastructures, but needs to avoid being too restrictive. It takes effort in research to cleverly decide on a shared strategy and open standards that can be spread within different communities. Here, the contrast between science and industry (which is mostly driven by the need of businesses to achieve some form of "market domination") is most evident. The bottom-up approach followed by NFDI helps us understand what researchers really need, but all initiatives, organisations and institutes must play their part in the overall picture. Ute Gunsenheimer stressed the importance of ownership and the delivery of communities and consortia on what they have promised. EOSC does not have a mandate to enforce this, but it is willing and able to help them advance towards this goal.

The panel concluded by discussing governance: Can it be made simpler as it is now? For EOSC-A, this is the hope for the future, but as a relatively new organisation in a fast-changing field, a strong governance is very important to monitor growth and identify emerging possibilities. The Horizon Europe work programs must consider previous results from funded projects and provide a roadmap on how to implement these experiences (output) in future projects. This strategy is supported by the tripartite collaboration.

Monitoring is not easy in the fast-changing field of Open Science, with multiple stakeholders setting up parallel actions because of the simultaneous emergence of infrastructures. Although they deal mostly with the same questions, infrastructures follow different approaches, with concerns on how to achieve long term sustainability. Governance can provide the much-needed overview of what has been developed, the identification of gaps and to reach sustainability. The fast development of parallel infrastructures is not a phenomenon that is reflected evenly within European countries, with richer countries that develop faster holding a responsibility towards other countries behind the curve. Here, EOSC can help narrow the gap between countries, for example through National Tripartite Events that provide a framework to enable the exchange between Member States. This heterogeneous

development is also felt within countries – also in Germany. NFDI's strategy for this is to bring different regions and communities to a similar development stage by co-creating services that can be used across regional boundaries, which requires the political involvement of leaders and followers. As an organisation present in all federal states, the Helmholtz Society is in a good position to fulfil its mission of supplying the research infrastructures for the communities, thus facilitating the establishment of new communities but also collaborating on the use of results and developments. For this it is important that data literacy within the communities grows in parallel to the creation of infrastructure. Working together as well as an underlying base of trust is needed for Open Science to advance in all communities.

Closing

In their closing statements, the panelists agreed on the need for everyone to get on board of Open Science, as shown by the importance of both NFDI and EOSC. The time to make the transition to Open Science is now and the scientific community will only get there through a collective effort. Ute Gunsenheimer expressed the importance continuing the current lines of work, including listening to the expert working groups and task forces dedicated to specific EOSC-related topics—here the work towards sustainable solutions must reach the communities for all to understand the opportunities, challenges, and risks. Andrea Herdegen's key take-away is a reinforced impression of commitment, and the notion that we should also look at reducing the complexity so more people can join. York Sure-Vetter concluded the discussion with the statement that it is important to get different actors at same the table, from researchers to funders, and from national to European stakeholders, so we understand how all can be linked to each other. We need to take the lessons of today back into our offices and do our homework.

Recommendations

Keynote presentations and panel discussion resulted in recommendations for different players and stakeholders on Open Science and FAIR principles.

For national Stakeholders

- Discussing the development of and transition to Open Science and the adoption of the FAIR principles should not only be done within consortia and local initiatives. It is important to get all players at one table, including institutions, research communities and consortia, policy makers and funders to really advance in the set goals for Open Science and FAIR principles.
- National Stakeholders with large networks, like the Helmholtz Open Science Office, can play an important role in helping regional and local communities connect to Open Science initiatives and implement FAIR practices. Different players within the country will thus benefit from developments made by other communities, and sharing of best practices through these networks can lead to future collaborations.
- Besides infrastructures and initiatives, collaboration with industry has been limited up to now. A strong Open Science community should combine industry with fundamental research, where stakeholders on both sides can contribute towards the transition from standard to Open Science.

For Institutions

- Joining a consortium connects institutions to relevant topics in Open Science and gives them the opportunity to be involved in their development. The bottom-up approach followed by these consortia give institutions space and a platform to translate the needs of their researchers and science communities to a national and international agenda. Through consortia, partners can profit from knowledge from other partners, and they also give them a

way to provide policymakers and funders with a realistic view of where the development in Open Science stands and where investments will lead to the best results.

- Institutions must get involved in the development of data literacy within their research communities and the training and education of their staff—this is essential to enable a successful transition to Open Science. Institutions should therefore connect researchers with the right training materials and infrastructures to develop these skills.

For EOSC and mandated organisation

- As EOSC Mandated Organisation, NFDI plays an essential role in the connection between European organisations like EOSC and local stakeholders and institutions and their needs. NFDI´s role in forming these multilevel collaborations is to reach into different research communities, connect their daily practices to Open Science and FAIR principles and, in collaboration with EOSC, translate and connect them to the European agenda and developments.
- The technical and social challenges on the way to Open Science requires a well-established collaboration between EOSC and the Mandated Organisation in the framework of the EOSC Partnership.
- Both EOSC and the Mandated Organisations complement each other through their different approaches to Open Science and the FAIRification of research. NFDI bottom-up approach must be connected to the development of infrastructures and services to meet the need of researchers and contribute to defining European policies through by European Commission.
- Besides complementing each other, EOSC and the Mandated Organisation must collaborate in monitoring and governing the development of Open Science on national and European levels. Governance is extremely important to provide an overview of what has been developed and to elucidate how to reach a sustainable future and to provide an environment where European countries can benefit from the development of other countries.

Other Issues |Overarching issues

- An important part for the successful implementation of Open Science and the FAIR principles is to strengthen the system-wide recognition and reward of adopting Open Science practices. This implies implementing supporting policies, recognition on local, national and international level, and the right reward system that recognizes Open Science practices.
- In the development of infrastructures and initiatives, long-term planning of funding to reach financial sustainability is often missing. This carries the risk of stagnating the development of infrastructures and new initiatives. Close relations between initiatives and infrastructures of related subjects (horizontal integration) and a connected network of local, national and international organisations and communities (vertical integration) are important to form a sustainable structure in terms of funding and development, while aligning results and developments out of other communities. This also goes for policies that strengthen the sustainability of Open Science initiatives and reward collaboration between different parties. A close collaboration between different stakeholder groups is essential to build a sustainable future where Open Science and FAIR principles are the new normal.

Acknowledgements

Event Programme

Content	Speakers/Panellists
Opening	York Sure-Vetter (NFDI-Director)
NFDI as Model for and Contribution to EOSC – the German Political Perspective (Keynote)	Mario Brandenburg (Parliamentary State Secretary, Federal Ministry of Education and Research, Germany)
EOSC as a Federated Infrastructure and a Tripartite Partnership (Keynote)	Anna Panagopoulou (Director European Research Area and Innovation, European Commission)
The EOSC Association (Keynote)	Karel Luyben (EOSC-Association President)
RfII – The German Council for Scientific Information Infrastructures (Impulse lecture)	Lars Bernard (Deputy Chair German Council for Scientific Information Infrastructures (RfII))
Funding Strategy in Germany: The Significance of Horizontal and Vertical Integration (Impulse lecture)	Kathrin Winkler (Deutsche Forschungsgemeinschaft (DFG, German Research Foundation))
NFDI Sections in the international context: Contributions and Expectations from Germany to EOSC	York Sure-Vetter (NFDI-Director) Michael Diepenbroek (Speaker section-infra) Ulrich Sax (Deputy Speaker section-ELSA) Brigitte Mathiak (Deputy Speaker section-metadata) Peter F. Pelz (Speaker section-edutrain)
Break	
Panel: ‚NFDI & EOSC – Why do we need both?'	**Moderation:** Jan-Martin Wiarda (Journalist for science and education) **Panellists:** Ute Gunsenheimer (EOSC-Association Secretary General) Raphael Ritz (Head of Data Division at the MaxPlanck Computing and Data Facility (MPCDF), NFDI consortium FAIRmat, head of RDA-DE, EOSC Task Force) Roland Bertelmann (Head of Helmholtz Open Science Office) Andrea Herdegen (BMBF/EOSC Steering-Board) York Sure-Vetter (NFDI-Director)
Questions from the audience	Moderation: Jan-Martin Wiarda (Journalist for science and education)
Closing	Jan-Martin Wiarda (Journalist for science and education)

Event Presenters and Panellists

Presenters Key Notes:

York Sure-Vetter - NFDI-Director

Mario Brandenburg - Parliamentary State Secretary, Federal Ministry of Education and Research, Germany

Anna Panagopoulou - Director European Research Area and Innovation, European Commission

Karel Luyben - EOSC-Association President

Lars Bernard - Deputy Chair German Council for Scientific Information Infrastructures (RfII)

Kathrin Winkler - Deutsche Forschungsgemeinschaft (DFG, German Research Foundation)

Presenters Sections NFDI:

Michael Diepenbroek - Speaker Speaker section-infra

Ulrich Sax - Deputy Speaker section-ELSA

Brigitte Mathiak - Deputy Speaker section-metadata

Peter F. Pelz - Speaker section-edutrain

Panelmembers:

Moderation:

Jan-Martin Wiarda - Journalist for science and education

Panellists:

Ute Gunsenheimer - EOSC-Association Secretary General

Raphael Ritz - Head of Data Division at the Max Planck Computing and Data Facility (MPCDF), NFDI Consortium FAIRmat, head of RDA-DE, EOSC Task Force

Roland Bertelmann - Head of Helmholtz Open Science Office

Andrea Herdegen – BMBF, EOSC Steering-Board

York Sure-Vetter - NFDI-Director