



EOSC SYMPOSIUM
14-17 November 2022



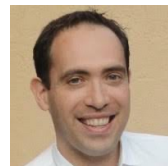
Coordination and cooperation among e-Infrastructures

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



[@fkarayan](#)

e-Infrastructure Reflection Group (e-IRG)



- Trans-national, cross-sectoral engagement since 2003
 - e-IRG is a self-regulated and independent **policy advisory body**
 - Composed of national delegates nominated by research-related ministries
 - Independent body with a consensus-based decision-making process (see <http://e-irg.eu/bylaws>)
 - e-IRG advises national authorities and the EC on electronic Infrastructures (**e-Infrastructures**)
 - Networking-, Computing-, Data Infrastructures and related services (middleware/AAI, software, tools, etc.)
 - On national and international initiatives of EU significance

e-IRG Mission and Vision

Vision:

- ***To facilitate integration** in the area of EU **e-Infrastructures and connected services**, within and between Member States, at the EU level and globally*

Mission:

- *To support both coherent, innovative and strategic European e-Infrastructure **policy-making** for convergent and sustainable e-Infrastructure services*

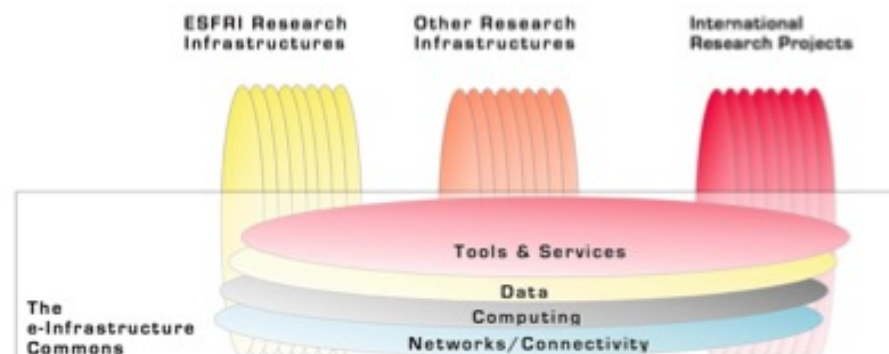
<http://e-irg.eu/about> <https://zenodo.org/record/5567014>

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

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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 
- **Still coordination across all major EU players is in an early stage**

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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 the disciplinary or cross-disciplinary research, not on the infrastructures and 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.*

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Coordination at EU-level

Process:

- Dedicated meeting with **EC** (DG Connect and DG RTD) in Dec '21
- Established informal link with **EOSC Steering Board**
- Organised related sessions at May '22 e-IRG workshop under French 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
 - GEANT, PRACE, EOSC Steering Board, EUDAT, OpenAIRE, EOSC-A, EGI

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Questions brief analysis(1)

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

- a. How does the European e-Infrastructure organisation/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. The vast majority of answers received so far 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 upcoming ESFRI instrument on EOSC. Also get advice from ERAC.
 - iii. Some form of **representation of users** is also favoured, possibly advisory and domain-agnostic/neutral (however this is not easy)
- 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**..

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, but possibly a bit later
- 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.

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Questions brief analysis (3)

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!**
- f. Coordination with **industry** (e.g. GAIA-X)?
 - i. Mixed answers, some positive, some negative (not a priority)
- i. Other?
 - i. Yes, need for **a cross e-Infrastructure helpdesk for technical support and joint training capacity planning**

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-Infrastructures, is there a common cost model/methodology across the national components?
 - i. Mixed answers, some ongoing efforts but more work required.
- ii. *Collecting and sharing different approaches* (around methodologies and cost models) across Europe could provide value to the EU or national actors?
 - i. **Very positive!**
- iii. *Business model and sustained funding?*
 - i. Most say that they are working in this direction!

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Questions brief analysis (4)

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?**

- i. Common challenge for all e-Infrastructures: Talent shortage, keeping high-talented personnel (lower salaries compared to industry)
- ii. Ease of use / user-friendly services / Joint research and development programmes for innovative services

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Coordination at EU level

Current status and next steps:

- EGI Conference session with e-Infrastructures GEANT, EGI, EUDAT, OpenAIRE, EuroHPC: **proposal to start with a lightweight forum**
- **Analysis** of questionnaire answers ongoing
- Analysis to be presented at **e-IRG White Paper 2022** by Dec'2022
 - It will be authored by e-IRG and include some recommendations
 - Contributions from e-Infrastructures to be included as annexes
- **Next e-IRG Workshop** here in Prague: 12-13 December 2022 (Hotel Vienna House Diplomat) [e-IRG Workshop under Czech EU Presidency](#)
 - One session on coordination and the White Paper finalisation

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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 planned to be concluded by the end of the year!***

Thank you!

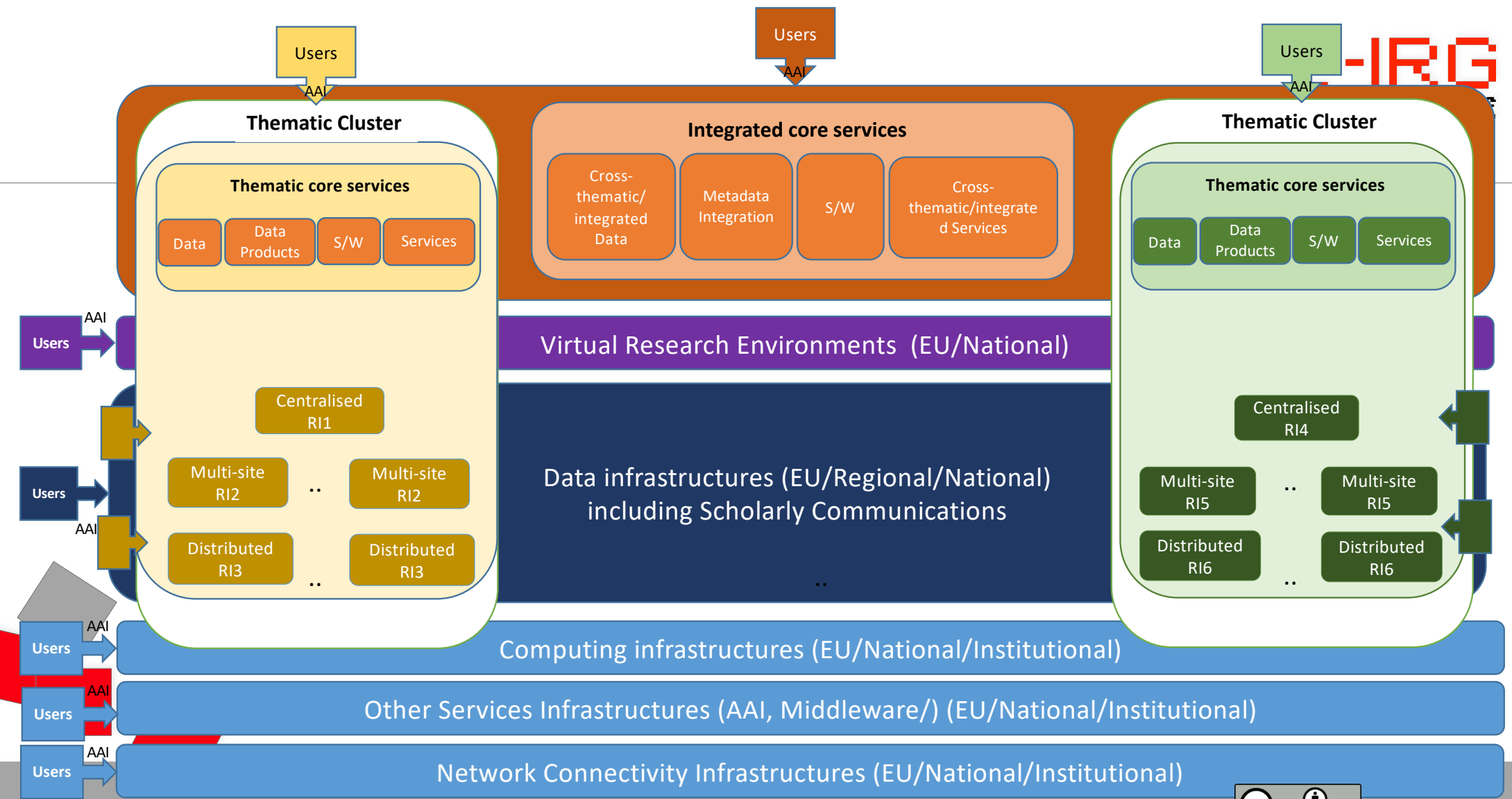
■ Questions?

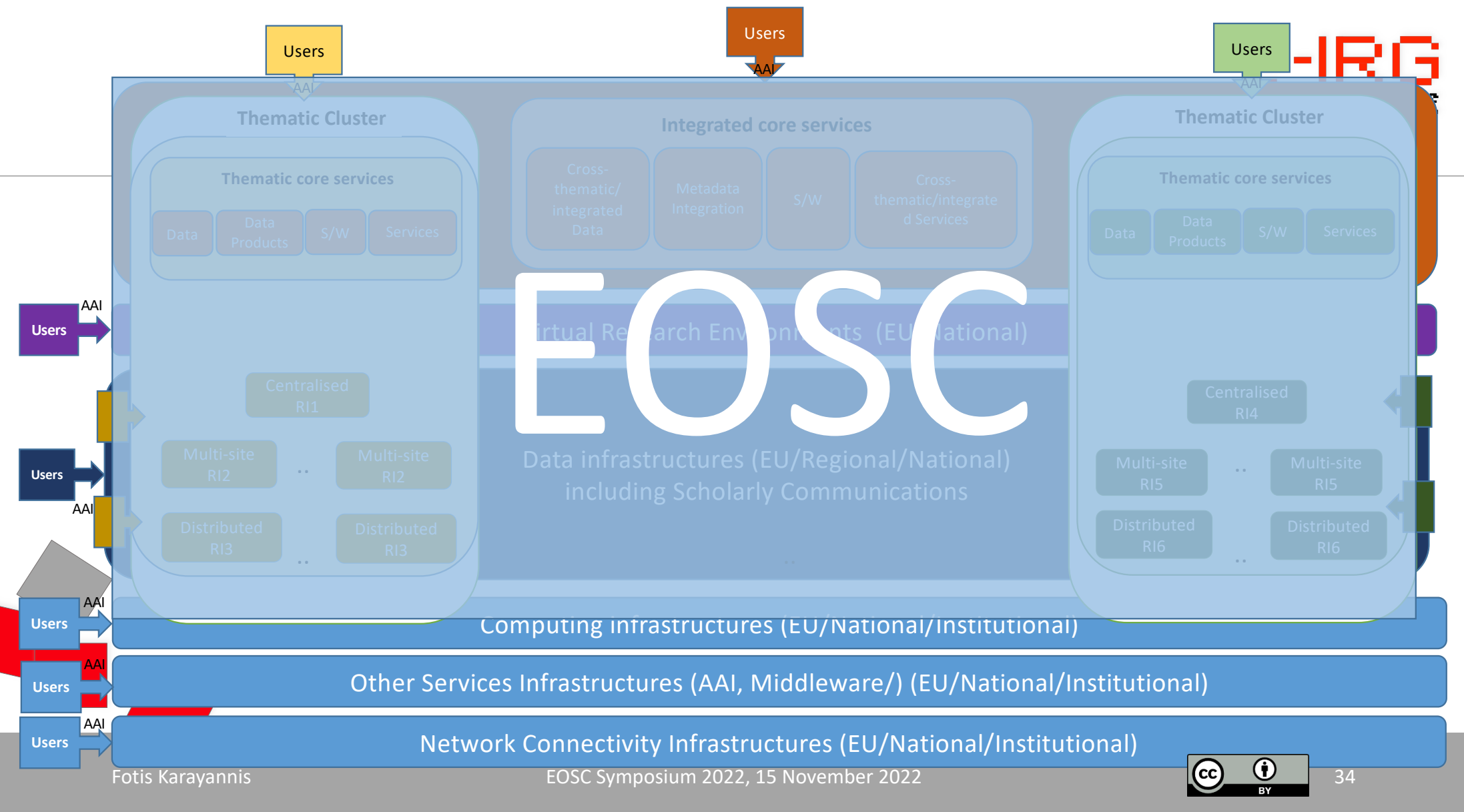
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 [e-IRG community](https://zenodo.org/communities/e-irg-community)



www.e-irg.eu







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