The Landscape of e-Infrastructures and how the ESFRI projects impact on it

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e-Infrastructure

e-Infrastructures includes

• Networks/Connectivity
• Computing (high performance computing (HPC), throughput computing, distributed computing, …)
• Data (storage, FAIR data, archiving, …)
• Tools and services

Note the wide ("horizontal") scope: e-Infrastructure is needed to support all types of research and other research infrastructures
e-Infrastructure is everywhere...

Research infrastructures and research collaborations produce an...

• … explosion of digital data ...
• … which is should be made widely available ...
• … to be analyzed using rapidly developing computer systems and e-science tools and techniques
The European e-Infrastructure landscape

- Pan-European e-Infrastructure for research (e-RIs) (all types), other research infrastructures (all types), innovation, education, ...
  - Networks GEANT
  - Computing and Data PRACE, EGI, EUDAT, GEANT, Helix Nebula, OpenAIRE (all in different ways)
  - Tools and Services All above (different T&S)
  - Data Sharing OpenAIRE, RDA (not an infrastructure...)

- Disciplinary e-RIs, e.g. in ESFRI projects
  - Often coordinated with the general e-RIs above at international and/or national level

- National e-RIs
  - This is where the bulk of resources and funding is!
A potential risk...

If e-Infrastructure co-ordination is not improved further, we might...

- build silos and miss opportunities for coherent basic e-Infrastructure services
- miss opportunities for cost-efficient implementation and operations
- miss opportunities for creating sustainable e-Infrastructures

This would in turn result in missed opportunities for both disciplinary and cross-disciplinary research
The e-Infrastructure Reflection Group (e-IRG)

• Self-regulated independent body of national delegates founded in 2003

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

• support both coherent, innovative and strategic European e-Infrastructure policymaking and the development of convergent and sustainable e-Infrastructure services.

• www.e-irg.eu
The e-IRG vision for the European RI/e-IR landscape

ESFRI RIs

EIROs, other RIs

International research projects

The e-Infrastructure Commons

Tools and Services
Data
Computing
Networks/Connectivity
The e-Infrastructure Commons

e-IRG recommendations in 2013: A single e-Infrastructure Commons for knowledge, science and innovation should be established ...

• through a joint effort between users, strategic actors and e-infrastructure providers, to attain an ecosystem in which …
• users enjoy the freedom to easily choose and use the services they need, so that …
• they can focus on doing of science, in (international) research collaborations.

e-IRG recommendations in 2016: Research infrastructures and research communities should reinforce their efforts to:
• elaborate on and drive their e-Infrastructure needs;
• participate in the innovation of e-Infrastructure services;
• contribute to standards and take care of their data.
In practice

• Joint ESFRI/e-IRG recommendations on data management (2013)
  • e-irg.eu/documents/10920/238805/BP-summary-policy-130227.pdf

• e-IRG Delegates in the ESFRI SWGs and Implementation Group
  • input to the ESFRI proposal format (“eNEEDS questions”)
  • review of proposals for ESFRI projects

• These e-IRG Delegates for the e-IRG “Overarching Working Group”
  • Will soon publish the document *Best Practices for the use of e-Infrastructures by large-scale research infrastructures* – to provide practical guidelines for ESFRI proposals