



e-IRG Workshop under Czech EU  
Presidency



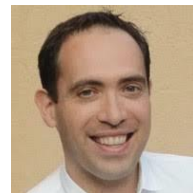
# Coordination and cooperation among e- Infrastructures

## e-IRG White Paper 2022

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# 'whoami'



Working in e-Infrastructures since year 2000 - Thanks to V. Maglaris!



Science and Technology Facilities Council

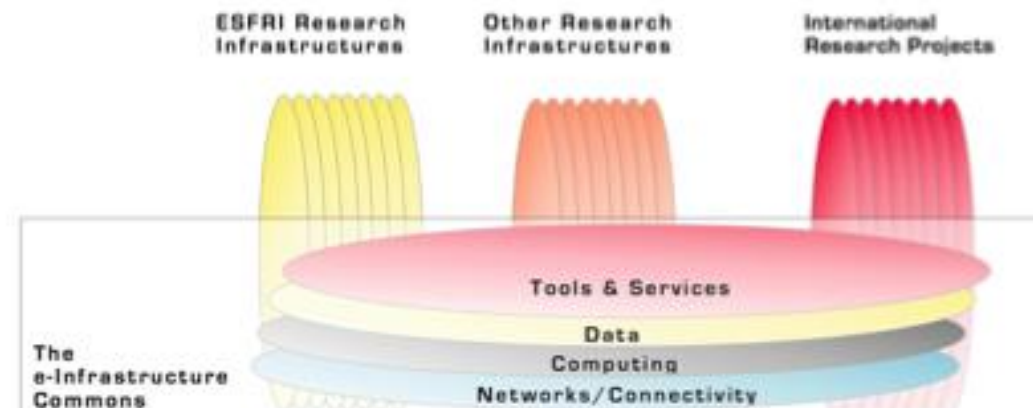


# The e-IRG e-Infrastructure Commons → Foundation of EOSC

## **e-IRG e-Infrastructure Commons**

*(e-IRG Roadmap 2012 -> e-IRG White Paper 2013 -> e-IRG Roadmap 2016)*

*The e-Infrastructure Commons can be defined as the integrated living ecosystem of resources and services (along with its policies and governance) that is open, user friendly and accessible to European researchers and scientists, and continuously adapts to the changing requirements of research and science.*



# EOSC= e-IRG Commons + Open Science

In Dec 2014, related doc published:

- <https://zenodo.org/record/406356>

Towards the e-Infrastructure Commons 2020:

## A marketplace for e-Infrastructure services

A concrete step towards e-Infrastructure services integration

- Expanding the e-IRG Infrastructure Commons idea
- **Contributing to the definition of EOSC and several of its key concepts (portal)**
  - Point of access, catalogue of services, search, research + commercial services, compliance (rules of participation), AAI, multiple views (national, regional, EU..)

# About cooperation & coordination: Competitive Council conclusions

## On the new ERA (2020)

encourages the EC and the MSs/ACs *“to increase the level of **national and European coordination**, in particular on RIs and e-infrastructures”*.

## On the Pact for R&I (2021)

*“connection of existing and new European and national research infrastructures, including e-infrastructures”*

## On ERA Governance & Policy Agenda → ERA Action 8 on RIs

*“increased cooperation between RIs, e-infrastructures and stakeholders, including through EOSC”*

# e-IRG advice on coordination & cooperation



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**]

Good practices of **coordination** within and across e-Infrastructures and thematic Research Infrastructures [**e-IRG White Paper 2021**]

Realisation and enhancement of **coordination and collaboration** in the e-Infrastructure landscape covering the full spectrum of e-Infrastructures (networking, computing, data infrastructures) and related services [**e-IRG White Paper 2022**] planned for Dec' 2022

# e-IRG White Paper 2022

Coordination at EU-level

## Background

- Some e-Infrastructures are in production for decades 
- Considerable developments in computing/data infrastructures in the last 5-15 years     
- Two significant initiatives have been launched → well underway
  - European Open Science Cloud (EOSC) 
  - EuroHPC Joint Undertaking 
- **Coordination across EU players is ad-hoc and at an early stage**

# e-IRG White Paper 2022

Coordination at EU-level

## Topic

- Bridge the identified **cooperation/coordination gaps**:
  - reflecting on the above issues
  - providing concrete advice and recommendations to all stakeholders
  - contributing towards increasing cooperation and coordination

## Envisaged outcome (in the long run)

- Provide **integrated user-friendly services, easing the work of researchers**
  - So that they can focus on their (cross-)disciplinary research, not on infra/tools!



# e-IRG related past recommendations!

## e-IRG White Paper 2013

*e-IRG believes this challenge (integrated service provision) can be met by maintaining a clear separation between the three core functions:*

- **1. Community building, high-level strategy and coordination in Europe:** *for each type of e-Infrastructure service, a single coordinating organisation with a central role for user communities. **These bodies, in turn, will need a forum for coordination between them across the different e-Infrastructure types.***
- **2. Service provision:** *flexible, open, and competitive approach to national, European, and global service provision; with advanced collaboration among the interested public and commercial service providers.*
- **3. Innovation:** *Implementation of major innovation projects through the best consortia including e-Infrastructure suppliers, industry, users and academia with a dedicated management structure comprising the partners per project.*

# e-IRG White Paper 2022

Coordination at EU-level

## Process:

- Established informal link with **EOSC Steering Board** in Sep '21
- Dedicated meeting with **EC** (DG Connect and DG RTD) in Dec '21
- Organised sessions at May '22 e-IRG workshop under FR EU Presidency
  - Session I: Towards a sustainable EOSC - The role of e-Infrastructures
  - Session III: **Cross-e-Infrastructure collaboration and coordination**
- Prepared a **questionnaire** sent to all major e-Infra stakeholders – Aug '22
- **Answers received** – Sep -Nov '22
  - EGI, EOSC-A, EOSC Steering Board, EUDAT, GEANT, OpenAIRE, PRACE
  - Analysis completed only early Dec'22 – Paper to be discussed by e-IRG this week

# e-IRG White Paper 2022

Questionnaire analysis(1)

## 1. Respondents

EGI, EOSC-A, EOSC Steering Board, EUDAT, GEANT, OpenAIRE, PRACE



No answer from EuroHPC yet, although some input provided in workshops



## 2. Governance of EU e-Infrastructures (strategy setting-coordination):

- a. How does the EU e-Infrastructure initiative you represent perceive the idea of an **e-Infrastructure umbrella Forum** for community building, high-level strategy setting and coordination for the entire e-Infrastructure landscape?
  - i. Vast majority of answers is **positive (covering all e-Infrastructures, including open scholarly communications)** but clear definition of roles and coordination with existing bodies is required.
  - ii. **EOSC SB** proposes existing channels, e.g. EOSC-A, ESFRI SHF or joint ESFRI-EOSC TF?
  - iii. Some form of **representation of users** is also favoured, possibly advisory and domain-agnostic/neutral (to be discussed)
- b. Do you believe that besides a strategy / coordination forum a **technical / operational forum** across all e-Infrastructures would be beneficial?
  - i. Mixed answers, some **positive**, some **negative**.. Some **technical aspects can be brought to the main strategy forum**

### 3. Compatible policies/interoperable services/operational aspects:

- a. Do you believe that the **EOSC and EuroHPC** (federation and sharing) paradigms should be expanded to **federate data/services** across all major European e-Infrastructures?
  - i. **Mixed answers**. EOSC and EuroHPC coordination should happen in a **next phase**
- b. What about (EOSC and EuroHPC) **compatible policies** and interoperable services, so that they can be integrated in a federated portal?
  - i. **Mixed answers**, priority on each of the two first, before attempting to work together...
- c. **AAI paradigm**: is this a success story?
  - i. **Rather positive**, although multiple providers and slow progress. Still quite some work to make it more user friendly and transparent when using services across different service providers.

### 3. Compatible policies/interoperable services/operational aspects:

- d. Coordination to bridge the gap between **resource access models in HPC and HTC**?
  - i. Still early, but there is some work from PRACE on this. E.g. light weight peer-review evaluation for AI resources.
- e. Contribution of the e-Infra Forum in the **EU Charter of Access** for RIs including e-Infrastructures?
  - i. **Very positive!** Charter of Access could benefit from coordinated inputs
- f. Coordination with **industry** (e.g. GAIA-X) and **data spaces**?
  - i. Mixed answers: **Important areas**, but priority in a **next phase** (e.g. 2025-2027)
- i. Other areas?
  - i. Yes, need for **a cross e-Infrastructure helpdesk for technical support and joint training capacity planning/delivery**; Other: harmonization of e-Infra access, interoperability/standardization of APIs/architectural aspects, data security/practices & tools for sensitive data, data/repo certification

### 4. Cost and Business Models, Funding/Sustainability:

- i. Does your infrastructure have a *cost model and methodology* to track its costs? If a federated e-Infrastructure, is there a common cost model/methodology across the national components?
  - i. Mixed answers, some ongoing efforts but more work required/complicated.
- ii. **Development of lightweight methodology?**
  - i. Mixed answers, **understanding the cost of each provider is crucial for their future sustainability and business models. E.g. EOSC Core, Exchange**
- iii. **Collecting and sharing different approaches** (around methodologies and cost models) across Europe could provide value to the EU or national actors?
  - i. **Very positive!** Can contribute to **transparency** and better **understanding by funders!**
- iv. **Business model and sustained funding?**
  - i. Most say that they are working in this direction!

### 5. Other points :

- a) Main **barriers/obstacles** for cross-e-Infra activities?
  - i. Different legal and funding environments, dependencies on projects
  - ii. Administrative barriers rooted in the funding of resources that govern their usage
  - iii. Fragmented environment (many e-Infras/services), different types of actors (from network, to hard core computing, to scholarly communication), different priorities/policies, lack of long-term technical support and funding for customization of existing solutions
  - iv. Different or lack of common/coordinated business models
- b) **Other areas affected by coordination?**
  - i. **Integrated, easy-to-use services**; Increased speed of adoption; Common outreach towards communities; Cost savings; **Joint R&D programmes** for new services introduction
  - ii. Common challenge for all e-Infrastructures: **Talent shortage**, keeping high-talented personnel (lower salaries compared to industry)



# e-IRG White Paper 2022

Coordination at EU level

## Proposed approach:

- From analysis but also EGI Conference plenary (GEANT, EGI, EUDAT, OpenAIRE, EuroHPC): **More structured/framed approach needed!**
  - **e-Infra Forum is favoured**; lightweight structure, progressive approach
  - **Who**: Answers indicate interest from GEANT, EGI, EUDAT and OpenAIRE and PRACE.
- **e-IRG White Paper 2022** draft to be discussed here, closed meeting between e-Infrastructures and at e-IRG meeting
  - It will include some recommendations (ongoing)
  - Contributions from e-Infrastructures to be included as annexes
- **Wrap-up by the end of the year/beg of next year?**

# e-IRG White Paper 2022

## Preliminary Conclusions:

- Cooperation and coordination is required across federation chain:
  - Institutional/National (/Regional)/EU
- e-Infrastructures willing to start with **e-Infrastructure umbrella Forum** for coordination and strategy setting
- e-Infrastructures may need to go **beyond the vested interests and comfort zones?**
  - **Ultimately, this will benefit the end users**
- Is federation enough, or start talking about some more integration by 2030?
  - A personalized dashboard for end users integrating all data and services (EU, regional, national, institutional) can bring this vision to reality
- ***White Paper 2022 recommendations after feedback/“brewing process”***

# Thank you!

▪ Questions?



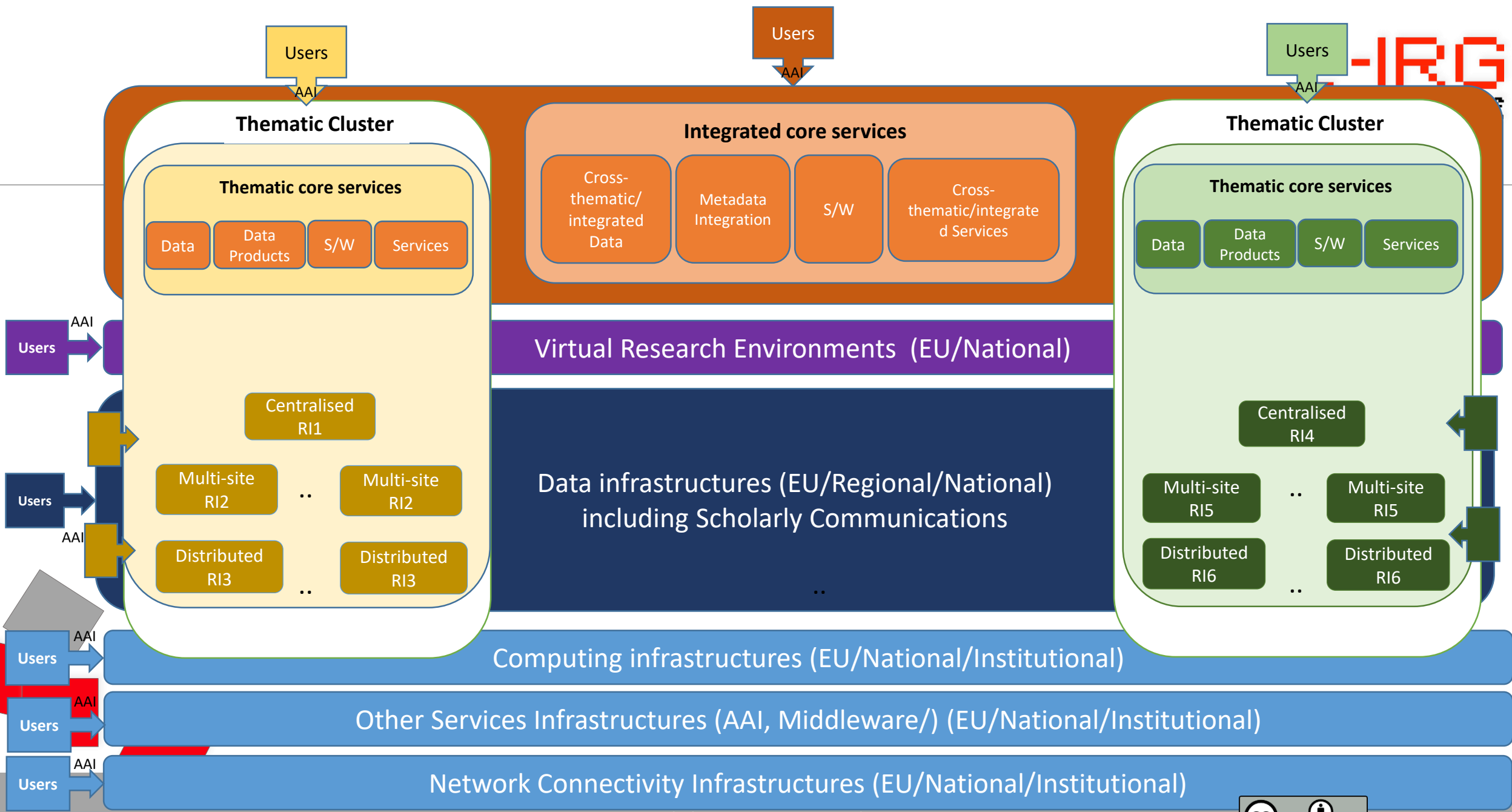
[@eirgeu](https://twitter.com/eirgeu), [#eIRG](https://twitter.com/eirgeu)

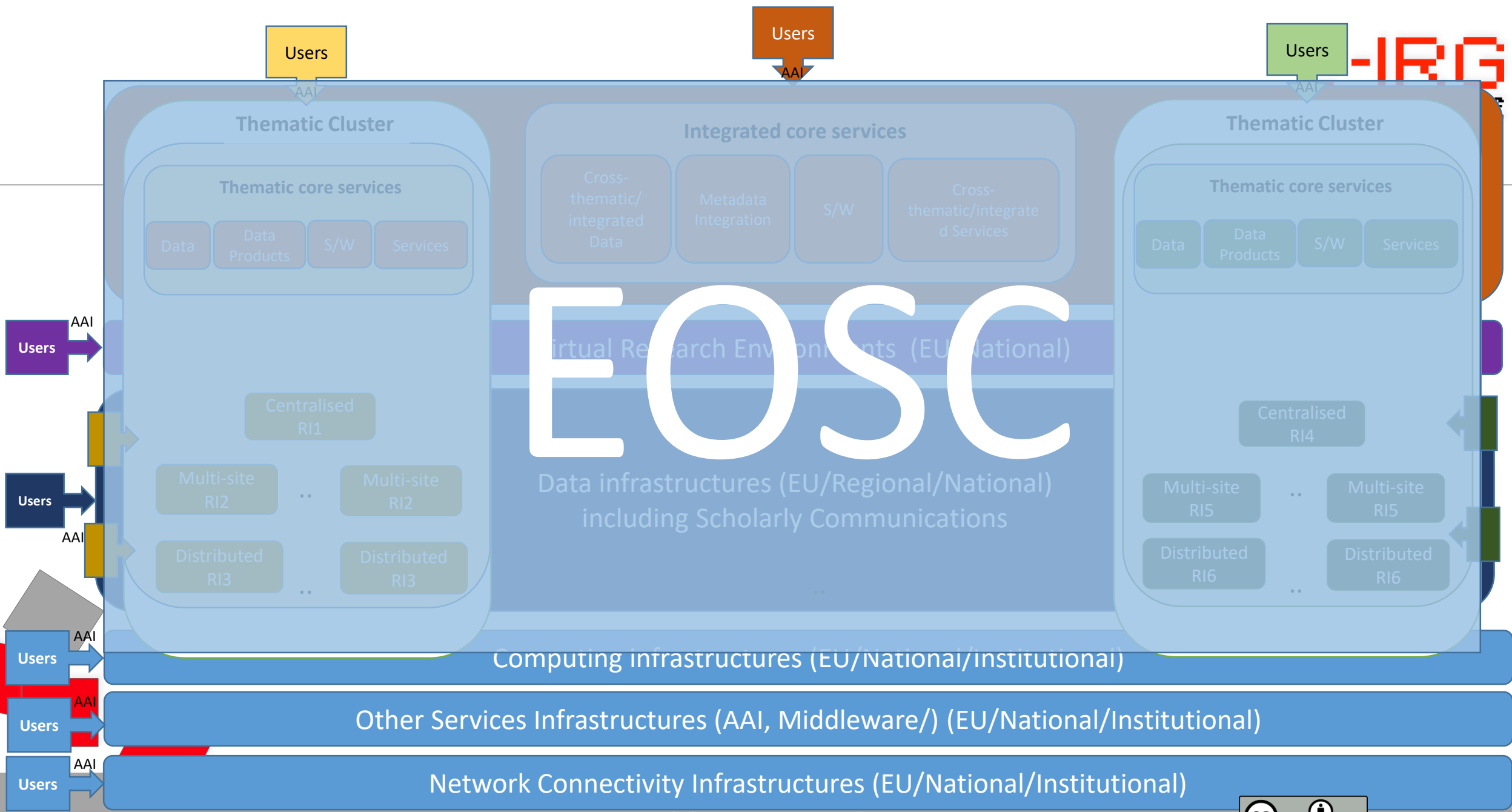
[e-IRG community](https://zenodo.org/communities/e-irg)



[www.e-irg.eu](http://www.e-irg.eu)







# EOOSC

The end user enjoys a **personalised dashboard integrating ALL services data and scholarly material** (incl. papers, software) necessary for her/his work

- Thematic (vertical), European, regional or national
- Generic (horizontal), European, regional or national

The user logs in with her/his credential (**AAI**-Authentication and Authorization Infrastructure) and accesses the personalised environment

When the user is looking for new services/datasets, the system recommend relevant services/datasets available (**Artificial Intelligence**)

The system should include the number of downloads, ratings and comments (as with modern marketplaces)

*Note: This is different from a single portal for everybody*