



Enabling Grids for
E-science in Europe

What is the EGEE project?

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<http://egee-intranet.web.cern.ch>

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Acknowledgements



This presentation includes slides and information from many colleagues in EGEE.

Goals of talk

- To give an orientation to the next 2 days
- To explain why EGEE exists
- To give a brief overview (expanded upon tomorrow)

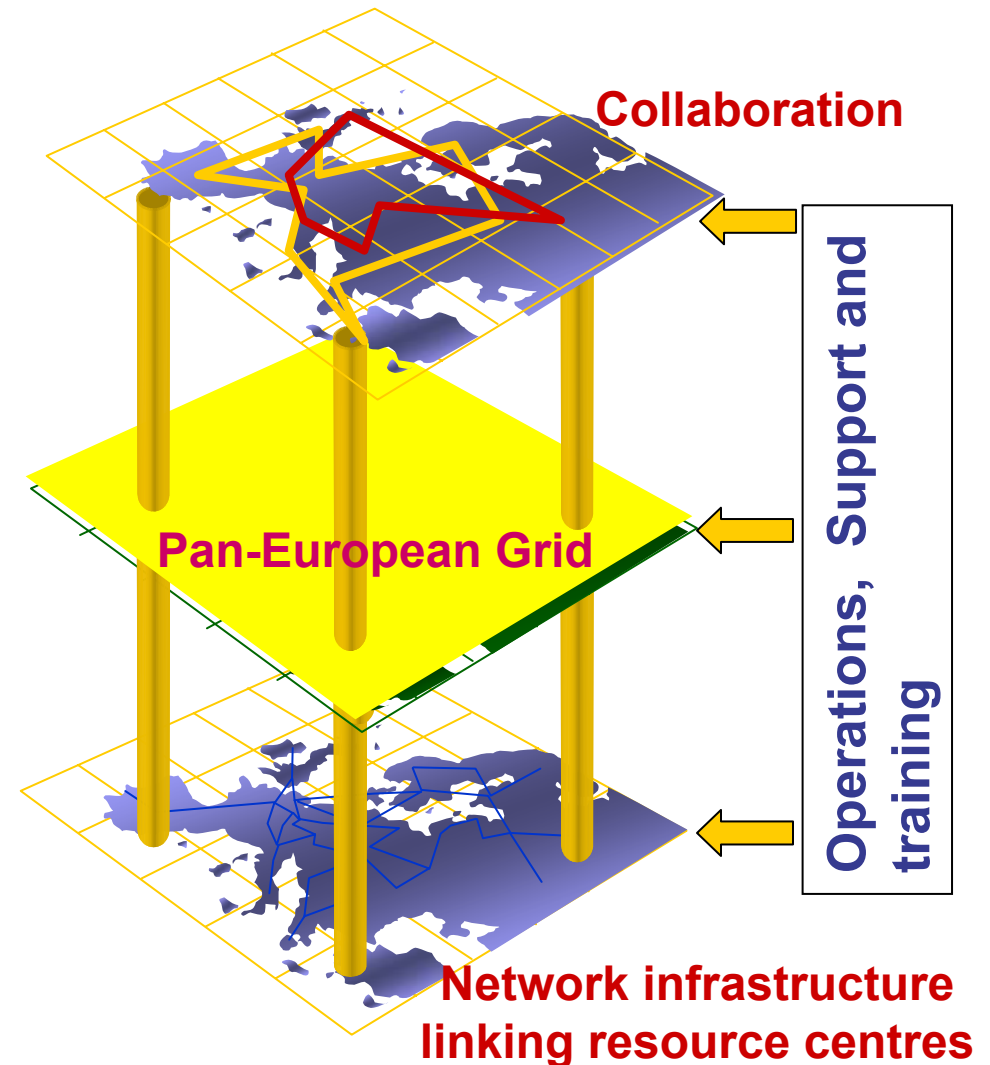
Outline

- An overview of EGEE
- Current status of EGEE



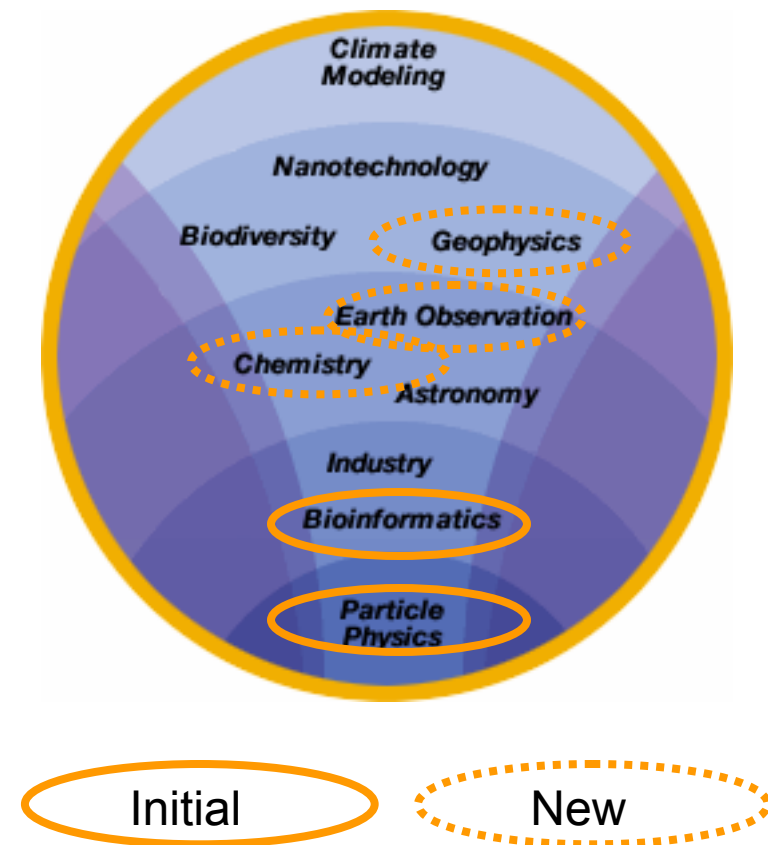
Towards a European e-Infrastructure

- To underpin European science and technology in the service of society
- To link with and build on
 - National, regional and international initiatives
 - Emerging technologies (e.g. fibre optic networks)
- To foster international cooperation
 - both in the creation and the use of the e-infrastructure



In 2 years EGEE will:

- **Establish production quality sustained Grid services**
 - 3000 users from at least 5 disciplines
 - over 20,000 CPU's, 50 sites
 - over 5 Petabytes (10^{15}) storage
- Demonstrate a viable general process to **bring other scientific communities on board**
- **Spend 32 Million Euros - started April 2004**
 - 70 institutions in 27 countries
- **Propose a second phase** in mid 2005 to take over EGEE in early 2006



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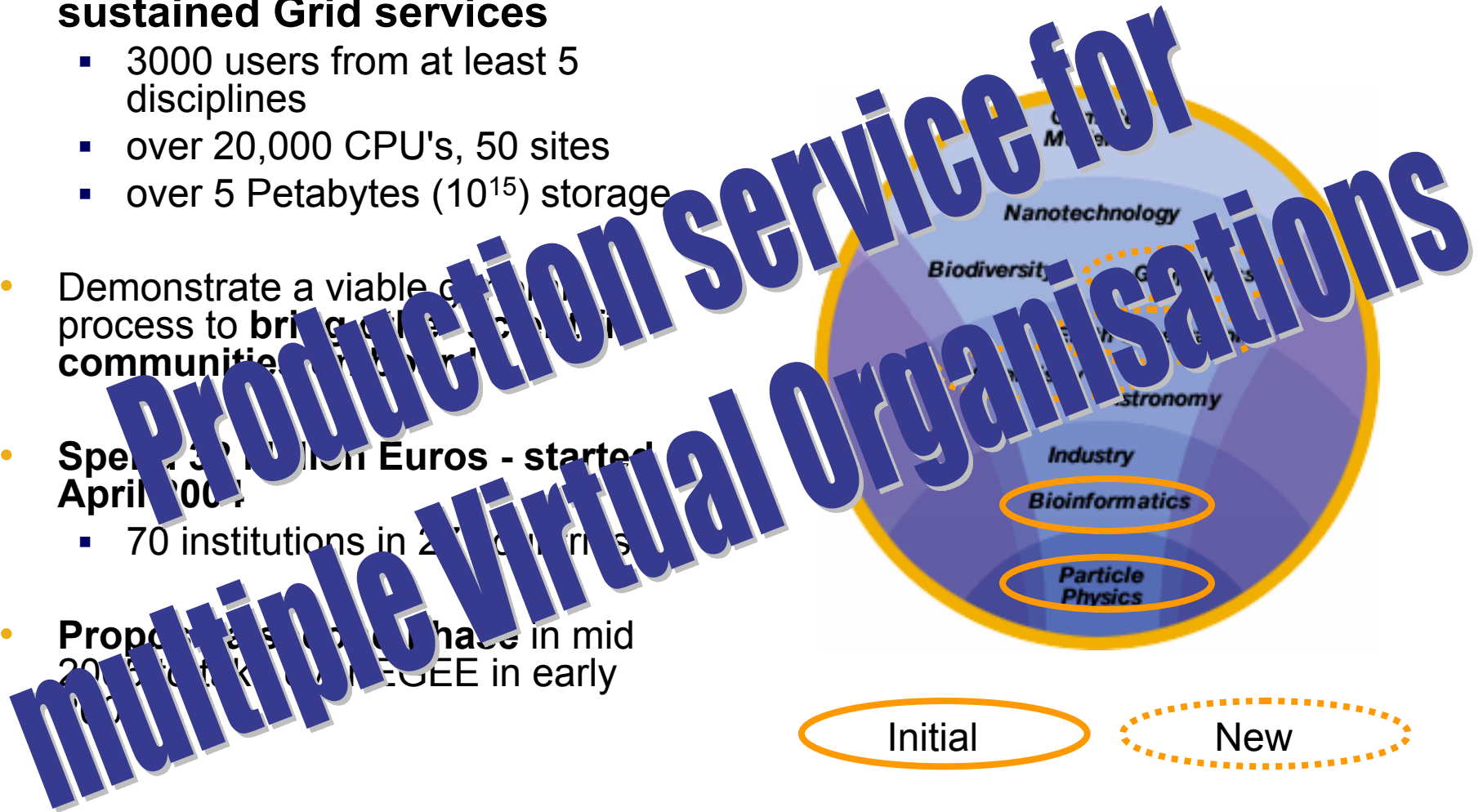
- Proposed for 2005 in mid 2004

- 2005 - 2006 for EGEE in early



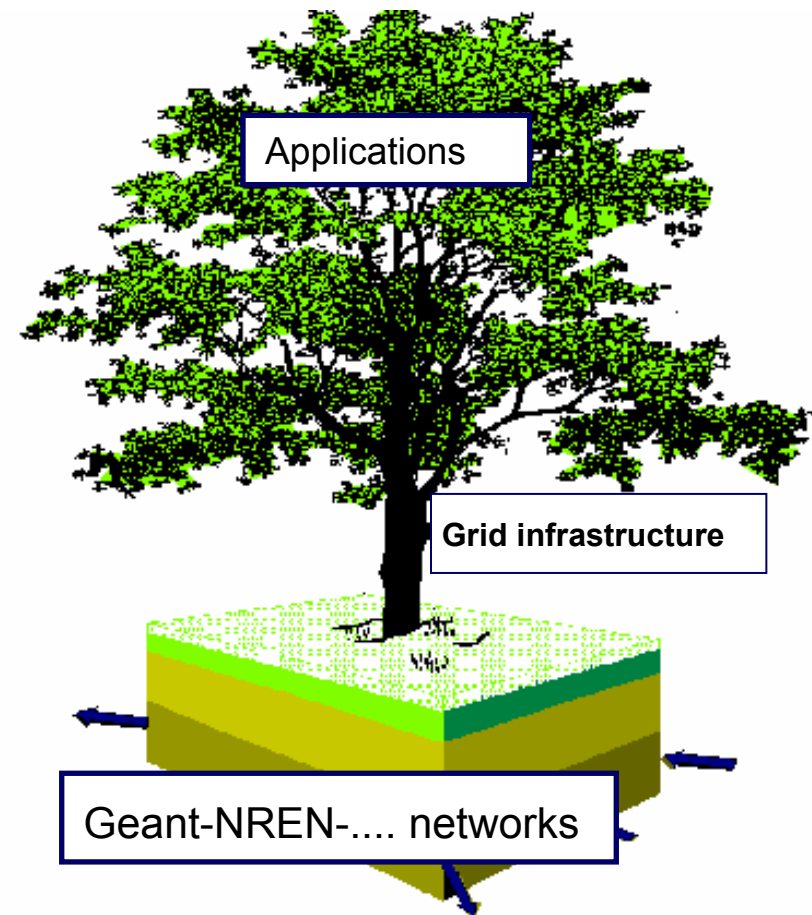
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- **Establish production quality sustained Grid services**
 - 3000 users from at least 5 disciplines
 - over 20,000 CPU's, 50 sites
 - over 5 Petabytes (10^{15}) storage
- Demonstrate a viable process to bring Grid services to scientific communities
- Spend 30 million Euros - started April 2001
 - 70 institutions in 27 countries
- Proposals accepted have in mid 2002 for EGEE in early



EGEE Overview (I)

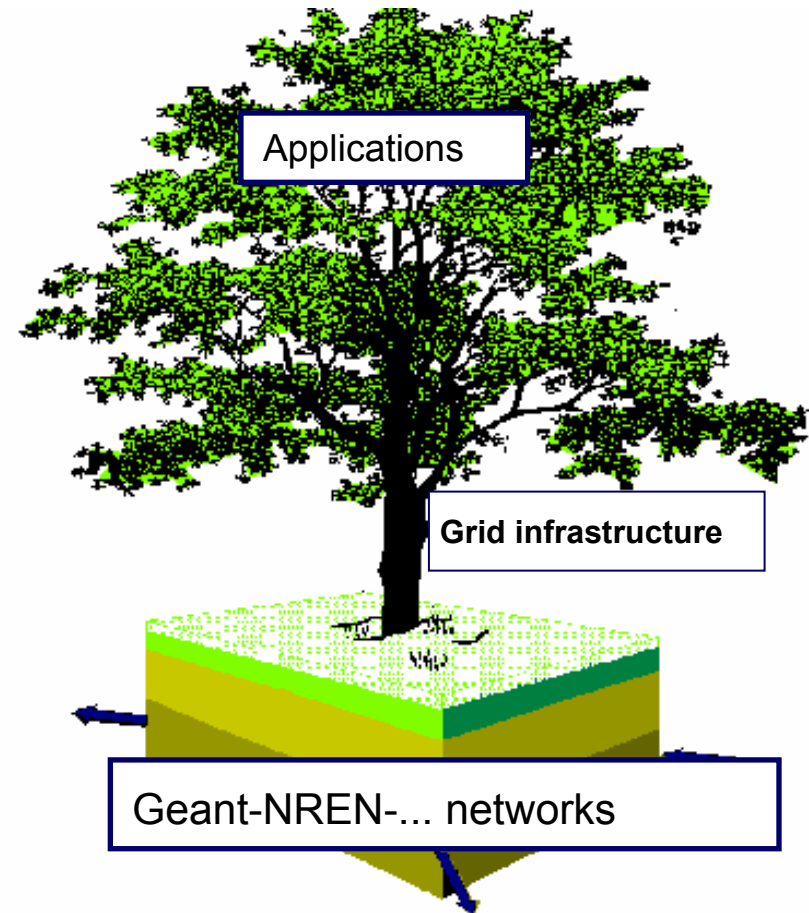
- **Goal:**
 - Create a Europe-wide production-quality Grid infrastructure for e-Science on top of present and future EU Research Networking infrastructure
- **Build on:**
 - EU and EU member states major investments in Grid Technology
 - International connections (US and AP)
 - Several pioneering prototype results
 - Large Grid development teams in EU require major EU funding effort
- **Approach**
 - Leverage current and planned national and regional Grid initiatives and infrastructure:
 - Work closely with relevant industrial Grid developers, NRENs and US-AP projects



- <http://www.cern.ch/egee>

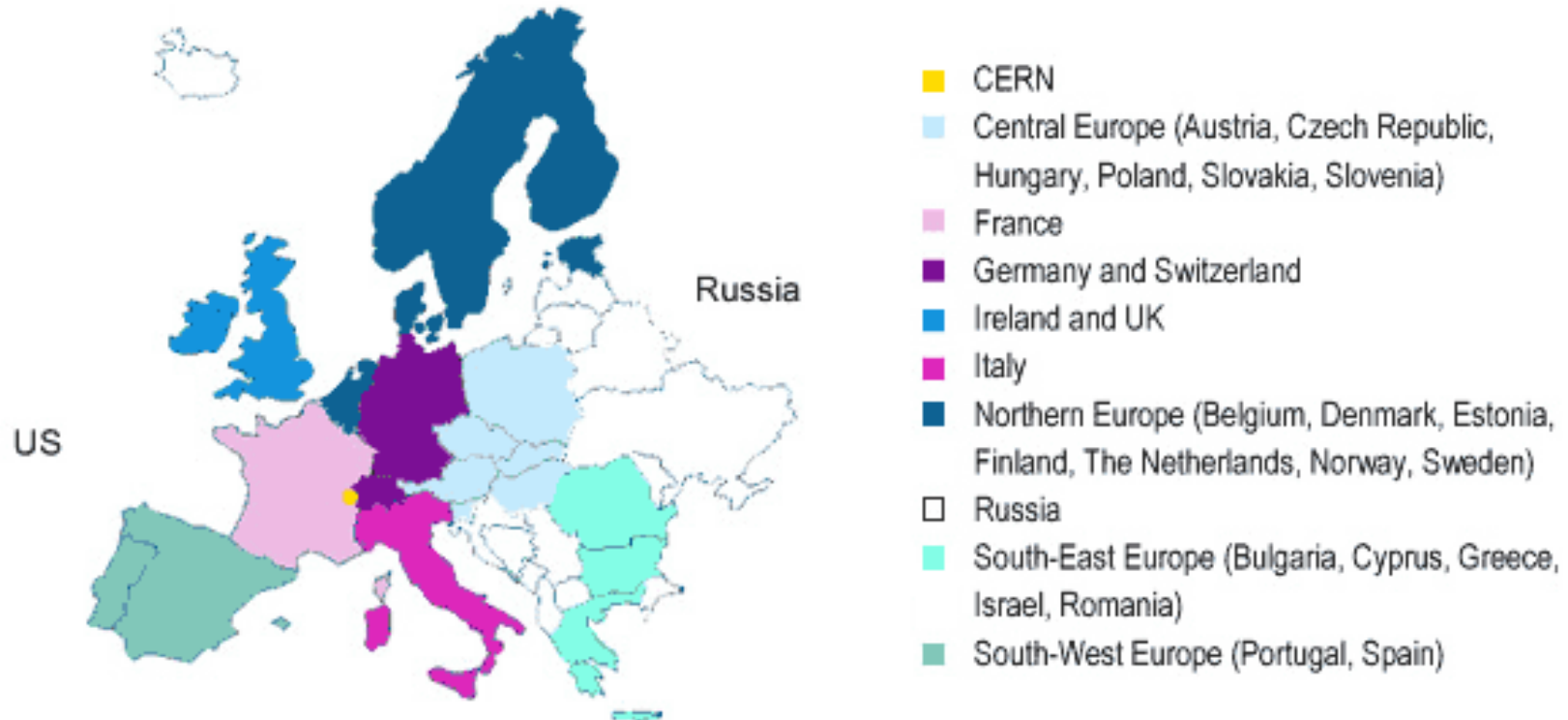
EGEE Overview (II)

- EU does not fund creation of resource centres (CPUs, Storage, etc.). These will be funded by National Projects
- Resource Centres' (RCs) integration is eligible for EU funding support
- EU supports mainly labour – e.g. middleware, operations, training teams
- GEANT + NREN +... networks will be used to interconnect the Resource Centres



EGEE Figures & Organization

- Coordinator: European Organization for Nuclear Research - **CERN**
- **70** leading institutions in **27** countries, federated in regional Grids
- **32 M € EU** funding in 2004-2005 (twice from partners)



To join EGEE

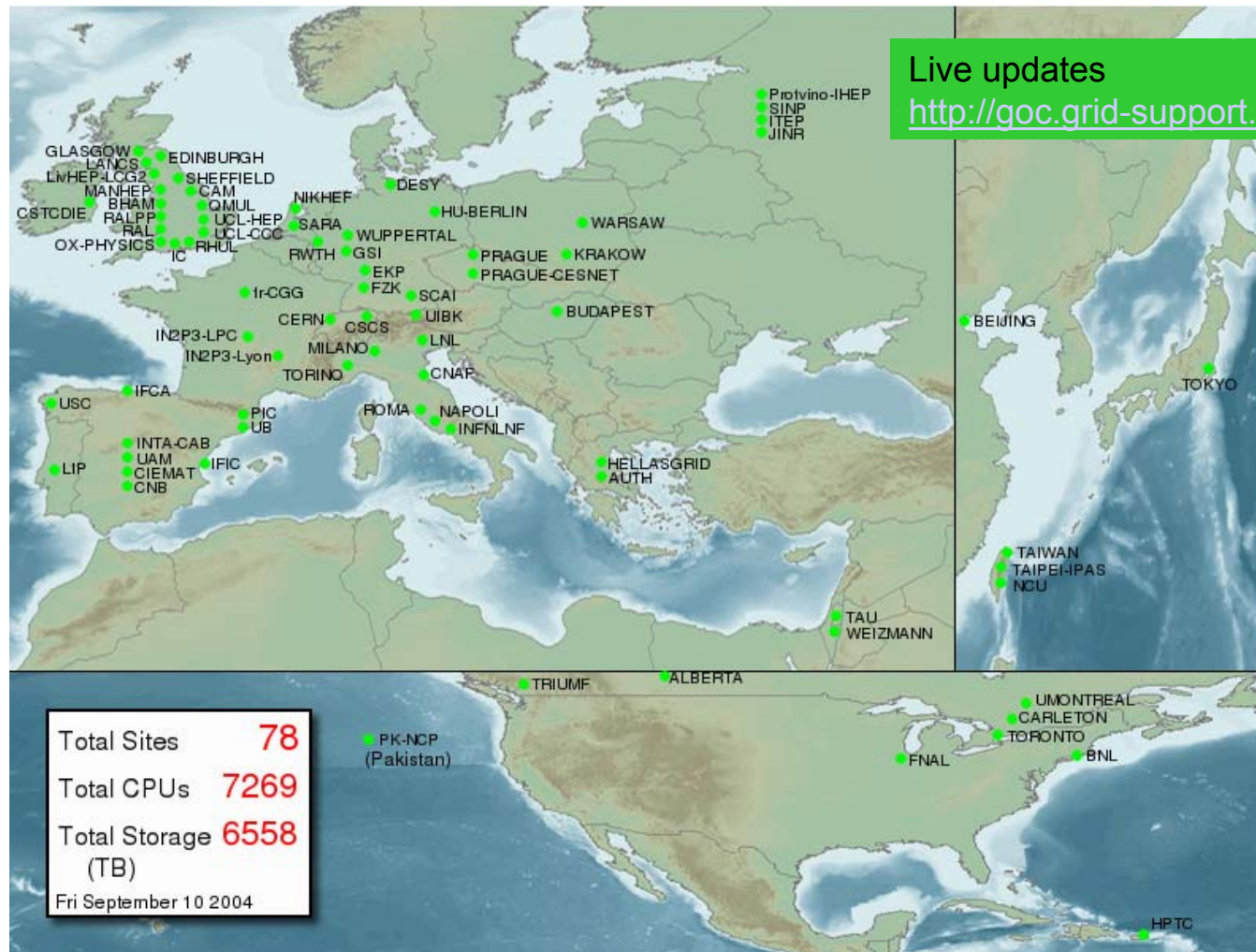


To use ~~use~~ join EGEE, either:

- join an existing VO in EGEE, or
 - apply to add a new VO (i.e. user community)
-
- New VO usually requires:
 - Negotiation with one of the Regional Operations Centres
 - Seek balance between the resources to be contributed by the VO and those expected to be consumed.
 - Many resources need to be available to multiple VOs : shared use of resources is fundamental to a Grid

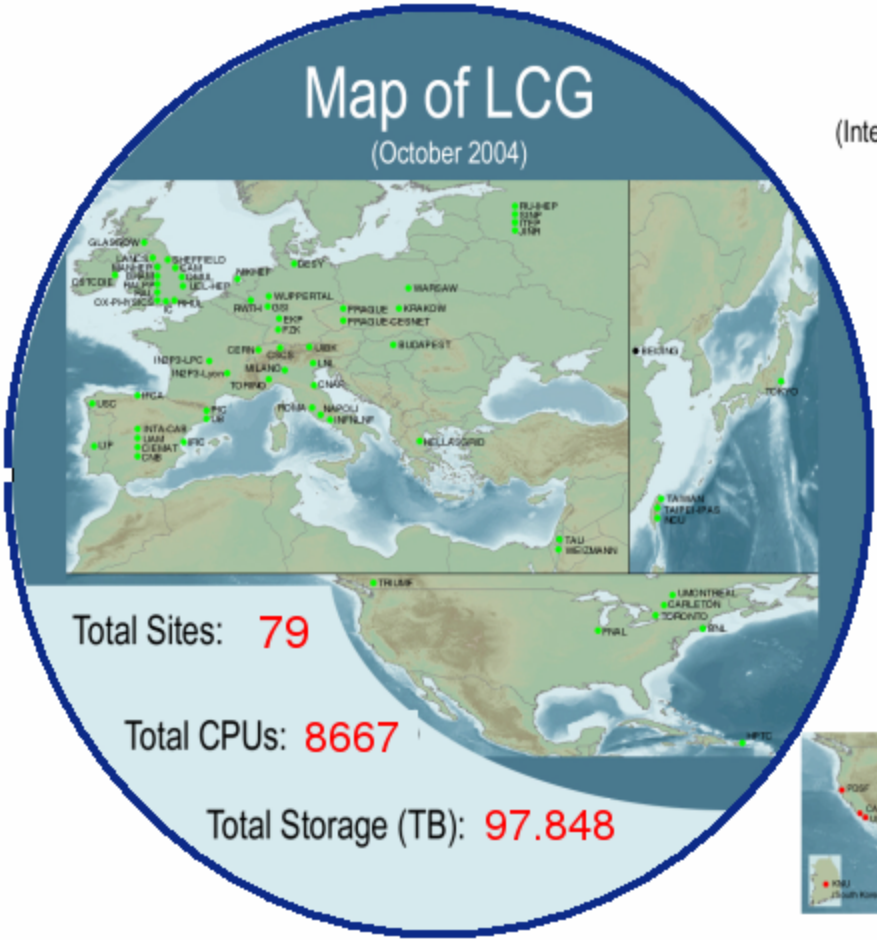
Current status

- Production service is fully operational and continues to grow



- Level
- Parameters
- Change
- Notification
- Monitoring
- Regional
- Monitoring
- Scheduled
- Downtimes
- Security

- General
- Information
- News
- Meetings
- Links



NorduGrid (Interoperating with LCG)



Grid3 (Interoperating with LCG)



The challenges of today...

- Trainers must explain how:
 - multiple communities of scientists (i.e. many VO's)...
 - ... currently share access to 78 sites
 - ... to discover and use available compute and data resources
 - without prior relationships of trust, without centralised control
 - and without remembering 78 usernames and passwords
- You are invited to consider:
 - How can this evolving e-Infrastructure support your research communities in international collaboration?
 - Suggestion:
 - **Ask not what “the Grid” can do for you, but what you can do for a Virtual Organisation.**