E-infrastructures
European Grid Infrastructure

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e-infrastructure

EGI

- European Grid Infrastructure
  - Federation of National Grid Initiatives (NGI)
  - Governed by EGI Council
    - Through EGI Executive Board
  - Coordinated by EGI.eu
    - Foundation in Amsterdam (The Netherlands)
    - Also governed by EGI Council and EGI EB
- EGI InSPIRE project (since 2010)
  - Develop and operate the infrastructure

NGI

- National Grid Initiative
  - National Coordinator of Grid activities
    - Distributed Compute and Data Infrastructure (DCDI)
  - Usually also operating some part of the national e-infrastructure
  - Representing a country in the EGI Council
- Data Intensive High Throughput Computing
  - Large scale data analysis
  - Initiated by CERN (WLCG) around 2000

Challenges 2020

- Role of the e-infrastructure
- Organization
- Users and partners of the e-infrastructure
- Financing the e-infrastructure
- National level

Roles

- E-infrastructure components
  - Network and Data transmission (Dante, Geant)
  - HTC and Data processing (EGI, EUDAT)
  - HPC (High Performance Computing, PRACE)
- General enabler in ERA
  - Neutral role towards scientific disciplines
- Challenge:
  - Overlap of e-infrastructure components

Organization

- EGI currently Foundation (Stichting)
  - NGIs and CERN founding members
- ERIC considered
  - Individual e-infra components or a whole
  - Light weight – just coordination and human capital
  - Heavy weight – includes heavy equipment
- Too differing views at this moment
  - Large differences between NGI's structure

Users and partners

- E-infrastructure as a Research Infrastructure
  - Not just “yet another service provider”
  - Extensive own development
- Proper interaction with user communities
  - Partnership and collaboration
  - Large communities vs. individual scientists
- Challenges:
  - Scientific neutrality
  - Progress “on the edge” vs. operational stability

Financing

- Direct financing
  - At national and EU levels
  - Difficult to prove usefulness
- Indirect financing
  - “Pay per use” prohibiting
  - Stability and legal concerns
- Challenge:
  - Usefulness, prioritization, cost control

National level

- The EU and national challenges very similar
- Reaction different
  - Financial models
  - Operational models
  - Resource ownership
- Challenges:
  - Combine national and international expectations
  - Proper channels to users and user communities

2020 Expectations

- Federated extensible e-infrastructure
  - Fits different national financing models
  - Sufficient resources available at the EU scale (above most powerful HPC systems)
- Application neutral
- On the edge—”true Research Infra”
- Communicate and collaborate with
  - Large communities (e.g. ELIXIR, ICOS, …)
  - Individual scientists (citizen scientists?)

Summary

- E-infrastructures have their own challenges
  - Historically different components
- Application neutrality vs. usefulness
  - "Infrastructure for everybody" does not mean "Infrastructure for nobody" (nobody cares)
- Own development vs. "serving sciences"
  - Guarantee the service
  - Guarantee the uniqueness ("on the edge")
- Proper financing models

Thank you

Any questions?