

# Building Bridges: Strengthening Reproducibility & Open Science Networks across Europe

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# 1. INTRODUCTION

TIER2 is a three-year international project funded by the European Union's Horizon Europe research and innovation programme and UKRI. Its aim is to boost knowledge on reproducibility, create tools, build and foster communities, as well as implement interventions and policies across different contexts to increase re-use and overall quality of research results. TIER2 aims to engage and address researchers across scientific fields, funders, and publishers with co-creation activities central to the project.

On 16 April 2024, TIER2 hosted an online networking event titled "Building Bridges: Strengthening Reproducibility & Open Science Networks across Europe". This gathering brought together 25 representatives of National Open Access Desks (NOADs) and Reproducibility Networks (RNs) from across Europe. The detailed meeting agenda is provided in the Appendix.

The meeting's objectives were to:

- Introduce the TIER2 project
- Enhance mutual understanding and awareness of the overlapping activities of NOADs and RNs, specifically in Open Science dissemination, community building, and training
- Foster coordination and resource sharing between NOADs and RNs

The event featured a mixture of informational short lightning talks and interactive breakout sessions, providing participants with the opportunity to identify synergies and potential collaborations, share their insights and ideas, and connect with others actively advocating for reproducible research and Open Science practices.

This report summarises the outcomes from the meeting overall as well as the small group sessions. Topics for discussion were submitted by meeting attendees at the registration stage. These topic suggestions were summarized into three broad themes:

- 1 Institutionalisation of Open Science
- 2 Community Building and Training
- 3 Reproducibility and Data Management

During the meeting, participants themselves were able to choose which discussion group they would like to join, selecting the theme they were most interested in. After participants voted, themes 1 and 2 were selected for closer discussion in small groups.

With this report, we aim to add to the broader discussion in the field of reproducibility and Open Science and to add knowledge to the next steps of the project; namely to facilitate community strengthening and growth.

## 2. THE PARTICIPATING NETWORKS

**National Open Access Desks (NOADs)** promote Open Access and Open Science across 34 EU+ member states and beyond. They are deeply familiar with the specific cultural, governance, and financing systems in their respective countries. NOADs provide support and solutions for policy implementations and are instrumental in aligning and transferring new ideas and practices for research or publishing. The NOADs are committed to ensuring that validated practices for data curation and stewardship are followed wherever research is produced.

**Reproducibility Networks (RNs)** are collaborative consortia with a cross-disciplinary mission to enhance the openness, trustworthiness, and transparency of scientific research. Recently, these peer-led networks have emerged globally, acting as national hubs for interdisciplinary collaborations among scientists, funders, and publishers. They also provide training opportunities and infrastructure to enhance stakeholder capacity. Varying in structure and governance, RNs typically include local nodes, distributed across the country, promoting Open Science, an elected steering body focusing on national strategies, and differing numbers of members. Despite variations, all RNs aim to improve the research ecosystem by supporting research integrity and quality while increasing trust in science.

## 3. LIGHTNING TALKS

During the lightning talks, RN representatives from UK, Germany, and Ukraine, along with NOAD representatives from Italy, Finland, and Slovakia, provided insights into their networks' organization and structure. They also showcased existing workflows and shared lessons learned.

- 1 **Laura Fortunato (UKRN)** provided insights into the early stages of the UKRN; how it was established, and what its vision and purpose is. She further shared the latest updates on the new governance structure of the UKRN.
- 2 **David Philip Morgan (GRN)** highlighted the GRN's various types of communication and outreach activities, while also sharing challenges and lessons learned.
- 3 **Oleksandr Berezko (UARN)** shared new information and updates on the establishment of this new Reproducibility Network in Ukraine, its planned activities and future members.
- 4 **Gina Pavone (Italian NOAD)** provided details into the Open Science network in Italy, how the NOAD is situated within and what they contribute to it.

- 5 **Pauli Assinen (Finnish NOAD)** focused on the NOAD's activities and trainings to support researchers who plan to use Open Science and reproducible research practices.
- 6 **Silvia Sofianos (Slovakian NOAD)** gave a detailed background on Open Science in Slovakia, and how the NOAD closely collaborates with the Slovak RN.

The individual slide decks are included in the report's supplementary material on OSF: <https://osf.io/7mf8a/>.

## 4. BREAKOUT SESSIONS

Interactive sessions were an integral part of the event, allowing participants from RNs and NOADs to network, share experiences, and discuss topics relevant to their work in reproducible research and Open Science.

The sessions were organized in two sessions. In the first session, participants were broadly grouped by geographical location, with the aim of fostering closer regional connections. One breakout group consisted of participants based in Western and Southern Europe, while another group included those located in Northern and Eastern Europe.

The second session allowed participants to join groups based on their topics of interest. As described previously, participants were asked to suggest discussion topics before the event. Three overarching themes emerged and two of these were selected for in-depth discussion:

### THEME 1 - INSTITUTIONALIZATION OF OPEN SCIENCE

- How to implement systemic change at an institutional level? (combining bottom-up and top-down approaches)
- How to effectively communicate with academic leaders about Open Science and reproducible practices?
- Incentives for open practices and open issues, such as best practices and solutions

## THEME 2 - COMMUNITY BUILDING AND TRAINING

- Open Science Training, national approaches
- How to kick-off and strengthen a national Reproducibility Network?
- Network administration: creating and connecting resources, large-scale collaborations
- Network activities and cross-border opportunities

The main discussion points from each session are reported below.

### SESSION #1: GROUPS ORGANIZED BY GEOGRAPHICAL REGIONS

#### Group 1 - West / South

In the West / South breakout group, participants exchanged success stories of data sharing and Open Science practices in their individual countries. The discussion also addressed the potential disconnect between Open Science policies and their execution in practice. Participants observed that when institutions implement Open Science initiatives, they often fail to translate into practical applications for relevant stakeholders. Researchers are either unaware of these initiatives or see them as additional checkbox exercises required for funding eligibility, rather than beneficial practices. In contrast, grassroots initiatives, such as local nodes of Reproducibility Networks led by researchers themselves, have been successful in engaging researchers and discussing the benefits of improving their workflows. However, these grassroots initiatives lack the authority and wide impact to effect systemic changes at the institutional level. Especially institutions with a hierarchical culture may face challenges when trying to incorporate grassroots initiatives into their research services. There's a risk that these initiatives may lose their grassroots ethos and become overly administrative. Currently, efforts are underway to institutionalize initiatives entirely from the bottom up. However, without the full support of a dedicated team including 'high up' stakeholders, this process is proving to be quite challenging.

#### Group 2 - North / East

In the North / East group, discussion started on why RNs are active and growing in some countries but not in others, and whether capacity issues lead to RNs becoming inactive. The group acknowledged the potential of RNs to act as facilitators and network connectors between overlapping initiatives, which could create a critical mass, leading to valuable collaborations.

Recognizing the wealth of great initiatives, the conversation turned towards engaging researchers and transitioning initiatives to the next stage. The role of mandates, where universities encourage Open Access publications to achieve better evaluations, was revisited. The group also explored the linguistic issue of what "reproducibility" is called in various countries and whether a native word exists. They discussed various Open Access or Open Data activities that are not collectively addressed under the broader category of "Open Research", emphasizing the potential for networks to advance this concept. The group highlighted the importance of careful framing of what reproducibility entails, balancing compliance and good practices, and addressing the reality of resources available. The group also discussed the normalization of specific best practices, the role of top-down approaches in legitimizing activities, and the use of Open Science as a tool. The need to recognize that not everyone has access to the same resources and the importance of aligning incentives were also discussed.

## SESSION #2: GROUPS ORGANIZED BY OVERARCHING TOPICS

### Group 1 - Institutionalisation of Open Science

The discussion revolved around how to implement systemic change at the institutional level, combining both bottom-up and top-down approaches. It was noticed that participation in Open Science training increases when it is conducted by fellow researchers, showcasing real-life examples and offering direct benefits. At the same time, practical information for implementation, such as guidance on how to comply with mandates or information on available tools for certain tasks, can also encourage participation. The consensus was that while the bottom-up approach is essential, the top-down approach can significantly boost practical activities and plays an important role for the sustainability of initiatives. The benefits for the scientific community are widely recognized by researchers, emphasizing the need to focus on principal investigators and administrative staff providing them with crucial information about mandates and compliance. The discussion also highlighted the importance of adequate incentives and the need to correct misaligned incentives.

### Group 2 - Community Building and Training

The group discussed the challenges of training across institutions and countries with varying resource levels, emphasizing the need to leverage the benefits of Open Science to uplift those with access to fewer resources. A key issue identified was not the lack of resources but the challenge of connecting and linking the same resources created by many people to improve the availability and user experience. The importance of appropriately addressing the communities' needs from the earliest stages of training and programme development was stressed.

Further discussions revolved around tools for Open Science, scaling up services and support to access reproducibility training, and improving the communication and dissemination of available resources. Lastly, the group discussed the importance of identifying who the target audience is and addressing their needs for effective training opportunities. The group recognized the lack of cross-collaboration with experts in media science and marketing, which would enhance science communication and reach of Open Science information to a wider group of relevant stakeholders. In general, there is an increasing need to consider our communities and their resource needs when developing and implementing new tools.

## 5. SUMMARY & NEXT STEPS

In summary, the event was deemed successful in fostering meaningful interactions and discussions among participants. A contact list was created to provide an opportunity for the attendees to stay connected after the event, including their names, emails, and optionally, LinkedIn profiles or other social media handles. A poll launched during the event revealed unanimous interest among participants in attending similar events in the future. Half of them expressed a preference for maintaining the interactive and exchange-oriented format, while the other half was inclined towards smaller group meetings focused on specific topics. No participants found the event unbeneficial, indicating its overall success.

After the 'Building Bridges' event, organizers sent out a survey to participants asking for their honest (and anonymous) feedback. Mandatory questions included:

- On a scale of 1 to 5, how well did the event meet your expectations?
- Please share the aspects of the event you enjoyed, particularly in relation to the format. What worked well?
- Please provide any feedback on aspects of the event you disliked or think could be improved. What changes would you like to see for future RN-NOAD meetings?

Additional optional questions included:

- Were there any specific outcomes you were hoping for and were they achieved?
- Feel free to share any additional comments or feedback that you believe would be valuable for the organizers to consider.



Some key takeaways from the feedback collected included (6 responses in total):

- In general, the event met or exceeded participants' expectations.
- Respondents reported that the specific outcomes they were expecting from the meeting were achieved, particularly learning more about how RNs, NOADs, and institutional Open Science organizations engage researchers.
- Participants reported that appreciated all aspects of the event; the lightning talks from RNs and NOADs, the general networking opportunity, and thematic breakout groups.
- For future improvements, participants suggested scheduling shorter meetings, introducing more concrete actions, and to include discussions on how reproducibility is monitored and measured.

Future collaborative events, strengthening the connection between Open Science and reproducibility initiatives are planned within the TIER2 project. While this event focused on initiatives based in Europe, upcoming meetings would greatly benefit from participation of relevant stakeholders outside of Europe as well, such as the global RN community.

## 6. APPENDIX

### List of participants

Participant	Organisation
Pauli Assinen	University of Helsinki - OpenAIRE Finnish NOAD
Susann Auer	TU Dresden, R4E and GRN
Oleksandr Berezko	UARN Coordinator
Ivan Buljan	Chair of Croatian Reproducibility Network
Helen Clare	Jisc, UKRN
Irina Cojocar	Moldova State University

Participant	Organisation
Adriana Dechina	Pensoft
Laura Fortunato	University of Oxford, UKRN
Leonhard Held	SwissRN
Malika Ihle	LMU Munich, GRN Local Network lead
Veli-Matti Karhulahti	FIRN
Maria Kontopidi	Athena Research Centre
Max Korbmacher	Norwegian RN
Iryna Kuchma	EIFL, Region East NOADs coordinator
Frank Manista	UKRN international advisory committee and UK NOAD
David Morgan	Open Science Office, University of Mannheim / GRN Steering Group
Elli Papadopoulou	ATHENA Research Center, OpenAIRE Greek NOAD
Gina Pavone	National Research Council of Italy - OpenAIRE Italian NOAD
Milica Sevkusic	University of Belgrade, OpenAIRE Serbian NOAD
Silvia Sofianos	Slovak Centre of Scientific and Technical Information - OpenAIRE Slovakian NOAD
Harvinder Virk	UKRN, supervisory board representative

## List of speakers

Speaker	Organisation	
Laura Fortunato	UK RN	<a href="https://osf.io/d8x7m">https://osf.io/d8x7m</a>
David Philip Morgan	Germany RN	<a href="https://osf.io/65sne">https://osf.io/65sne</a>
Oleksandr Berezko	Ukraine RN	<a href="https://osf.io/58qdv">https://osf.io/58qdv</a>
Gina Pavone	Italian NOAD	<a href="https://osf.io/2jdcs">https://osf.io/2jdcs</a>
Pauli Assinen	Finnish NOAD	Presentation without slide deck
Silvia Sofianos	Slovakian NOAD	<a href="https://osf.io/xwq6y">https://osf.io/xwq6y</a>

## Organisers

Organiser	Organisation
Stefania Amodeo	OpenAIRE
Alexandra Bannach-Brown	QUEST Center for Responsible Research
Friederike E. Kohrs	QUEST Center for Responsible Research