e-Infrastructures the foundation of the ERA

Bernhard FABIANEK

Bernhard.Fabianek@cec.eu.int European Commission, Information Society Directorate-General

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Research Networking



European Commission

GEANT: The Most Advanced Research Backbone







GEANT Performance Figures

Transfer Volume in the European Backbone Network before and after the introduction of **GEANT**



Interconnect Research Networks



GEANT: The Model



European Commission

Research Networks: The Model



GEANT and NRENs supporting Grids

Flexible control and sharing of distributed resources Grids

Access to them is provided in a secure, coordinated, seamless, dynamic and inexpensive way

Resources can be of any information type (computing, storage, networking, visualisation, etc)





Resources can be distributed world-wide







Virtual Research Communities





Grids: From Laboratory into Real World

Several application areas:

- Astronomy,
- High energy physics,
- **Carth and environment**,
- Industrial simulations,
- Biology, etc.







Vision: Create an e-Infrastructure



Policies

Research e-Infrastructures:

- Corner-stone of ERA
- Second Structure Structure Structure Structure Structure (e.g. broadband plus)
- "integrator" of National Infrastructures
- powerful "instrument" for International Cooperation



- With the support of the IST Programme and in the context of the eEurope action plan, a new generation backbone for research has been launched GEANT
- The EU is investing in FP6 in GRIDS, IPv6, Photonics to support highly demanding user community
- The provision of an *e*-Infrastructure is fundamental for the realisation of the European Research Area (ERA)



