# Value of e-IRG and prospect

## Mission, composition

The e-Infrastructure Reflection Group (e-IRG) is a strategic body aimed at facilitating integration in the area of **all types of e-Infrastructures and connected services**, within and between European Member States, at the European level and globally. e-IRG's mission is to support both coherent, innovative and strategic European e-Infrastructure policymaking and the development of convergent, interoperable and sustainable e-Infrastructure services.

e-IRG is the **independent Member State-based body** in the area of e-Infrastructures and related activities. With its activities e-IRG is overlooking the whole spectrum of the e-Infrastructure Commons, from networking and computing to data and connected services, with an eye to not only short-term, but also longer-term aspects, advising both Member States and the European Commission. e-IRG consists of national delegates nominated by their ministries. The complementarity in its composition, with members from science and ministries, from Member States, Associated Countries and the European Commission provides e-IRG the capability of having informed discussions and producing well-balanced recommendations.

e-IRG delegates actively participate in and contribute to national and European initiatives, committees, boards and organizations on e-Infrastructures such as the ERAC SWG on Open Science and Innovation, RDA, EuroHPC, PRACE, GEANT, EGI, EUDAT and OpenAIRE. e-IRG delegates not only have valued expertise in the e-Infrastructure policy and implementation domain, but also obtain and enhance a comprehensive understanding of the progress in the field of e-Infrastructures. e-IRG also serves as an exchange platform of information and experiences between stakeholders in and between Member States and Associated Countries and with the European Commission.

e-IRG delegates are frontrunners in the various activities that build the European Open Science Cloud (EOSC), the overarching European instrument to facilitate the Open Science concept, e.g. as members of the EOSC Governing Board, of EOSC Working Groups or of the SRIA Editorial Board. In fact, one might view the EOSC as a result of e-IRG's earlier activities: in its Roadmap 2012 e-IRG [3] coined the term "e-Infrastructure Commons" as a living ecosystem for knowledge, innovation and science, that is open and accessible and continuously adapts to the changing requirements of research.

## Mode of operation; achievements

e-IRG acts as a neutral advisory body and works through producing strategic and policy reports, analyses and recommendations. e-IRG produced policy documents on the development of the **e-Infrastructure Commons** [3,4,5], on KPIs [8], and -to serve prospective ESFRI projects- a *Guide to e-Infrastructure requirements for European Research Infrastructures* [6]. Furthermore e-IRG was heavily engaged in the formulation of the *European Charter for Access to Research Infrastructures* [9]. e-IRG's most recent publication on **National Nodes** [7] provides a landscape analysis of funding, governance, access models of national e-Infrastructures. This coordinated approach of national e-Infrastructures is very relevant, as the EOSC will develop as a federation of national open science clouds.

e-IRG actively stimulates discussion with and between all stakeholder groups through its **biannual** implementation of **workshops**, organised in the framework of the Presidency of the Council of the European Union. For example, during the Finnish EU Presidency (2019) the e-IRG Workshop addressed the topics of Lifelong Learning, EuroHPC in the context of European competence development, Artificial Intelligence strategies and Cybersecurity in the e-Infrastructure context. The e-IRG workshop under the Croatian EU Presidency (organised as a virtual workshop due to the outbreak of the COVID-19 pandemic) addressed three top challenges for the further development of e-Infrastructures in the ERA and beyond: development of adequate skills, the partnerships between related stakeholders within and across national boundaries, and the sharing of data under the FAIR principles, within and across scientific domains, institutions and countries. The e-IRG workshops provide a stage for high-level speakers and attract an audience per workshop of about 100 experts and policy makers. They always receive very positive ratings.

## e-IRG's long-term vision for a holistic e-Infrastructure Commons within the European Research Area

The digital transformation profoundly impacts all aspects of Research and Innovation (R&I) and is one of the driving forces behind the development of the ERA. The digital transformation involves sharing resources within and between research communities and across national boundaries. In line with the ERAC e-IRG sees the need for a **federated and coordinated approach** in Europe to overcome the lack of inclusiveness and coordination in Open Science and Open Innovation to continuously strengthen the scientific and technological base in Europe towards a fully functioning ERA. [1,2]

Current EC policies pose a **risk of fragmentation**. Relevant elements for the digital transformation in the R&I domain concern work programmes in both Horizon Europe and Digital Europe. **The EOSC may be recognized as a first implementation towards the e-Infrastructure Commons in Europe**. It might also be seen as an instantiation of a European dataspace for R&I. **A comprehensive implementation of the e-Infrastructure Commons within the European Research Area (ERA) requires an integrative approach covering the federation of the full e-Infrastructure spectrum including EOSC and EuroHPC**. For such an approach e-IRG is an indispensable instrument. e-IRG serves an exchange of (expert) information and policies and facilitates informed discussions on topics like:

- **Good practices of coordination and collaboration within and across e-Infrastructures and thematic research infrastructures**
- **Realisation and enhancement of partnerships in the e-Infrastructure landscape covering the full spectrum, including EDI and ECI**
- **Resilience and value of e-Infrastructures in transient situations, eg. COVID-19 pandemic**
- **Analysis of the complementary dimensions of national situations**
- **Reflections of data interoperability and machine actionability**
- **Education and skills**
- **Artificial Intelligence, Quantum Computing, e-Learning, etc. highlighting the crucial role of e-Infrastructures**

e-IRG is well positioned for guiding these developments well beyond the implementation of the EOSC, ensuring directionality (common vision) and additionality (added value) in the e-Infrastructure endeavours.

**Links:**
[1] ERAC - Opinion on future Open Science and Open Innovation priorities in the ERA (https://era.gv.at/object/document/5254)

[2] ERAC - ERAC Opinion on the Future of the ERA (https://era.gv.at/object/document/5133)

[3] e-IRG - e-IRG Roadmap 2012 (http://e-irg.eu/documents/10920/12353/e-irg_roadmap_2012-final.pdf)

[4] e-IRG - e-IRG White Paper 2013 (http://e-irg.eu/catalogue/eirg-1003)

[5] e-IRG - e-IRG Roadmap 2016 (http://e-irg.eu/catalogue/eirg-1002)

[6] e-IRG - Guide to e-Infrastructure requirements for European Research Infrastructures (http://e-irg.eu/catalogue/eirg-1004)

[7] e-IRG - National Nodes – Getting organised; how far are we? Implementing e-Infrastructure Commons and the European Open Science Cloud (http://e-irg.eu/catalogue/eirg-1006)

[8] e-IRG - Evaluation of e-Infrastructures and the development of related Key Performance Indicators (http://e-irg.eu/catalogue/eirg-1005)

[9] EC - European Charter for Access to Research Infrastructures (https://ec.europa.eu/info/sites/info/files/research_and_innovation/2016_charterforaccessto-ris.pdf)