e-Infrastructures:
the European way

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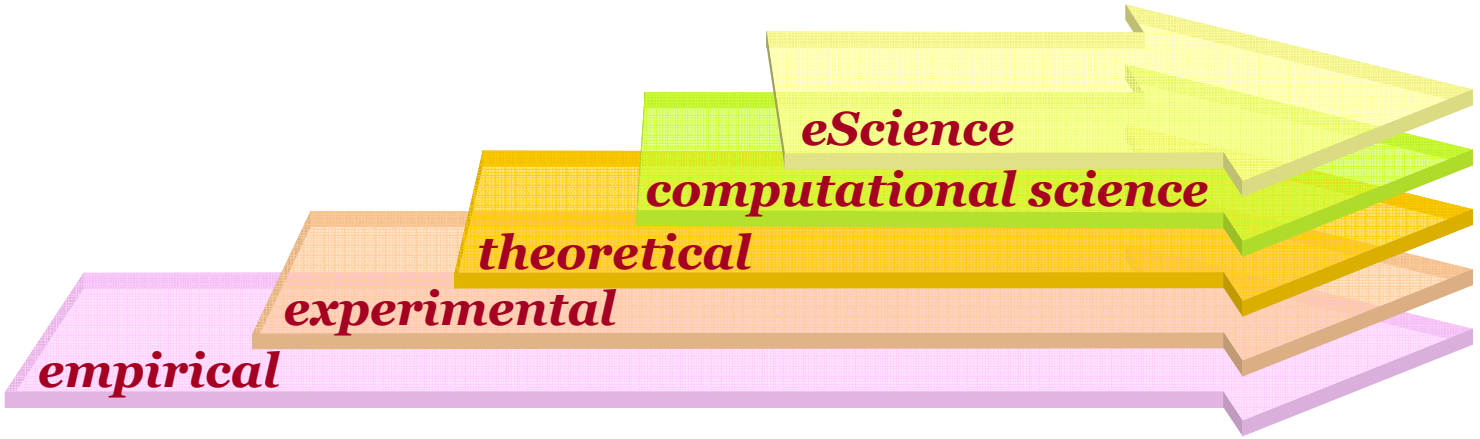
"The views expressed in this presentation are those of the author and do not necessarily reflect the views of the European Commission"

a new scientific paradigm

- Data deluge…
- Improved scientific process
- Cross-disciplinarity
- Virtual Research Communities



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ICT for Science: e-Infrastructures

Connecting the finest minds
Sharing and federating the best scientific resources
Building global virtual communities

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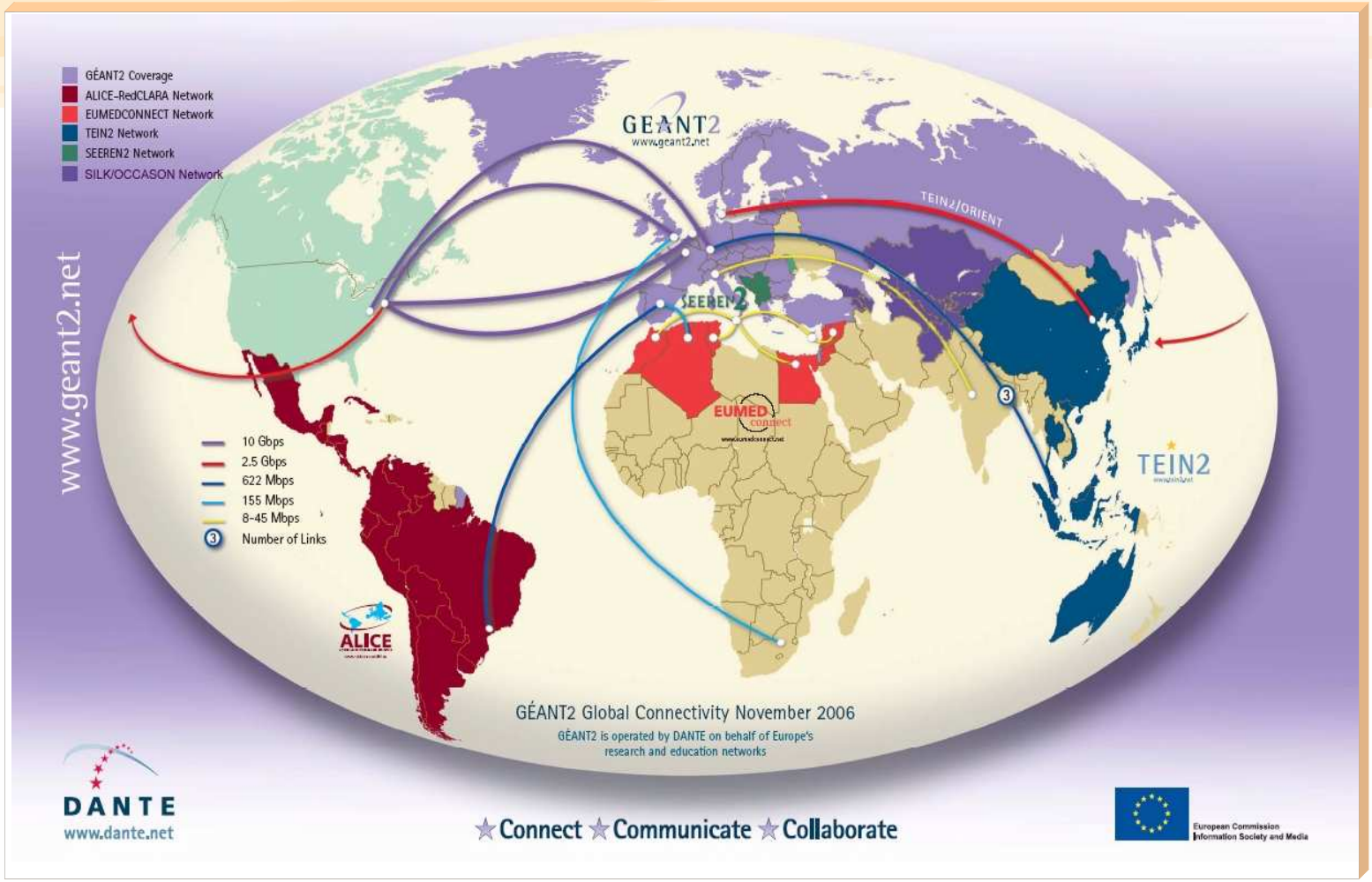
GÉANT: global reach



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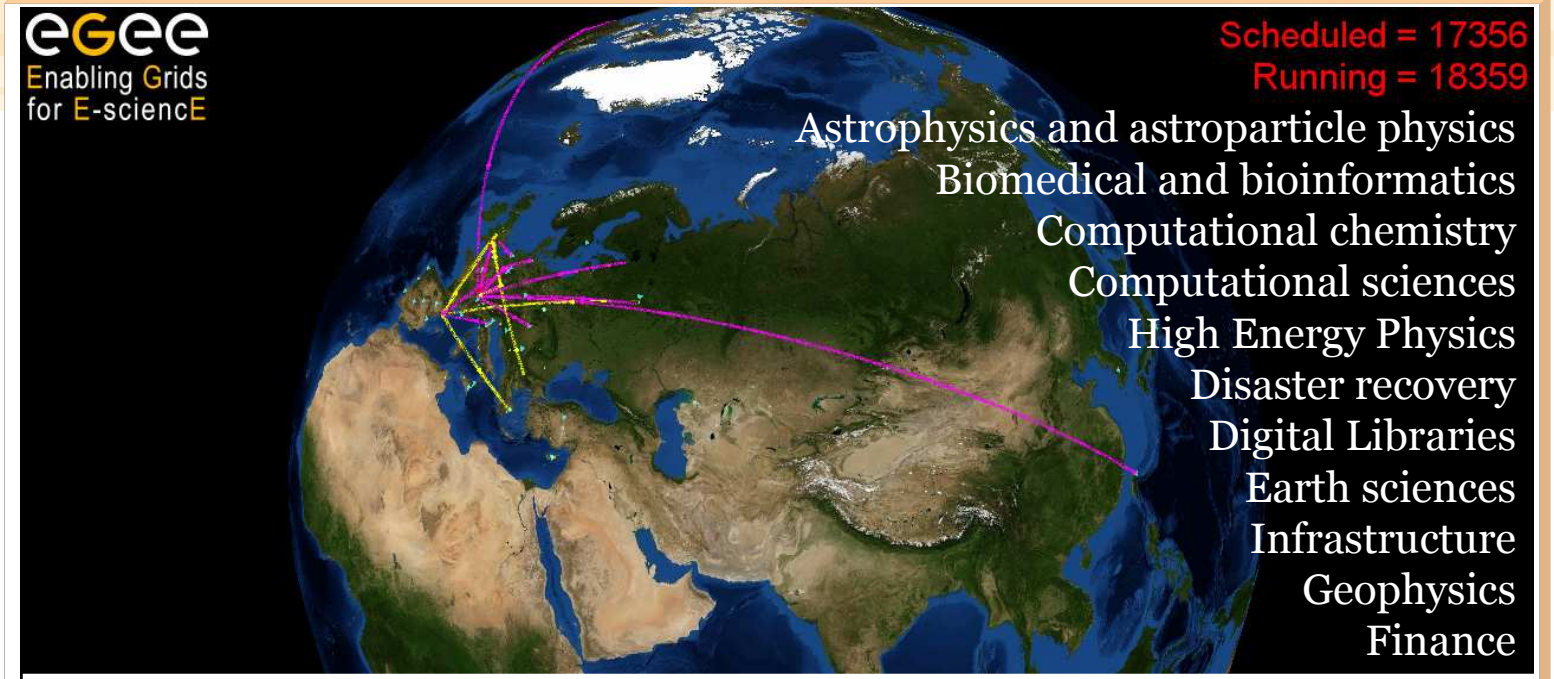
EGEE: large multi-science grids



- >240 sites
- >50 000 CPUs, 25 Pbyte of storage
- ~100 000 jobs successfully completed per day
- 200 Virtual Organisations
- >8000 registered users, representing 1000s of scientists

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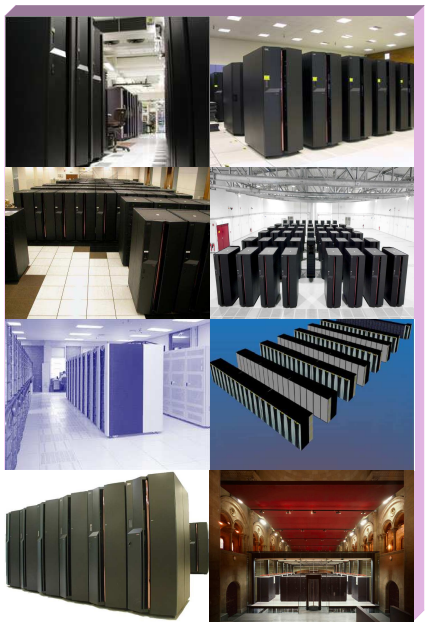
DEISA: virtual HPC services



Distributed European Infrastructure for Supercomputing Applications

- 11 sites in 7 countries connected at 10 Gb/s
- Over 22,000 CPUs sporting 200 TFlop
- Running larger parallel applications in individual sites
- Enabling workflow applications with grid technologies
- Providing a global data management service
- Extreme Computing Initiative

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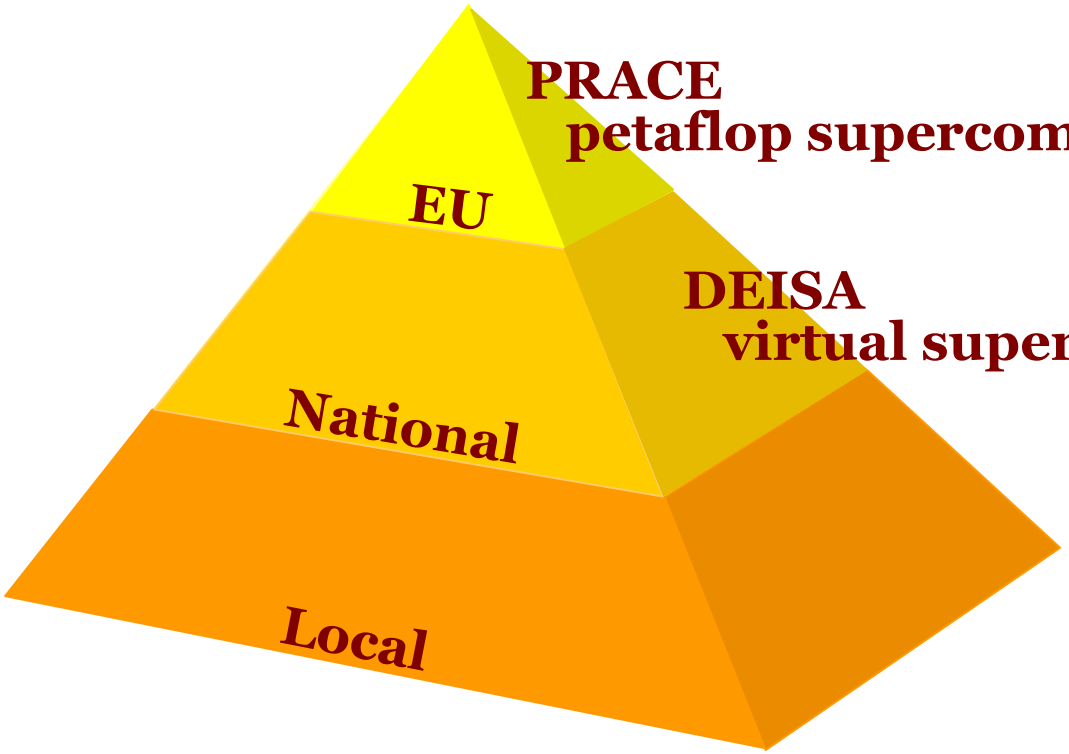
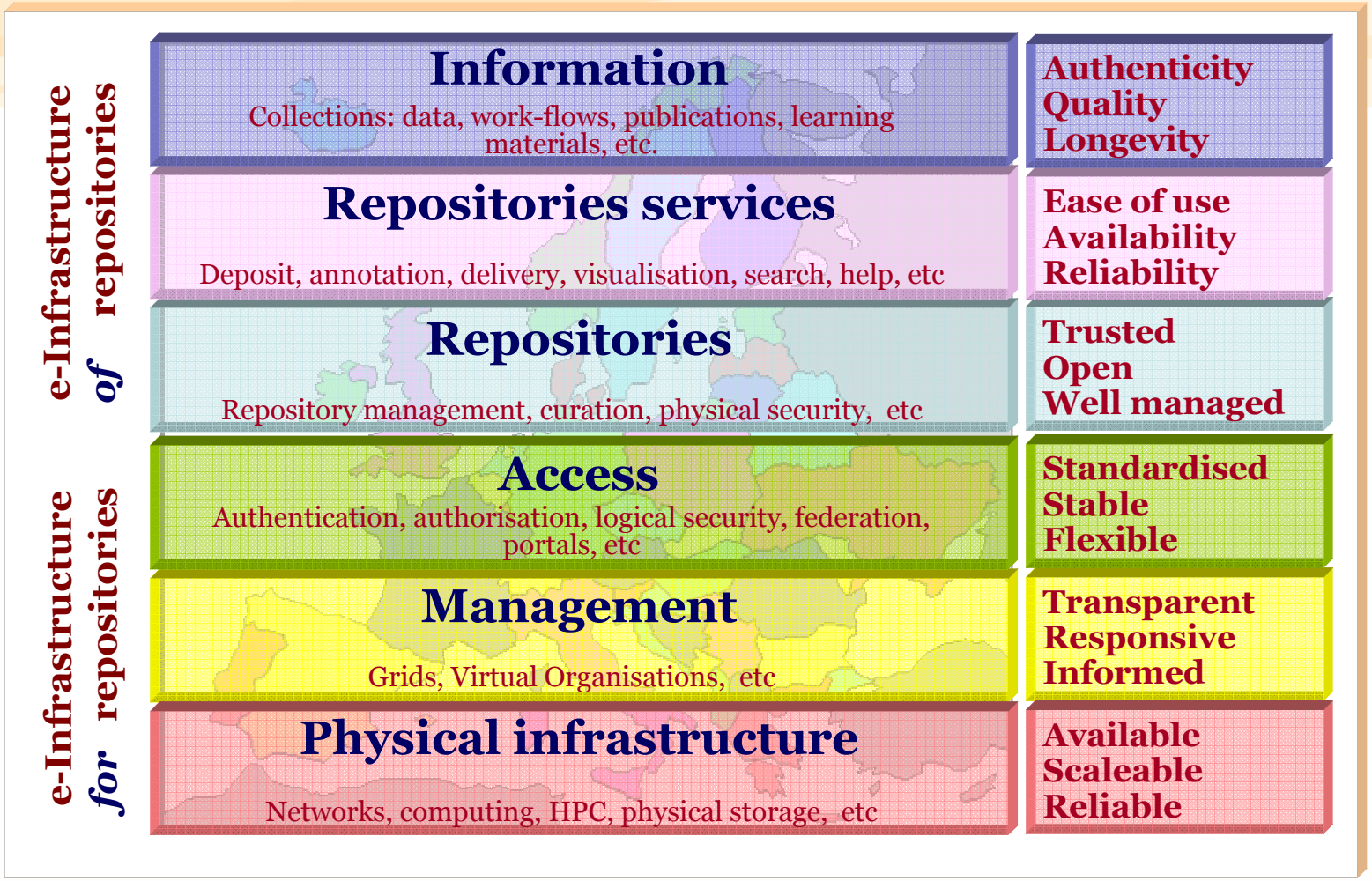
new “petaflop” supercomputers

Sustainable eco-system, pyramid shaped, petaflop level



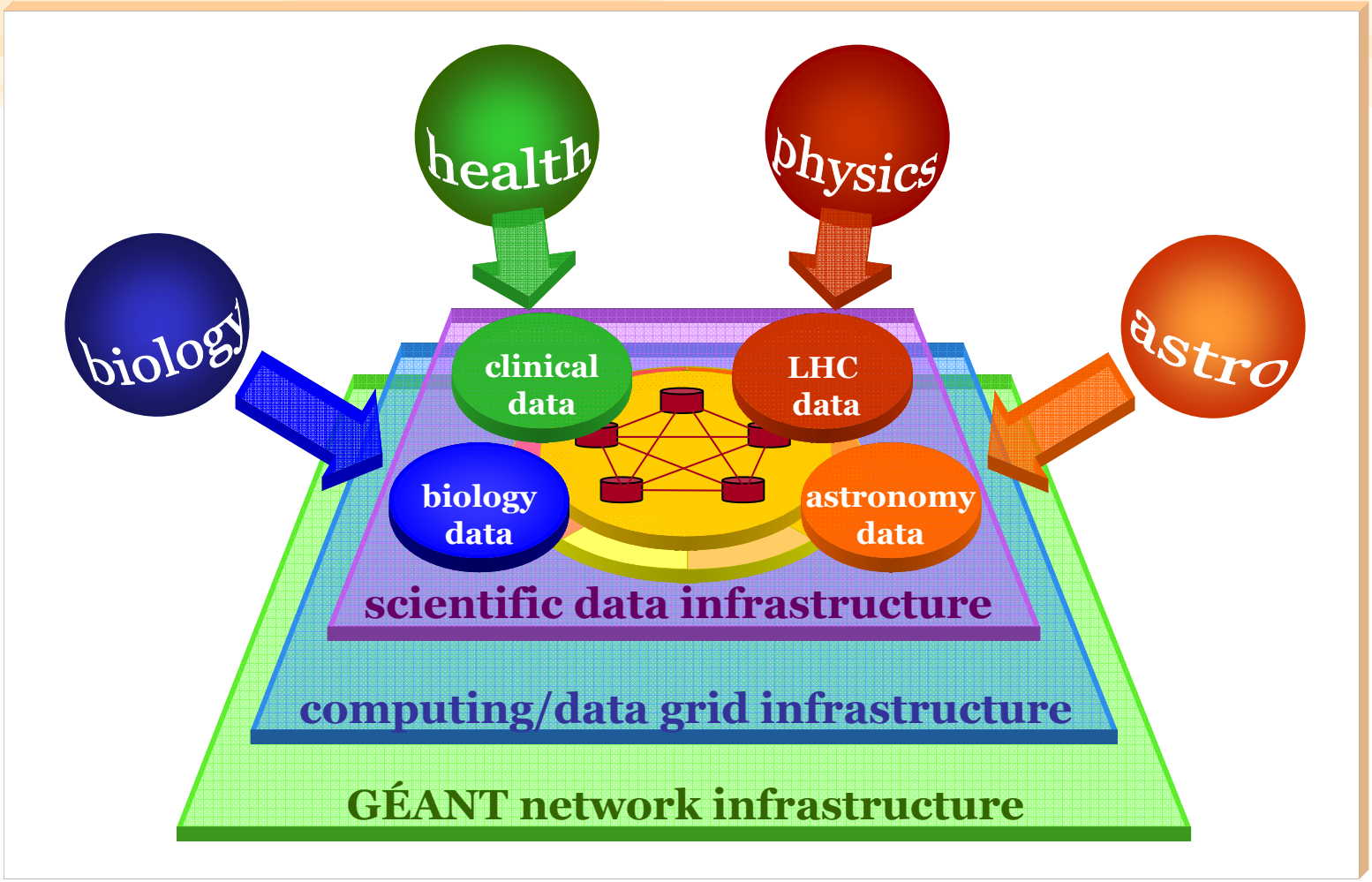
PRACE – Preparatory phase (strategic, governance, financial, legal, technical)

e-Infrastructure of repositories

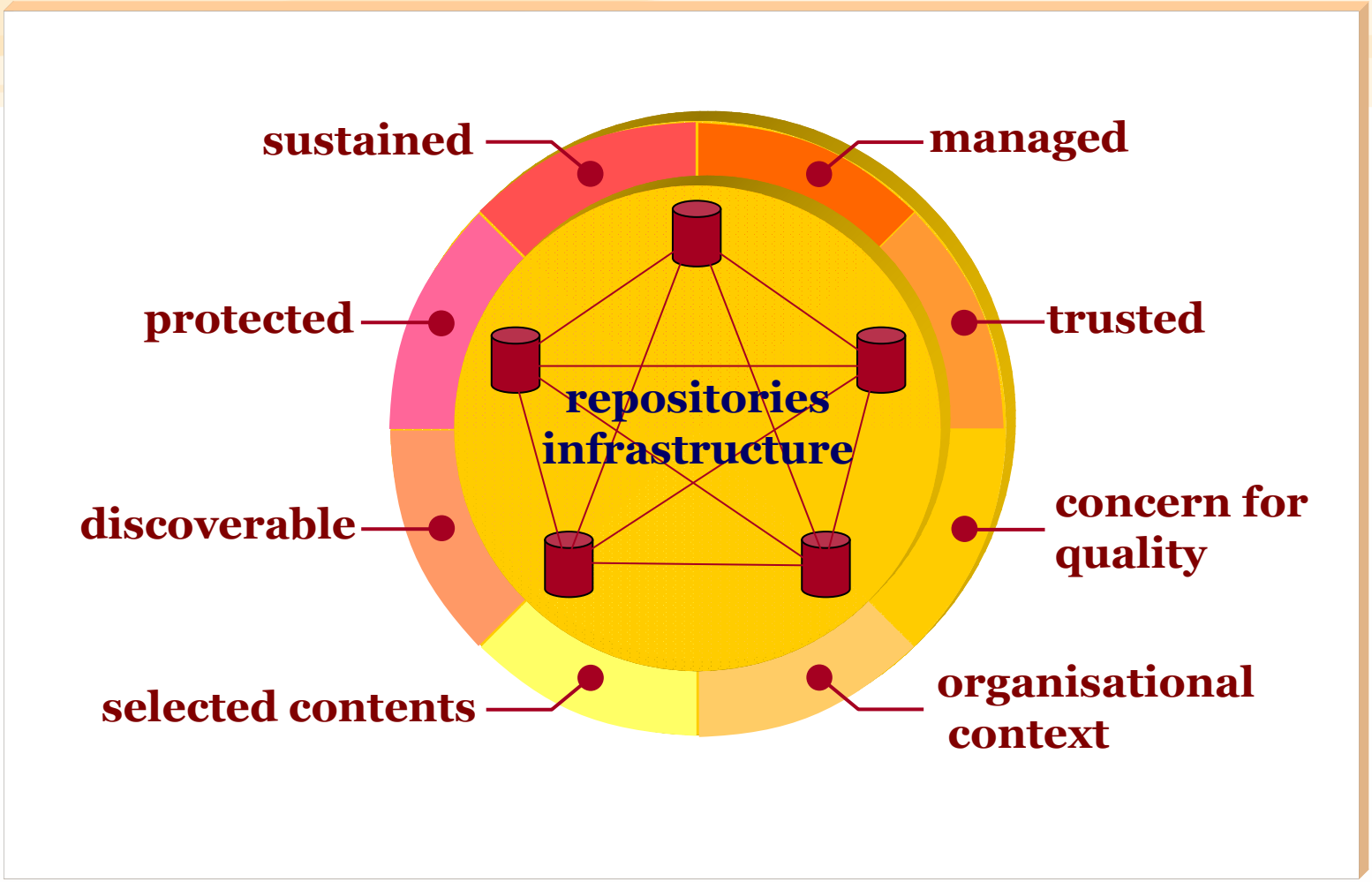


source: eSciDR study (adapted)

scientific data as an infrastructure

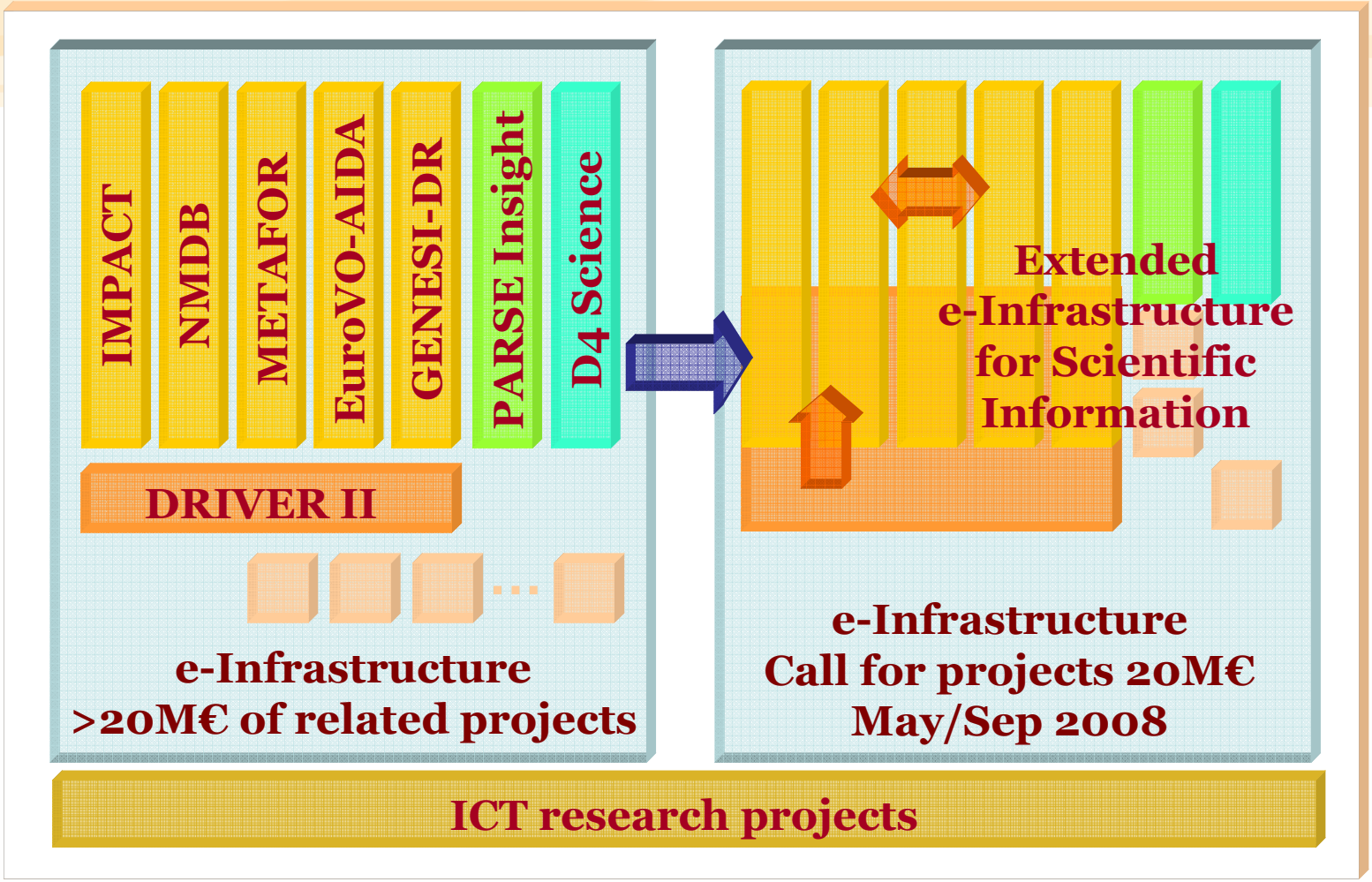


repositories qualities



source: eSciDR study (adapted)

scientific data e-Infrastructure new call



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involving scientific communities

the policy debate in Europe…

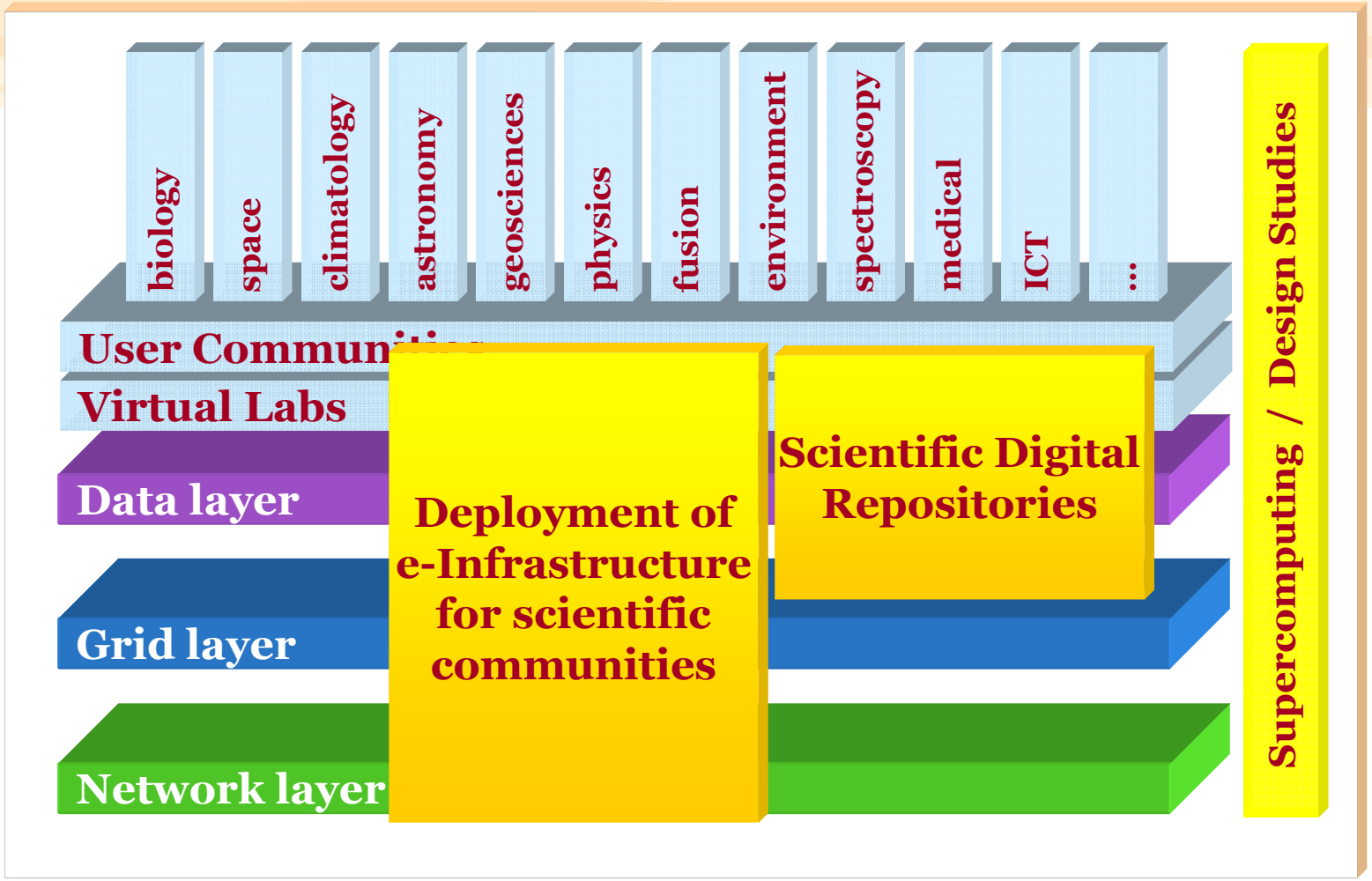
Council of European Union, 22/23 Nov 2007:

- **Recognises**
  - *that universities, libraries, research performing and research funding organisations, scientific publishers and other stakeholders have in recent years made considerable investments in information technologies for online accessibility*
- **Underlines**
  - *that Member States have a strong interest in an efficient scientific information system that maximises the socio-economic impact of public investments in research and technological development*

EU Council conclusions

- **Considering**
  - *Access to and dissemination of publications and data crucial for the European Research Area and innovation*
  - *Effective long lasting preservation is fundamental*
- **Invites the Member States / Commission**
  - *Enhance coordination between MS and large research organisation and funding bodies on access, preservation and dissemination policies and practices*
  - *Experiment OA to data and publication from EU projects*
  - *Encourages research into digital preservation*
  - *Wide deployment of scientific data infrastructures with cross border, cross institution and cross discipline value added for OA and preservation*

e-Infrastructure Call 1 main objectives



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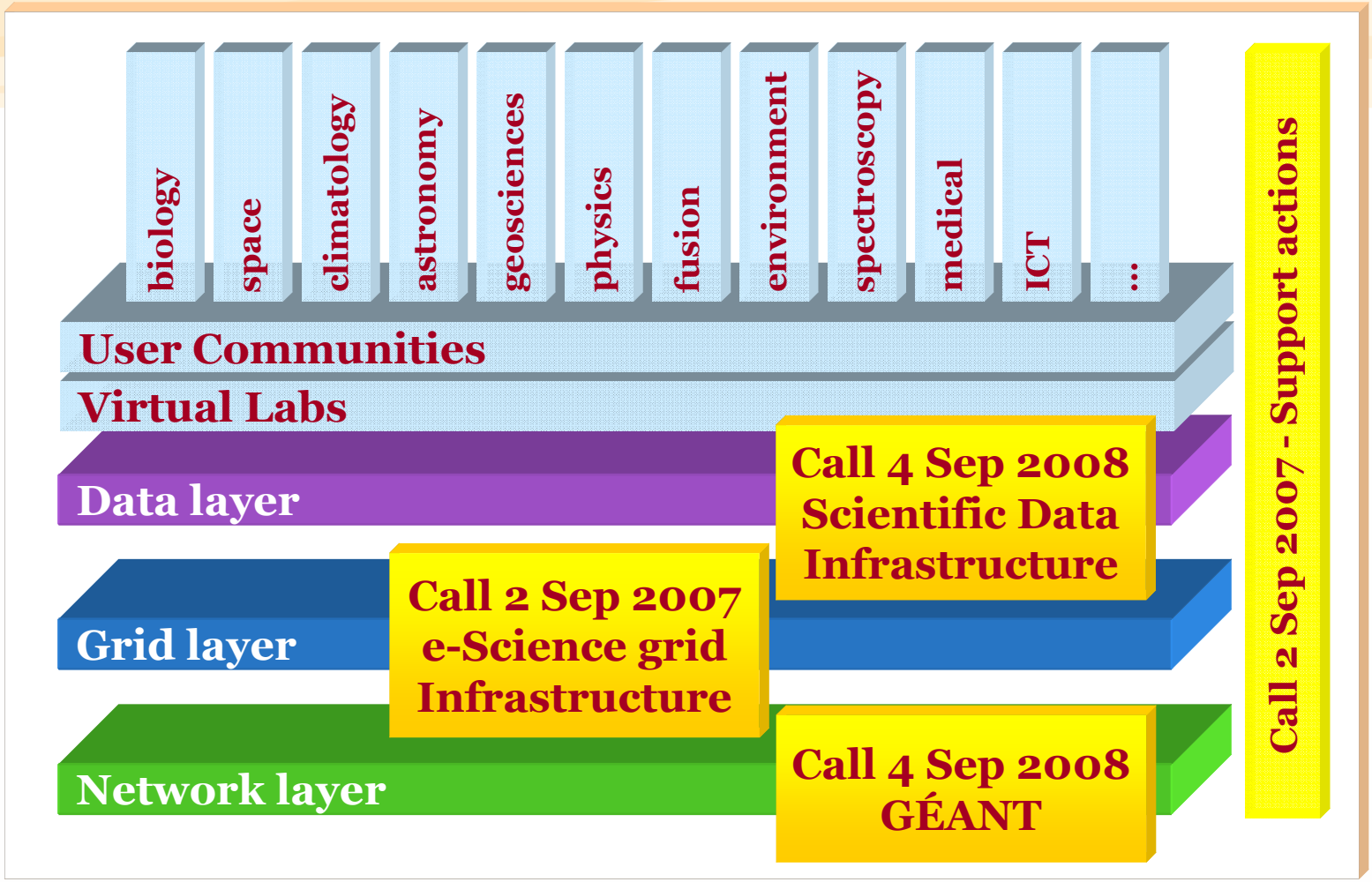
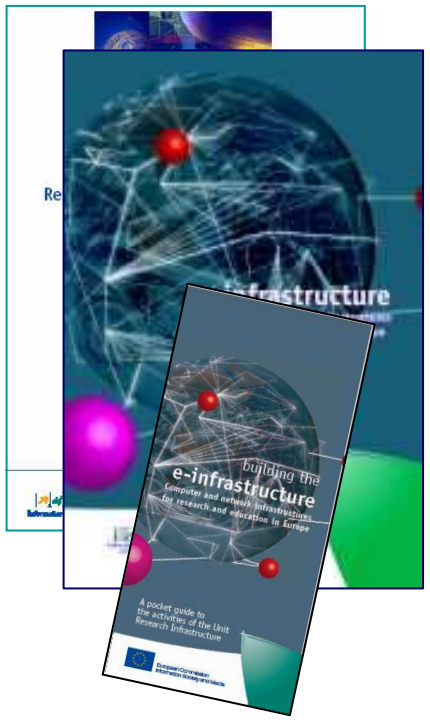
e-Infrastructure Call 2 and 4



Further information



www.cordis.europa.eu/fp7/ict/e-infrastructure/

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Connecting the finest minds

••• Linking ideas at the speed of light

Sharing the best scientific resources

••• Harnessing the unlimited power of computers, instruments and data

Building virtual global research communities

••• Innovating the scientific process

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géant | grids | scientific data | supercomputing

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