Opening of the Workshop

Monday, 30 May 2022 14:00 (15 minutes)

Presenters:  CROUZET, Laurent (Ministère de l’Enseignement supérieur, de la Recherche et de l’Innovation (MESRI));  BUDRONI, Paolo (e-IRG Chair (TU Wien));  BECKMANN, Volker (Ministère de l’Enseignement supérieur, de la Recherche et de l’Innovation (MESRI))

Session Classification:  Towards a sustainable European Open Science Cloud - The role of e-Infrastructures
Policy development relevant for EOSC and e-infrastructures: e-IRG perspective

Monday, 30 May 2022 14:45 (15 minutes)

e-IRG is a policy advisory body composed of national delegates with the aim to facilitate integration in the area of European e-Infrastructures and connected services, within and between Member States, at the European level and globally. e-IRG is overlooking the whole e-Infrastructure spectrum, from networking and computing to data and other services (such as middleware, software and related tools/services), covering not only short-term but also longer-term aspects, advising both Member States and the European Commission.

e-IRG has established informal liaison with the EOSC Steering Board. There has been a meeting between two sub-groups of the two bodies, which came up with some initial areas of cooperation and potential gaps (see below). This initial (setting the scene) meeting is being followed-up with this open e-IRG Workshop session jointly organised between the two bodies, while there have been a few more preparatory meetings for this session.

Some of the areas of cooperation between the two bodies and potential policy gaps relevant to EOSC that have been identified are the following:

- EOSC is mainly focusing on data and thus the links with the underlying networking and computing infrastructures which e-IRG is representing are less evident. Overall, the (almost 20 years of) experience of e-IRG over so many years in providing advice/recommendations and supporting policy making is vital for a sustainable EOSC ecosystem. And the e-IRG recommendations worked out together with EOSC can be brought for implementation via the EOSC SB.

- The role of institutional, national (regional) and EU levels that e-IRG is working on, which are required for a proper analysis and the envisaged sustainability of the infrastructure ecosystem and of its services. The national mandates from the e-IRG delegates need to be also taken into account.

- The need to have better understanding of data and the underlying e-Infrastructure costs in EOSC, both Capital Expenditures (CapEx) and Operational Expenditures (OpEx), as we are moving towards the next phase of the operationalized EOSC that will be come out of a tender, including agreed methodologies and common approaches across Europe.

- Several countries’ e-Infrastructures are expanding their services beyond research, into the provision of services for the digital governance (education, health, culture, other public sector areas/citizens etc.) and digital transition and this may be an opportunity but also a threat for EOSC.

Presenter: BLANQUER, Ignacio (Polytechnic University of Valencia, e-IRG member, Spain)

Session Classification: Towards a sustainable European Open Science Cloud - The role of e-Infrastructures
Discussion

Monday, 30 May 2022 14:25 (20 minutes)

Session Classification:  Towards a sustainable European Open Science Cloud - The role of e-Infrastructures
EOSC Steering Board monitoring of national contributions to the EOSC

Survey motivation
- Open Science, EOSC and ERA context
- Benefits for communities and e-infrastructures
- Status of the survey

Results:
- EOSC-relevant policy coverage in Europe
- Open Science, Open Data, Open Source, Skills & Competences, ...
- EOSC-relevant financing in 2020 related (or not) to policies

Next steps
- extended survey (late 2022)
- additional areas surveyed
- collaboration with other partners » possibilities to influence survey evolution
- EOSC Observatory and ERA dash- and scoreboard
- How will e-infrastructures benefit from the monitoring

Presenter: NEIDENMARK, Thomas (EC, RTD)

Session Classification: Towards a sustainable European Open Science Cloud - The role of e-Infrastructures
**Policy development relevant for EOSC and e-infrastructures: EOSC perspective**

*Monday, 30 May 2022 15:00 (20 minutes)*

The EOSC Steering Board expert group (E03756) assists the strategic coordination between the Commission and EU Member States and countries associated (AC) to the Horizon Europe framework programme on questions relating to the implementation of Union legislation, programmes and policies related to Open Science and EOSC. The ambition is to foster the convergence of European and national open science policies and initiatives.

The work includes mapping of national contributions by MS/AC to further develop the EOSC. This is done in synergy with the implementation of the EOSC Strategic Research and Innovation Agenda (SRIA) on a European level and aims at a collective understanding of how to assess these contributions. The joint capacity to monitor the EOSC implementation progress together with the transition to open science is the EOSC Observatory.

As part of its EOSC SB work (including its sub-groups) the following policy aspects have been identified relevant to e-IRG:

- Supporting data related skills and competences through (national) policies.
- The role service providers from the private sector could and should play in the EOSC.
- Data sovereignty: Independent of where data are stored (may be a cloud infrastructure beyond the country created/collected) they are subject to the laws and governance of the country created/collected. Data sovereignty is thus closely connected with cloud computing, data protection regulations and data privacy, cross border data transfers and international data spaces.

**Background:**

Information about the EOSC-SB expert group (ToR, sub-groups, minutes, etc.) [https://ec.europa.eu/transparency/expert-groups-register/screen/expert-groups/consult?lang=en&amp;groupID=3756](https://ec.europa.eu/transparency/expert-groups-register/screen/expert-groups/consult?lang=en&amp;groupID=3756)

EOSC SRIA: [https://www.eosc.eu/sria](https://www.eosc.eu/sria)

The EOSC Observatory is a tool to collect, analyse, and visualise information.

**Presenter:** ROSSI, Giorgio (University of Milan, EOSC SB member, Italy)

**Session Classification:** Towards a sustainable European Open Science Cloud - The role of e-Infrastructures
Wrap-up and Closing

Monday, 30 May 2022 16:00 (10 minutes)

Presenter: BUDRONI, Paolo (e-IRG Chair (TU Wien))

Session Classification: Towards a sustainable European Open Science Cloud - The role of e-Infrastructures
Opening and Welcome

Tuesday, 31 May 2022 10:00 (15 minutes)

Presenters: BUDRONI, Paolo (e-IRG Chair (TU Wien)); BECKMANN, Volker (Ministère de l’Enseignement supérieur, de la Recherche et de l’Innovation (MESRI))

Session Classification: The twin “green and digital” transition in e-Infrastructures
DIGITAL TECHNOLOGIES IN EUROPE: an environmental life cycle approach

Tuesday, 31 May 2022 10:15 (10 minutes)

We too often tend to think that Information and Communication Technologies (ICTs) would have as little environmental impact as they seem virtual. However, the reality is here:
At European level alone, ICTs are responsible each year for 40% of the EU’s Green House Gas (GHG) budget to stay below 1.5°C of global warming.
Similarly, at the European level, ICT spends 40% of Europe’s sustainable budget in terms of the use of mineral and metal resources.
35% of the sustainable budget concerning ecotoxicity in fresh water.
26% of the sustainable budget on fossil resources.
The magnitude of the results shown by this study raises - once again - the alarm.
No, digital is not virtual. Its impacts are very real. They can and should be measured through Life Cycle Analysis (LCA).
The objective of this presentation is, beyond the observation, to provide solutions to address both the challenges of resilience and mitigate the environmental impacts of the technologies: adopt a posture of digital sobriety and slow tech and, operationally, eco-design and reuse.

Presenter:  DE MONTENAY, Lorraine
Session Classification:  The twin “green and digital” transition in e-Infrastructures
HPC at the service of energy efficiency

*Tuesday, 31 May 2022 10:25 (10 minutes)*

After a short introduction to EDF’s activities and the group’s commitment to energy transition, an inventory of EDF’s infrastructures and areas of use for HPC are presented. Then, the impacts of energy transition on the infrastructures, the home-made codes and the studies that are carried out are addressed. Finally, the options to make users aware of the energy sobriety of the simulations and data produced are presented.

**Presenter:** BAUDRY, Cyril (Électricité de France (EDF) R&D, France)

**Session Classification:** The twin “green and digital” transition in e-Infrastructures
MeluXina: next-generation EuroHPC supercomputing, boosting industry and research

Tuesday, 31 May 2022 10:45 (10 minutes)

Presenter: PLUGARU, Valentin (Université de Luxembourg)

Session Classification: The twin “green and digital” transition in e-Infrastructures
Panel Discussion

Tuesday, 31 May 2022 10:55 (25 minutes)

Presenters: BAUDRY, Cyril; DE MONTENAY, Lorraine; WITTENBURG, Peter; MAYO-GARCIA, Rafael; PLUGARU, Valentin

Session Classification: The twin “green and digital” transition in e-Infrastructures
Digitization, Sustainability and Planetary Health: How to Avoid a Dystopian Future

Tuesday, 31 May 2022 11:20 (10 minutes)

Presenter: HELBING, Dirk (ETH Zurich)

Session Classification: The twin “green and digital” transition in e-Infrastructures
Destination Earth digital twin

How will the impact of severe weather and climate change affect your country or your region and how will you manage the risks of environmental extremes?

To address the need for enhanced prediction capabilities, the European Union has set in motion Destination Earth (DestinE), a visionary initiative to create Digital Twins of the Earth system supporting climate change adaptation policies and decision-making for reducing the impacts of extremes. DestinE will contribute to revolutionising the European capability to monitor and predict our changing planet and complement existing national and European services.

The individual digital twins will produce near real-time, highly detailed and constantly evolving replicas of Earth, including the impact of human activities. Ultimately, the twins will be combined to build a single, highly complex replica of the Earth system that will be more detailed than anything seen before, providing prediction capabilities with an unprecedented level of detail and reliability but also an infrastructure to interact with models and data in new ways.

**Presenter:** GEENEN, Thomas (ECWMF)

**Session Classification:** The twin “green and digital” transition in e-Infrastructures
AI and Climate Change

Tuesday, 31 May 2022 11:40 (10 minutes)

How will the impact of severe weather and climate change affect your country or your region and how will you manage the risks of environmental extremes?

To address the need for enhanced prediction capabilities, the European Union has set in motion Destination Earth (DestinE), a visionary initiative to create Digital Twins of the Earth system supporting climate change adaptation policies and decision-making for reducing the impacts of extremes. DestinE will contribute to revolutionising the European capability to monitor and predict our changing planet and complement existing national and European services.

The individual digital twins will produce near real-time, highly detailed and constantly evolving replicas of Earth, including the impact of human activities. Ultimately, the twins will be combined to build a single, highly complex replica of the Earth system that will be more detailed than anything seen before, providing prediction capabilities with an unprecedented level of detail and reliability but also an infrastructure to interact with models and data in new ways.

**Presenter:** KAACK, Lynn (Hertie School, University of Governance, DE)

**Session Classification:** The twin “green and digital” transition in e-Infrastructures
Wrap-up and Closing

*Tuesday, 31 May 2022 12:10 (5 minutes)*

**Presenter:** BUDRONI, Paolo (e-IRG Chair (TU Wien))

**Session Classification:** The twin “green and digital” transition in e-Infrastructures
EOSC presentation on cooperation with other e-Infrastructures

Tuesday, 31 May 2022 14:15 (10 minutes)

Presenter: GUNSENHEIMER, Ute (EOSC Association)

Session Classification: Cross-e-Infrastructure collaboration and coordination (network, computing, data)
EuroHPC presentation on cooperation with other e-Infrastructures

Tuesday, 31 May 2022 14:25 (10 minutes)

Presenter: WOOD, Joséphine (EuroHPC JU)

Session Classification: Cross-e-Infrastructure collaboration and coordination (network, computing, data)
GÉANT presentation about cooperation with other e-Infrastructures

Tuesday, 31 May 2022 14:35 (10 minutes)

**Presenter:** STÖVER, Cathrin (GÉANT)

**Session Classification:** Cross-e-Infrastructure collaboration and coordination (network, computing, data)
Opening and Welcome

Tuesday, 31 May 2022 14:00 (15 minutes)

Presenters: BUDRONI, Paolo (e-IRG Chair (TU Wien)); BECKMANN, Volker (French Ministry of Higher Education, Research and Innovation (MESRI))

Session Classification: Cross-e-Infrastructure collaboration and coordination (network, computing, data)
Panel Discussion

Tuesday, 31 May 2022 14:45 (35 minutes)

Discussion on the first part of the session and interaction with the audience

Presenters: STÖVER, Cathrin (GÉANT); TESTI, Deborah (EUDAT); BLANQUER, Ignacio (UPV/e-IRG Spain); WOOD, Josephine (EuroHPC Joint Undertaking (JU)); MANOLA, Natalia (OpenAIRE); BRÖNNIMANN, Peter (SBFI/e-IRG Switzerland); FERRARI, Tiziana (EGI.eu); GUNSENHEIMER, Ute (EOSC Association)

Session Classification: Cross-e-Infrastructure collaboration and coordination (network, computing, data)
New ERA Policy Agenda

Tuesday, 31 May 2022 15:20 (10 minutes)

Presenter: MOZINA, Sergej (ERA Forum, Member States co-Chair, Slovenia)

Session Classification: Cross-e-Infrastructure collaboration and coordination (network, computing, data)
Key Performance Indicators across e-Infrastructure components

Tuesday, 31 May 2022 15:30 (10 minutes)

Presenter: O’NEILL, Gareth (Technopolis Group)

Session Classification: Cross-e-Infrastructure collaboration and coordination (network, computing, data)
One of the main goals of the euroCRIS member association is to promote system interoperability and information exchange across institutional, regional, national, funder and international research information systems in order to allow this info to be aggregated and comprehensively analysed. The CERIF standard (Common European Research Information Format), endorsed by the EC, is the main tool to achieve this interoperability. Due to the ever-growing amount of information around research datasets and its associated metadata that are being collected in CRIS systems of all kinds, these could gradually become a key infrastructure for EOSC data provision purposes.

**Presenter:** DE CASTRO, Pablo (EuroCRIS Board member)

**Session Classification:** Cross-e-Infrastructure collaboration and coordination (network, computing, data)
Panel Discussion

Tuesday, 31 May 2022 11:50 (20 minutes)

Presenters: HELBINGER, Dirk; KAACK, Lynn; WITTENBURG, Peter; GEENEN, Thomas

Session Classification: The twin “green and digital” transition in e-Infrastructures
Panel Discussion

Tuesday, 31 May 2022 15:50 (20 minutes)

Presenters: O’NEILL, Gareth (Technopolis); BLANQUER, Ignacio (UPV); DE CASTRO, Pablo (EuroCRIS); BRÖNNIMANN, Peter (SBFI); MOZINA, Sergej (ERA Forum)

Session Classification: Cross-e-Infrastructure collaboration and coordination (network, computing, data)
Wrap-up and conclusion

Tuesday, 31 May 2022 16:10 (5 minutes)

**Presenter:** BUDRONI, Paolo (TU-Wien)

**Session Classification:** Cross-e-Infrastructure collaboration and coordination (network, computing, data)
As introduced in the previous talks from EOSC SB and e-IRG members, there have been some main points identified:

- Gaps in the policy landscape for e-Infrastructures relevant to EOSC (see e-IRG talk), such as the inherent focus of EOSC on data (and less on e-Infrastructures), the lack of methodologies and processes for identification of underlying costs, etc.
- Aspects to consider from the e-Infrastructure point of view related to the 3 topics of the EOSC SB subgroup (skills, role of private sector and data sovereignty). In particular:
  - Supporting data related skills and competences through (national, institutional, EU?) policies. Furthermore, research/e-infrastructure providers and research performing organisations have a hard time retaining their data experts in their organisations, as industry usually offers better salaries.
  - The role service providers from the private sector could and should play in the EOSC. Relevant to this is also the discussion whether the research community should acquire (lease) resources (e.g. computing, storage) from commercial providers.
  - Data sovereignty: Independent of where data are stored (may be a cloud infrastructure beyond the country created/collected) they are subject to the laws and governance of the country created/collected. Data sovereignty is thus closely connected with cloud computing, data protection regulations and data privacy, cross border data transfers and international data spaces.

All groups will be discussing the same questions, each starting from a different question as time is short.

Group 1:
1. Do you see important gaps in the European policy landscape for e-infrastructures apart from the policy issues under discussion (skills and competences, EOSC and the private sector, data sovereignty) at the EOSC Steering Board?
2. Which are the most crucial elements to consider when preparing policies on these topics?
3. What’s the most appropriate way to influence the national and European policy landscape?
4. How can good practices or failures on developing and implementing policies at national level help progress implementation by other MSs and ACs? And how a European-wide implementation benefits all users?

Group 2:
1. Which are the most crucial elements to consider when preparing policies on the topics raised by the speakers? (skills and competences, EOSC and the private sector, data sovereignty)
2. What’s the most appropriate way to influence the national and European policy landscape?
3. How can good practices or failures on developing and implementing policies at national level help progress implementation by other MSs and ACs? And how a European-wide implementation benefits all users?
4. Do you see important gaps in the European policy landscape for e-infrastructures apart from the policy issues under discussion (skills and competences, EOSC and the private sector, data sovereignty) at the EOSC Steering Board?

Group 3:
1. What’s the most appropriate way to influence the national and European policy landscape?
2. How can good practices or failures on developing and implementing policies at national level help progress implementation by other MSs and ACs? And how a European-wide implementation benefits all users?
3. Do you see important gaps in the European policy landscape for e-infrastructures apart from the policy issues under discussion (skills and competences, EOSC and the private sector, data sovereignty) at the EOSC Steering Board?
4. Which are the most crucial elements to consider when preparing policies on these topics?

**Group 4:**

1. How can good practices or failures on developing and implementing policies at national level help progress implementation by other MSs and ACs? And how a European-wide implementation benefits all users?
2. Do you see important gaps in the European policy landscape for e-infrastructures apart from the policy issues under discussion (skills and competences, EOSC and the private sector, data sovereignty) at the EOSC Steering Board?
3. Which are the most crucial elements to consider when preparing policies on these topics?
4. What’s the most appropriate way to influence the national and European policy landscape?

**Session Classification:** Towards a sustainable European Open Science Cloud - The role of e-Infrastructures
Reporting from the breakout session

Monday, 30 May 2022 15:50 (10 minutes)

Session Classification: Towards a sustainable European Open Science Cloud - The role of e-Infrastructures
Digitalisation for energy

Tuesday, 31 May 2022 10:35 (10 minutes)

The European Energy Research Alliance (EERA) identified several cross-cutting activities that should be reinforced within the energy sector, being digitalisation a paramount one as it is changing the way in which research and innovation is being carried out. As a result, the transversal Joint Programme ‘Digitalisation for Energy’ was launched as a transversal activity pilot in Fall 2020 and officially approved by the 2022 General Assembly. In this talk, the different activities that have been carried out, the planned roadmap, and the specific implication with the e-Infrastructure domain are presented.

Presenter: MAYO-GARCÍÁ, Rafael (CIEMAT)

Session Classification: The twin “green and digital” transition in e-Infrastructures