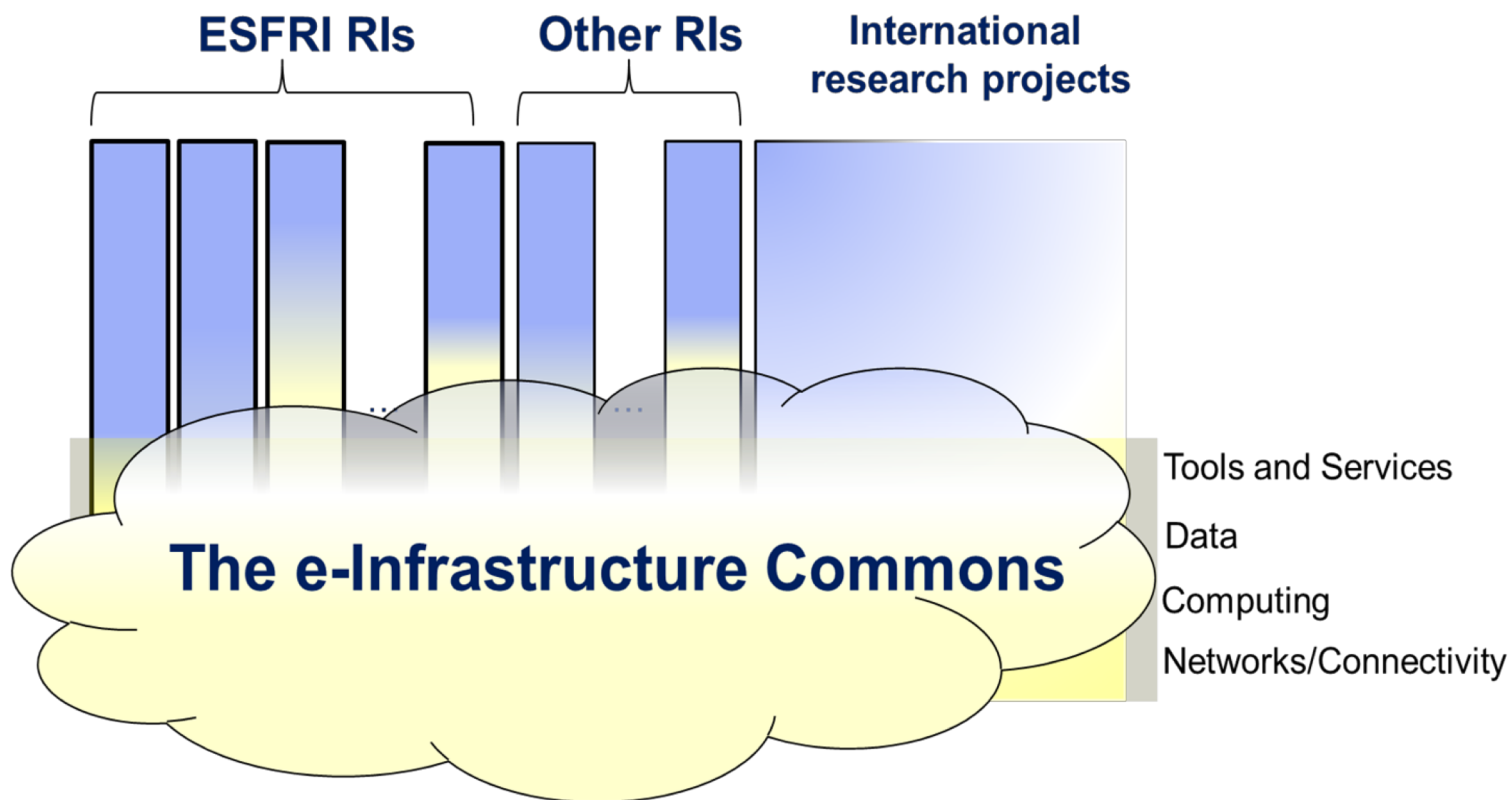e-IRG Special Edition Workshop

National Nodes as foundation for the EOSC

Arjen van Rijn

Vienna, 21st November 2018

e-Infrastructure Commons (→ EOSC)

e-IRG Roadmap 2016

Two recommendations are directed at national governments and funding agencies. They should reinforce their efforts to:

- *embrace e-Infrastructure coordination **at the national level** and build strong national e-Infrastructure building blocks, enabling coherent and efficient participation in European efforts, especially in alignment with the FAIR principles concerning data and services;*

- *together analyze and evaluate their national e-Infrastructure funding and governance mechanisms, identify best practices, and provide input to the development of the European e-Infrastructure landscape.*
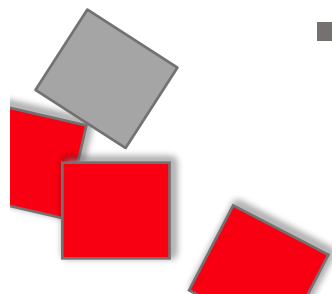
Competitive Council (28/29 May 2018)

"AGREES that the EOSC model should be based on a pan-European *federation* of data infrastructures in order to be flexible and adaptable to changing needs of the stakeholders;

with regard to enabling this federation of national and European data infrastructures, ENCOURAGES *Member States* to invite their relevant communities, such as *e-infrastructures, research infrastructures*, Research Funding Organisations (RFO's) and Research Performing Organisations (RPO's), to *get organized* so as to prepare them for connection to the EOSC and

CALLS ON the Commission to make optimal use of ongoing projects, existing expertise and knowledge available via existing initiatives, such as **ESFRI, eIRG, GO FAIR** and others;"

The e-IRG National Nodes Working Group

A Working Group with the goal to:

- Analyze the current status in EU countries and
- Develop recommendations/name good practices towards national e-Infra Commons, to ease integration at EU level

Process:

- Questionnaire via e-IRG members on the
  - organization of national e-Infrastructures (including data infrastructures)
  - coordination for national horizontal (generic) e-Infrastructures
 - domain-specific e-Infrastructure
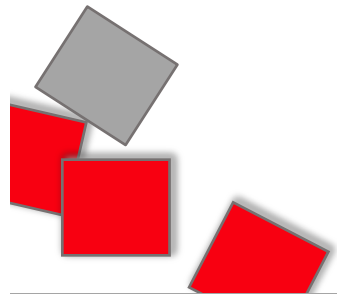
Questionnaire (1/2)

Focus on organisations, governance, funding, access policies for e-Infrastructures (or its components) in your country (~ 2 A4 pages).

- Describe which organisation or organizations have been given the **responsibility on the national level** for provisioning e-infrastructure services in your country.
  - if the answers contains multiple organizations, describe (if applicable) how these organizations coordinate their activities amongst themselves.

- Describe the **governance of this organization/these organizations** (such as: legal entity, composition of board or council, representation of stakeholders, such as universities, research infrastructures, funding agencies, etc.).

Questionnaire (2/2)

- Describe how this **organization/these organizations are funded** (main funding streams, such as ministries, research councils, grants, subsidies, third parties (industrial, other), membership contributions, user contributions, etc.).

- Describe the **access policies** of this organization/these organizations, including any **legal restrictions** in using the e-infrastructure.

- Please list **national domain-specific e-Infrastructures** or other domain areas of particular interest in the country (e.g. ELIXIR nodes) and include whether they use the horizontal e-Infrastructures
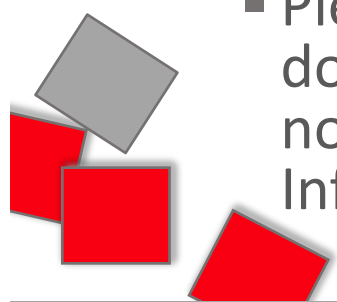
Responses

Responses
from
27 countries
Turkey will
provide answers
soon

Preliminary outcomes

Final document will be
endorsed in the e-IRG
delegates meeting in
March 2019.

PreRead will be
available before
Christmas.
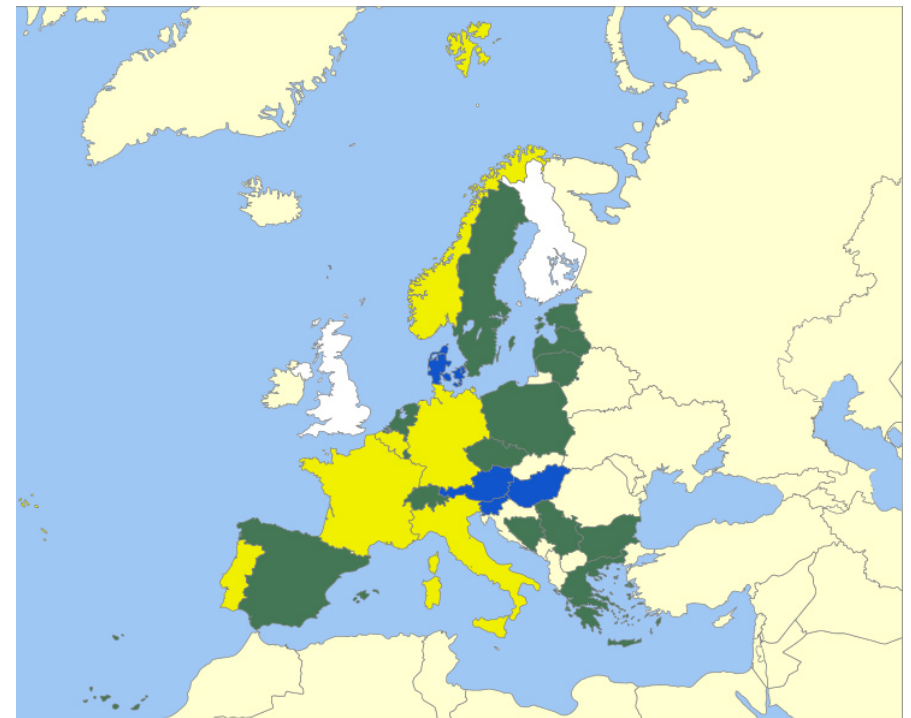
Number of e-infra provider organizations

- Classification of countries according to the number of e-infrastructure provisioning organizations

    Blue = 1 provider

    Green = 2-3 providers

    Yellow = more providers
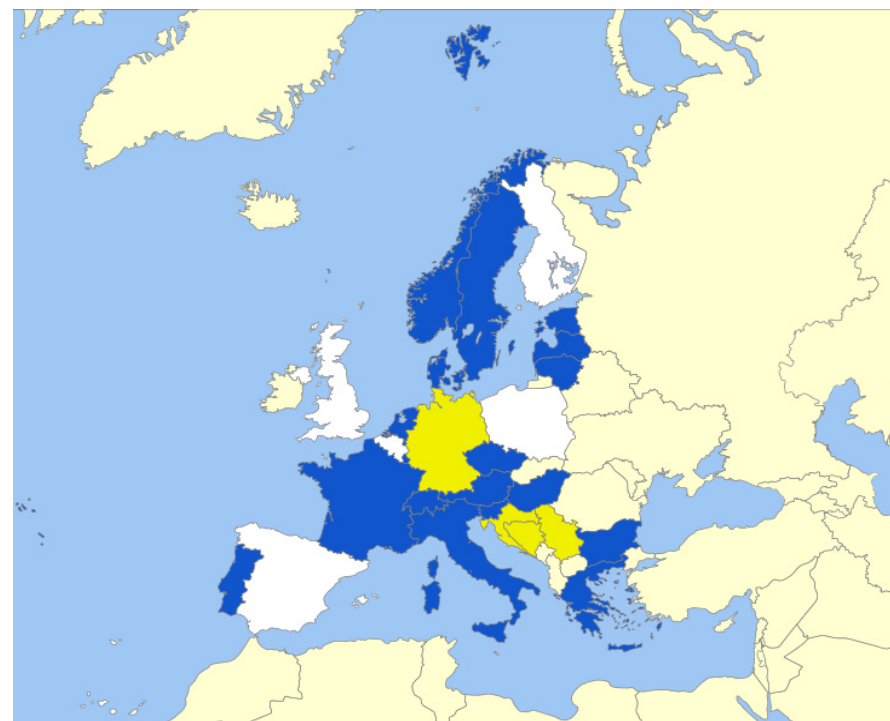
    White = unclear replies

Coordination between e-infras

- **Classification of countries according**

  to close coordination (or single provider) or loose coordination amongst e-infrastructure providing organizations
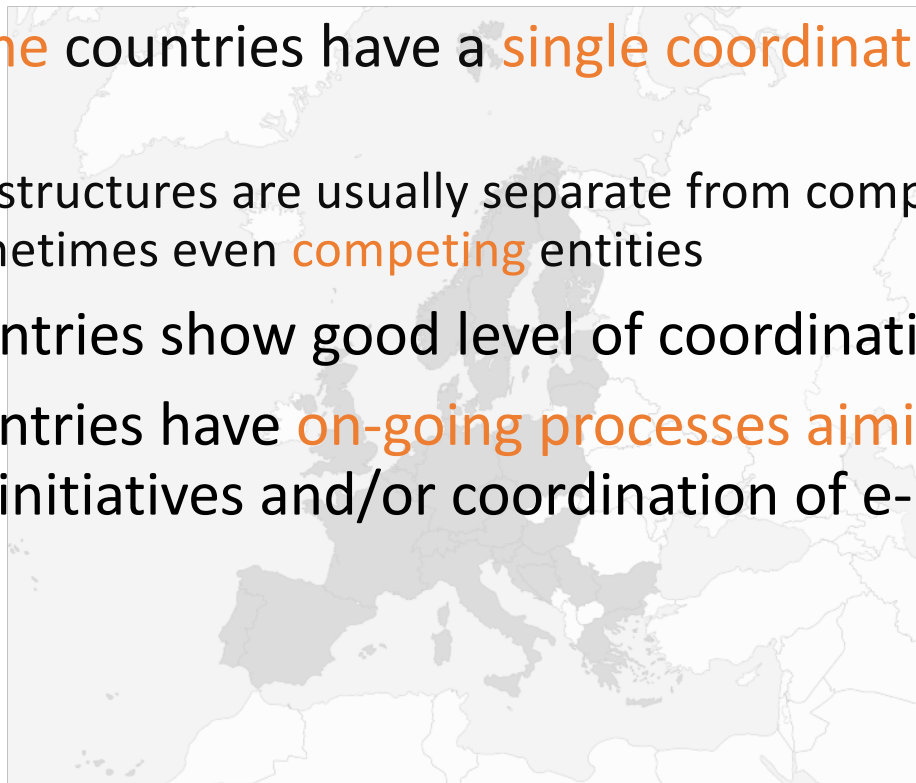
  Blue = Close coordination

  Yellow = Loose coordination

  White = unclear replies

Preliminary conclusions on coordination

- Today some countries have a single coordinating e-Infra service entity
  - data infrastructures are usually separate from computing and networking ones; sometimes even competing entities
- Many countries show good level of coordination
- Some countries have on-going processes aiming at coordination of e-Infra initiatives and/or coordination of e-Infras and domain RIs
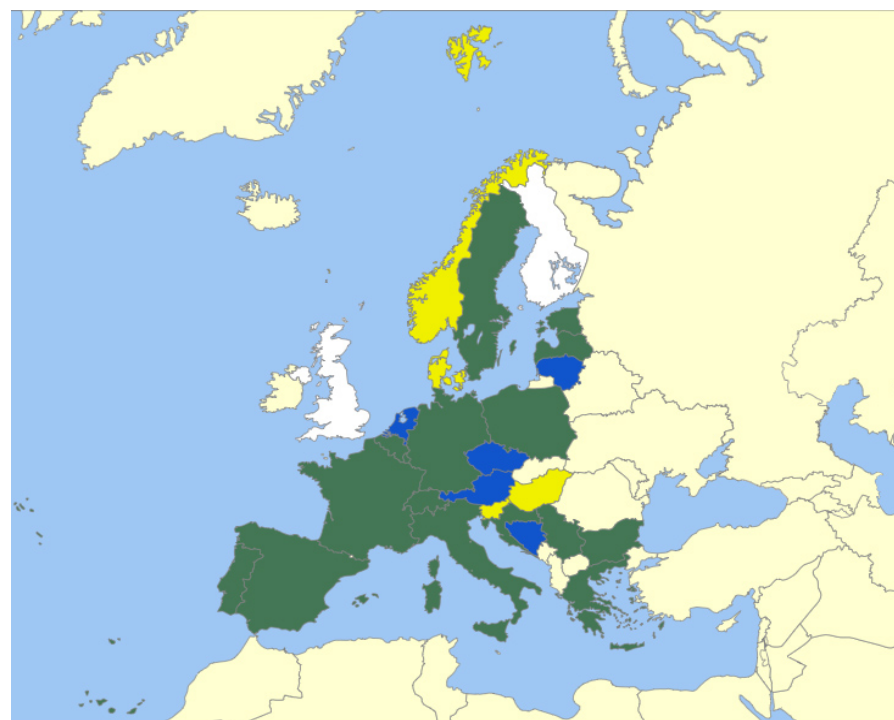
Preliminary outcomes on governance

- Governance according to ownership of the governing body characteristics of the e-infrastructure providing organizations *in general*

  Blue = Research Inst., Univ., Users

  Yellow = Ministry

  Green = Mixed case

  White = unclear replies

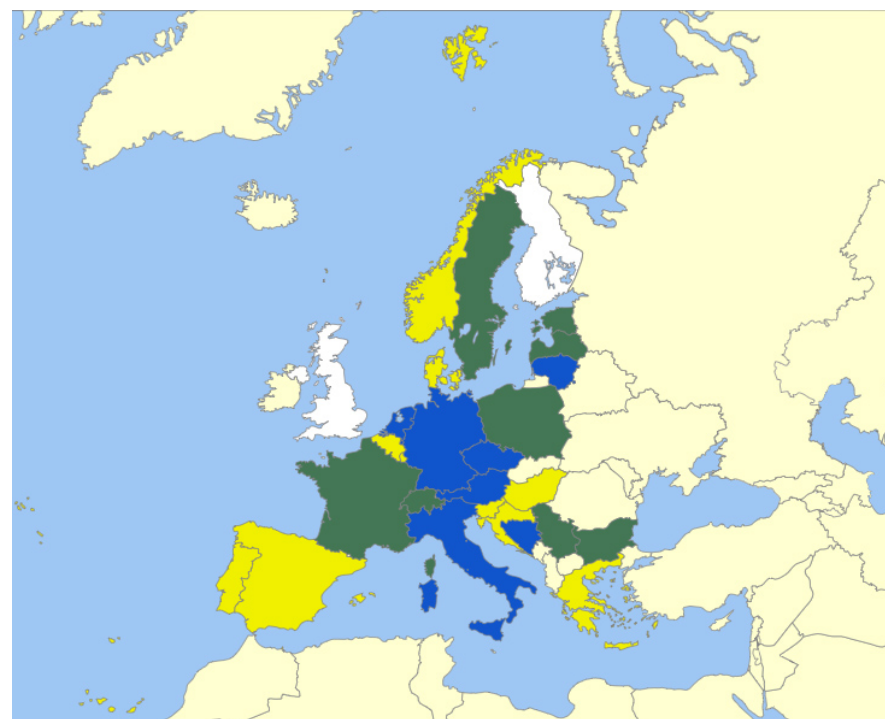# Preliminary outcomes on governance

- Governance according to ownership of the governing body characteristics of the *network e-infrastructure* providing organizations

  Blue = Research Inst., Univ., Users

  Yellow = Ministry

  Green = Mixed case

  White = unclear replies

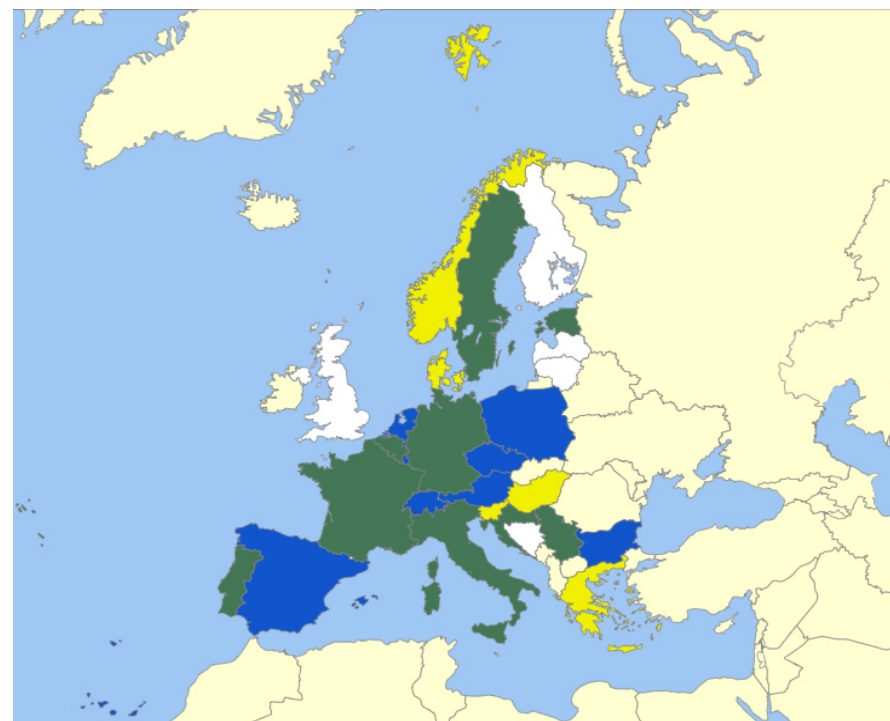# Preliminary outcomes on governance

- Governance according to ownership of the governing body characteristics of the *HPC e-infrastructure* providing organizations

  Blue = Research Inst., Univ., Users

  Yellow = Ministry

  Green = Mixed case

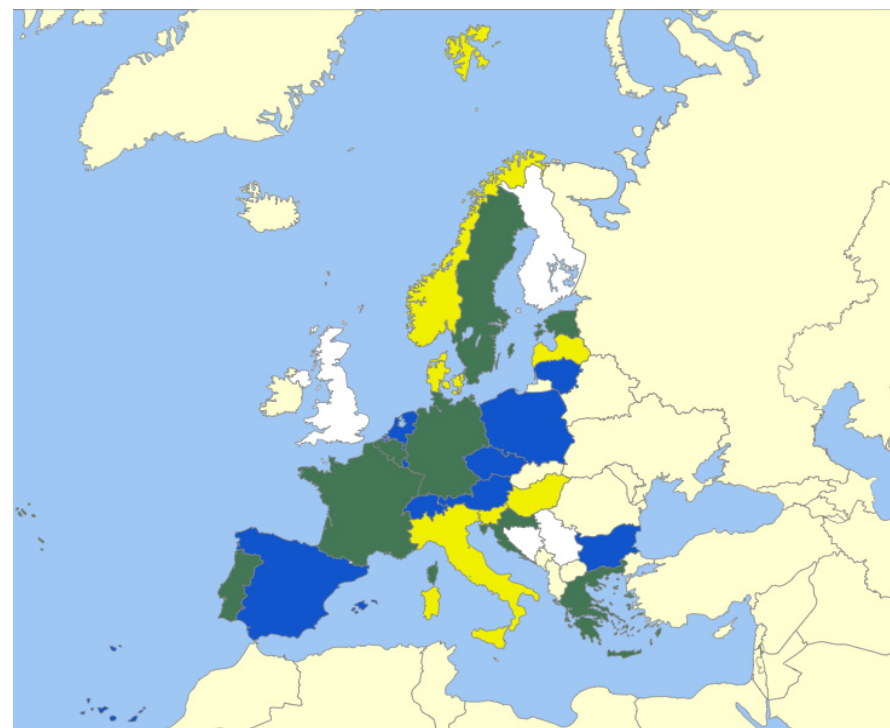 White = unclear replies

Preliminary outcomes on governance

- Governance of countries according to ownership of the governing body characteristics of the *Data e-infrastructure* providing organizations

  Blue = Research Inst., Univ., Users

  Yellow = Ministry

  Green = Mixed case

  White = unclear replies

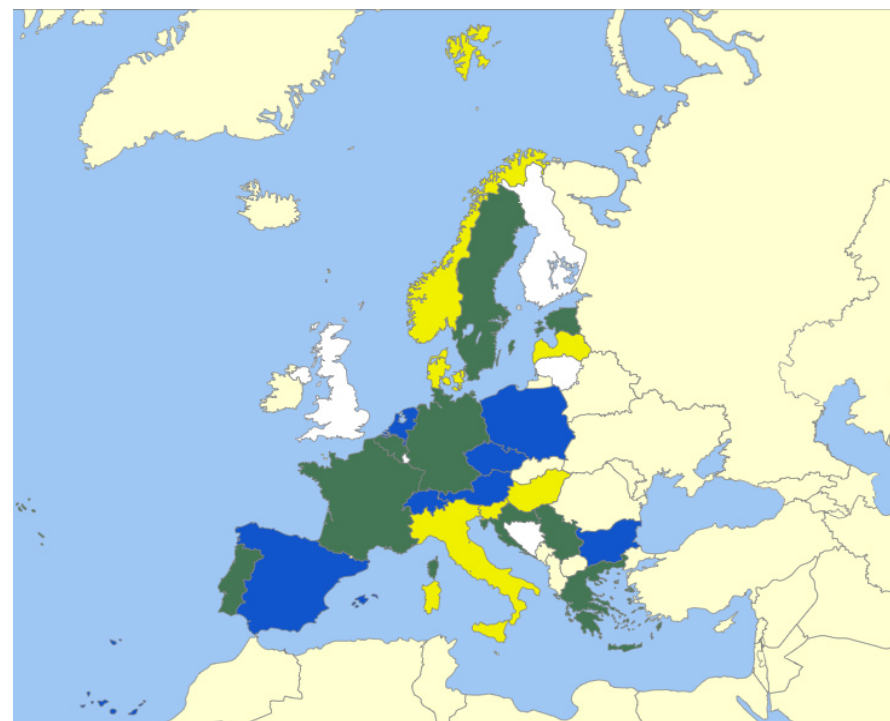# Preliminary outcomes on governance

- Governance of countries according to ownership of the governing body characteristics of other *services e-infrastructure* providing organizations

  Blue = Research Inst., Univ., Users

  Yellow = Ministry

  Green = Mixed case

  White = unclear replies
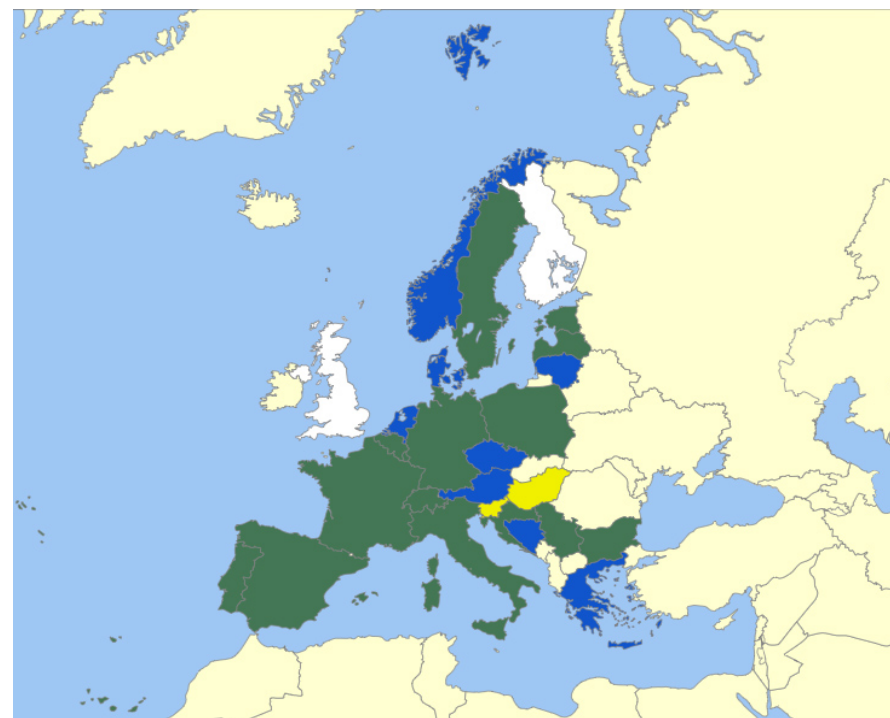
Preliminary outcomes on governance

- Governance according to day-to-day management of the governing body characteristics of the e-infrastructure providing organizations *in general*

  Blue = Research Inst., Univ., Users

  Yellow = Ministry

  Green = Mixed case

  White = unclear replies
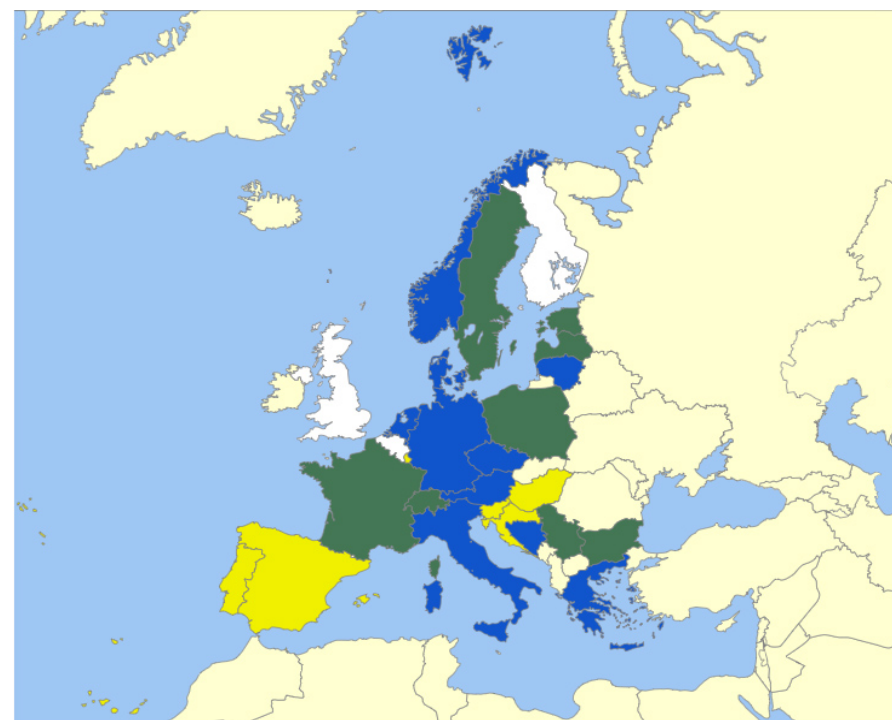
Preliminary outcomes on governance

- Governance according to day-to-day management of the governing body characteristics of the *network e-infrastructure* providing organizations

  Blue = Research Inst., Univ., Users

  Yellow = Ministry

  Green = Mixed case

  White = unclear replies
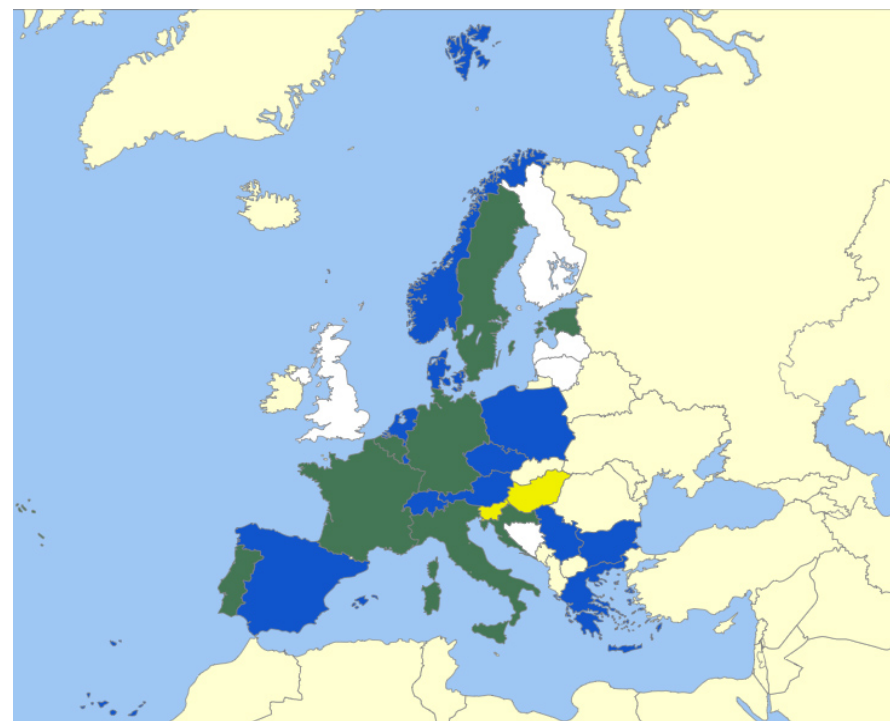
Preliminary outcomes on governance

- Governance according to day-to-day management of the governing body characteristics of the *HPC e-infrastructure* providing organizations

  Blue = Research Inst., Univ., Users

  Yellow = Ministry

  Green = Mixed case

  White = unclear replies
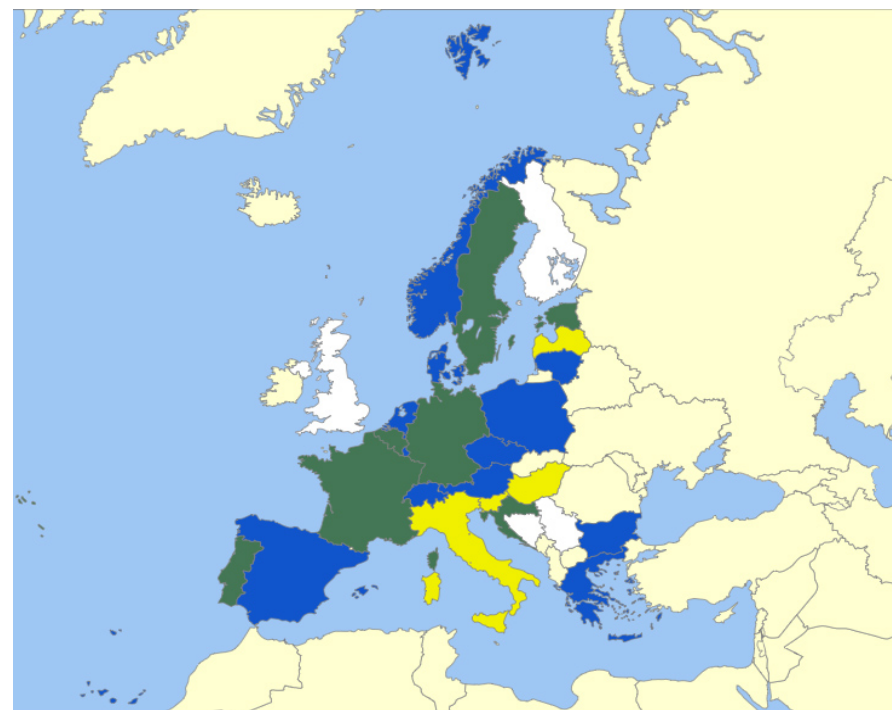
Preliminary outcomes on governance

- Governance of countries according to day-to-day management of the governing body characteristics of the *Data e-infrastructure* providing organizations

    Blue = Research Inst., Univ., Users

    Yellow = Ministry

    Green = Mixed case

    White = unclear replies
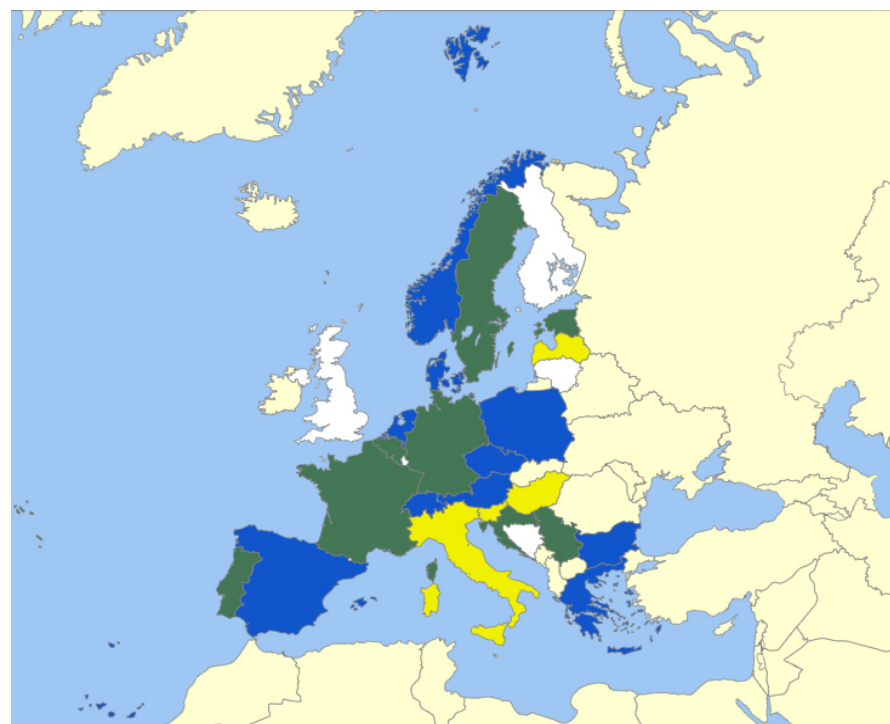
Preliminary outcomes on governance

- Governance of countries according to day-to-day management of the governing body characteristics of other *services e-infrastructure* providing organizations

    Blue = Research Inst., Univ., Users

    Yellow = Ministry

    Green = Mixed case

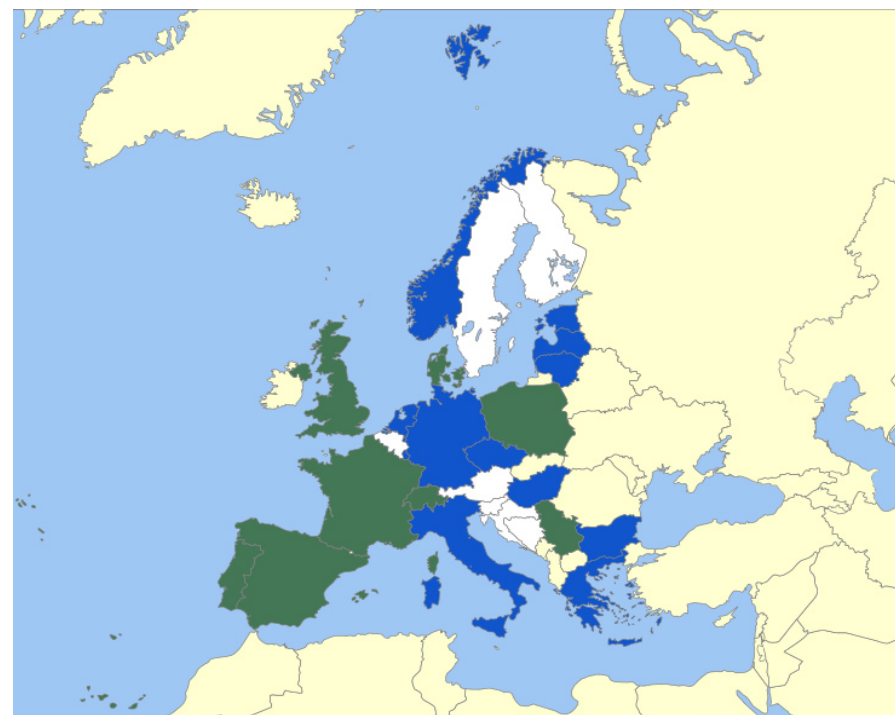   White = unclear replies

Horizontal - vertical interface

- Use of horizontal e-infra by domain specific e-infra:

    Blue = clear use

    Green = mixed cases

    White = unclear replies

Some observations (1)

- Large variety in governance and involvement of stakeholders (ministries, research funders, universities, research communities)

- Network type e-infrastructure is quite different compared to HPC, Data or Services type of e-infrastructures in governance

- HPC, Data or Services type of e-infrastructures have similar governance models in most countries

- A few countries have good data access policies

- Access to resources (especially computing and storage) is mostly national
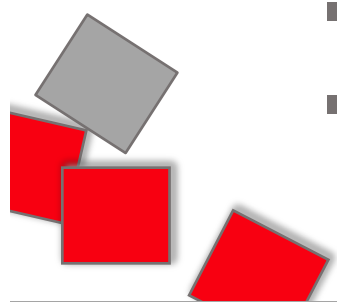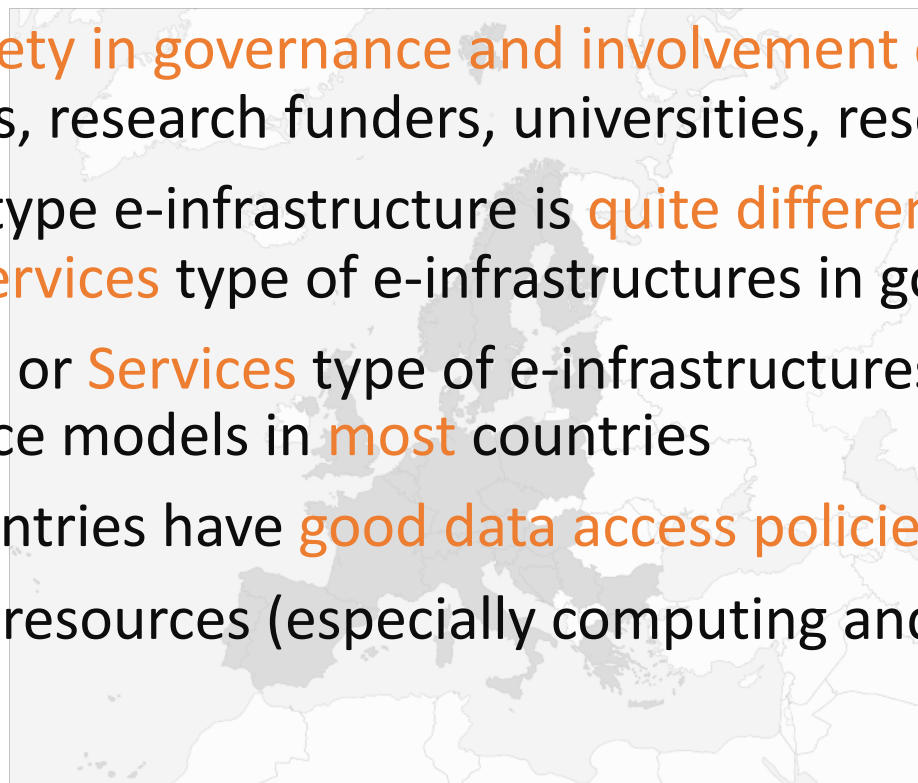
Some observations (2)

- In every country there is some level of re-use of horizontal e-infrastructures for their own domain-specific ones (most notably for the network).

- Half of the countries report having some level of coordination between domain-specific e-infrastructures and horizontal ones.

- Some countries describe interesting mechanisms to channel funding streams to horizontal e-infrastructures, with involvement of research communities.

We need to extract the good practices …

Conclusion

From e-IRG response to Staff Working Document on implementation of the EOSC:

"For e-IRG the concept of the European Open Science Cloud is an instantiation of the e-Infrastructure Commons as proposed by e-IRG in our 2013 White Paper and 2016 Roadmap, also adding more clearly the aspects of Open Science. From the point of view of provisioning EOSC services, the **challenges will reside on the interface between discipline specific (vertical) and generic (horizontal) infrastructures**.

Horizontal infrastructures (e-infrastructures) have the potential of being efficient and effective, pooling hardware and software but more importantly people and expertise together instead of building disciplinary pillars. In the long run e-IRG believes that strong horizontal infrastructures will serve the ultimate goal of the EOSC, *offering professionals in science and technology a virtual environment with free at the point of use, open and seamless services for storage, management, analysis and re-use of research data, across borders and scientific disciplines.*"

- Good governance, funding mechanisms and coordination are mandatory for an efficient, effective and sustainable EOSC.
- Data may serve as the common currency between e-Infras & RIs.
- Ultimately goal: easy access for researchers to all services integrating compliant services from all providers; to become a marketplace.
- The national building blocks are key for its success.

Thank you!

For further information see e-irg.eu

Special thanks to all e-IRG delegates contributing to this presentation,

as well as the support project (e-IRGSP5) for performing the analysis.

e-IRG is supported by e-IRGSP5

http://e-irgsp5.e-irg.eu