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# e-IRG Vision on the future of the ERA e-IRG 20 years Anniversary Session

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**e-IRG**  
e-Infrastructure  
Reflection Group

**Vision:** facilitate **integration** in the area of **European e-Infrastructures and connected services**, within and between member states, at the European level and globally

**Mission:** support a/ **coherent, innovative and strategic European e-Infrastructure policymaking** and b/ **development of convergent and sustainable e-Infrastructure services**



*Vision and mission remain relevant, in fact more than ever, in this new landscape with GEANT, EOSC, EuroHPC and EU Data Spaces!*

# e-Infrastructure Commons: e-IRG efforts

**e-Infrastructure Commons** is the political, technological, and administrative framework for an easy and cost-effective shared use of distributed electronic resources across Europe.

e-IRG outlines Europe's need for a single "e-Infrastructure Commons" for knowledge, innovation and science [**e-IRG Roadmap, 2012**]

e-IRG stresses the need for e-Infrastructure **coordination at the national level** and **strong national building blocks**, enabling coherent and efficient participation in European efforts [**e-IRG Roadmap, 2016**]

Role of **National Nodes**, in the implementation of the e-Infrastructure Commons and its instantiation as the European Open Science Cloud [**National Nodes, 2019**]

e-IRG addressing the **good practices of coordination** within and across horizontal (domain-agnostic) **e-Infrastructures** and thematic (domain-specific) **Research Infrastructures** [**White Paper 2021**] - Institutional, National, Regional levels

e-IRG thematised the **coordination among the European e-Infrastructures** and the need for collaboration at various levels to realise the concept of the e-infrastructure Commons and its instantiation as the European Open Science Cloud [**White Paper 2022**] - EU level



# Evolution of the e-Infrastructure landscape and related technologies

## *From GRID to Cloud to Virtualisation to Containers to Edge*

- **Technologies are evolving**
  - AI for e-Infrastructures and e-Infrastructures for AI
  - Quantum is knocking at the door

## *Computing is moving to the Data*

- Direction has changed; can send the algorithms to data

## *Service layer to become much more important, and an e-Infrastructure in itself!*

- E.g. AI, semantic web technologies, workflows
- An additional layer of abstraction
- New players?

## *Scientific silos are still in place*

- **Common European Data Spaces are domain-specific**; need to see to what extent they will be using horizontal e-Infrastructures/services/EOSC

## *Software (and all its versions) is recognised as essential part of reproducible science*

# e-Infra Commons (1) - Status

## GÉANT/NRENs: The only “transparent” Commons up to now

- I.e. users are using it, in most cases, without even knowing its existence...
- **Innovation** needs to be continued, as well as **operations/community support**
- **EuroHPC** centres interconnection also key area for the future

## EOSC/National initiatives: 2 main components:

- The “**Commons**” part (portals/marketplace) and the **Open Science** part
  - The Open Science part has slow progress as expected (needs cultural change, training/skills on FAIRification, different progress/maturity in different communities..)
  - The “**Commons**” part (**portals**) is an opportunity to provide added-value for users!

# e-Infra Commons (2) - Status

## EU Common Data Spaces (thematic + EOSC):

- Different progress/ requirements for different areas; still early, procurements ongoing!
- Objective to create interoperable “data” markets; SIMPL middleware is key!

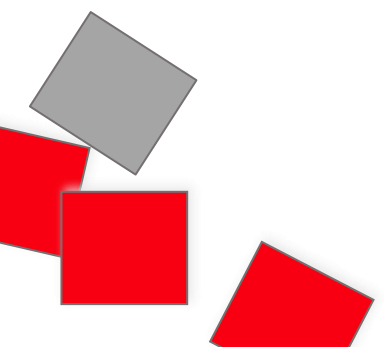
## EuroHPC/Member States: Focusing on its own activities (as expected)

- **Procurement** of centres (pre/exascale), European Processor Initiative, Training/Competence Centres, energy efficiency, ..
- **Coordination** with other components to become soon more important

# e-Infra Commons (3) - e-IRG activities

## e-Infrastructure Assembly

- Process started to establish an “Assembly” to facilitate coordination and cooperation among the European e-Infrastructures
- Most e-Infrastructure-related organisations positive:
  - GEANT, EGI, EUDAT, OpenAIRE, PRACE
  - Strategic coordination planned for the benefit of the e-Infra users



# e-Infra Commons (4) - e-IRG activities

Contribution to the **ESFRI-EOSC Task Force** as observer

- ESFRI-EOSC Task Force to ensure a structured interface between the ESFRI Forum and the EOSC Steering Board beyond the current ad-hoc cooperation
- Better coordination among horizontal e-Infrastructures and thematic RIs
- e-IRG can bring the voices of e-Infrastructures (in case they are not invited)

Work on **EOSC governance and financial sustainability** (after Horizon Europe)

- Informal liaisons with EOSC SB and EOSC-A



Realisation of the *e-Infrastructure Commons* across all components:

- Coordination among all levels
  - Among horizontal e-Infrastructures - Among e-Infrastructures and thematic RIs
    - More federated/integrated/joint services across e-Infra components
  - at European/regional levels
  - at national level
  - at institutional level (where appropriate)

*Seamless user experience / holistic research experience:*

- Users do not have to care about different e-Infrastructures
- Users have personalised spaces with all data, publications, services, workflows, software, etc. relevant to them working transparently!

## Realisation of the *e-Infrastructure Commons*

- Seamless user experience
- Facilitating holistic research experience
- Across scientific domains

## Coordination among all levels

- Among horizontal e-Infrastructures - Among e-Infrastructures and thematic RIs
  - at European/regional levels
  - at national level
  - at institutional level (where appropriate)

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