E-infrastructures
European Grid Infrastructure

Ludek Matyska
EGI Council Chair
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
• 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?