

Future Developments in the EU DataGrid

The European DataGrid Project Team

<http://www.eu-datagrid.org>



- Where is the DataGrid project going?
 - How to preserve the work done in DataGrid after the project ends
 - WebServices and Open Grid Services Architecture
 - Where Grid computing is heading in the coming years

Interaction with Sister Projects



◆ CrossGrid



- Using the same security certs.
- Testbed sites install EDG software
 - Extending it for needs of intensive interactive applications
- Participating in the EDG testing activities
- Representatives in each projects architecture & management groups

◆ DataTAG (EDT)



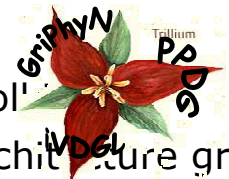
- EDT is deploying EDG sw to investigate inter-operability with US projects (iVDGL, GriPhyN, PPDG)
- Results feedback into EDG software releases
 - (e.g. GLUE compatible information providers/consumers)

◆ NorduGrid



- Using the same security certs.
- Involved in EDG architecture work
 - Good ideas for gatekeeper and MDS configuration
 - Helped develop GDMP and GSI extensions for Replica Catalog
 - Involved in Glue schema work
 - Security policy
- Mware testing
- Working in WP8 (HEP applications)

◆ iVDGL/GriPhyN/PPDG



- Common underlying tool
- US members in EDG architecture group
- Looking for common packaging and toolkit usage solutions

**No strict boundaries with a large cross-fertilization of ideas, software and people
DataGRID is learning from the experiences in these projects**

Plans for the Future

- ◆ Further developments in 2003
 - Deployment of EDG 2.1

- ◆ Interaction with LHC Computing grid (LCG)
 - LCG deploys LCG-1 service in July
 - Main components of EDG 2.0 release build the basis for LCG middleware

- ◆ New EU project
 - Based on the experience of existing grid projects to provide common grid infrastructure for multiple-sciences
 - **EGEE – Enabling Grids for E-Science and industry in Europe**
 - <http://egee-ei.web.cern.ch/egee-ei/2003/>



OGSA: A major development in distributing computing resources and services



- A new **conceptual framework to distribute computing** and services bringing together aspects of web services and grid computing
- The Open Grid Services Architecture is based on the definition of a **Web Service** as **a set of related application functions that can be programmatically invoked over the Internet.**
- To invoke a Web service, applications make use of the service definition information in a Web Services Description Language (**WSDL**) document
- Work on the impact and the possible implementation of an OGSA-based Grid is being carried out (to define possible architectural frameworks and agree on standards) within GGF

EGEE: Goals

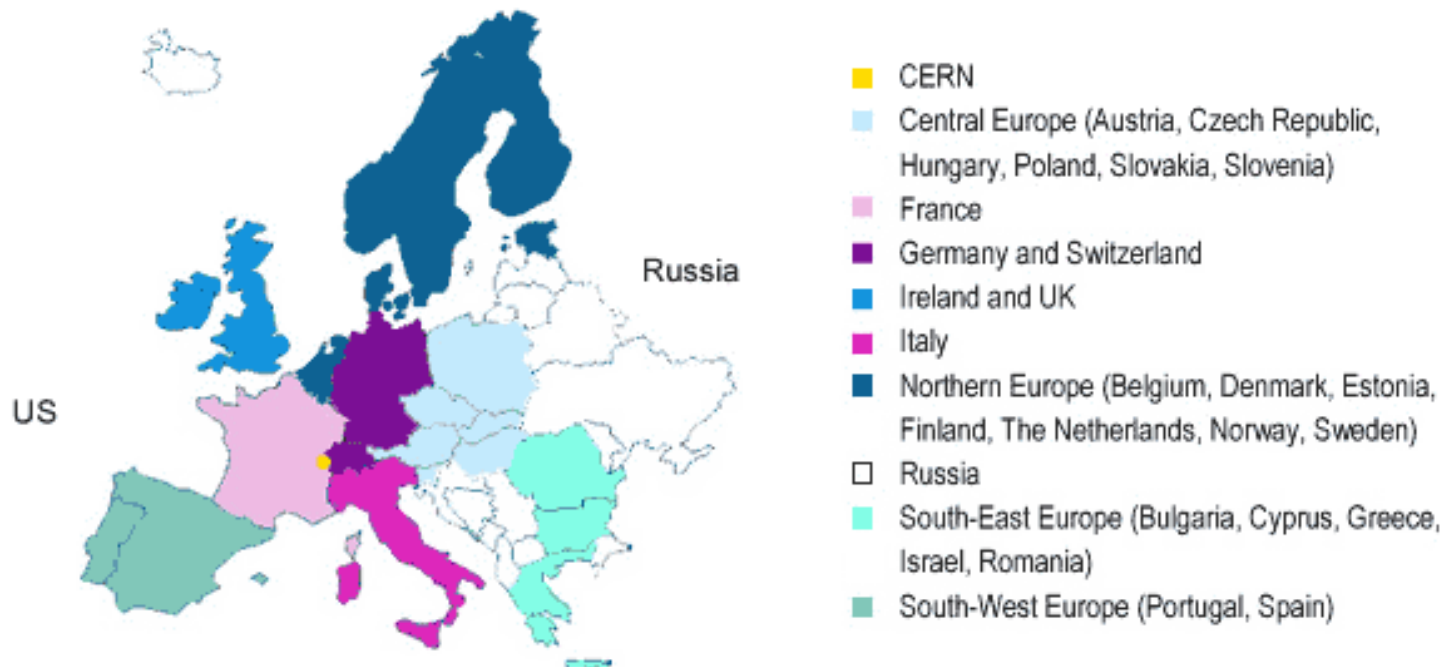
- ◆ Create a wide European Grid **production quality infrastructure** on top of present and future EU RN infrastructure
- ◆ Provide distributed European research communities with “**round-the-clock**” access to major computing resources, independent of geographic location
- ◆ Change of emphasis from grid development to grid **deployment**
- ◆ Support **many application** domains with one large-scale infrastructure that will attract new resources over time
- ◆ Provide **training and support** for end-users

EGEE: Strategy

- ◆ Leverage current and planned national and regional Grid programmes, building on
 - the **results of existing projects** such as DataGrid and others
 - the EU Research Network **Geant** and work closely with relevant industrial Grid developers and **NRENs**
- ◆ Support Grid computing needs common to the different communities
 - **integrate** the computing infrastructures and agree on **common access policies**
- ◆ Exploit **International connections** (US and AP)
 - Provide interoperability with other major Grid initiatives such as the US NSF Cyberinfrastructure, establishing a **worldwide Grid infrastructure**

EGEE: Partners

- ◆ Leverage national resources in a more effective way for broader European benefit
- ◆ 70 leading institutions in 27 countries organised into regional federations



EGEE Service Activity (II)



Resource Centers

Month 1: 10 RCs

Month 15: 20 RCs

Region	CPU nodes	Disk (TB)	CPU Nodes Month 15	Disk (TB) Month 15
CERN	900	140	1800	310
UK + Ireland	100	25	2200	300
France	400	15	895	50
Italy	553	60.6	679	67.2
North	200	20	2000	50
South West	250	10	250	10
Germany + Switzerland	100	2	400	67
South East	146	7	322	14
Central Europe	385	15	730	32
Russia	50	7	152	36
Totals	3084	302	8768	936

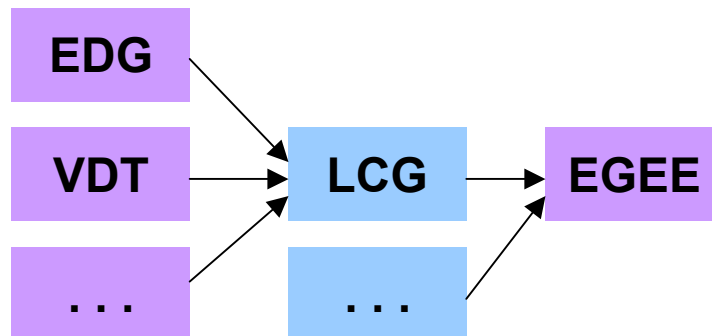
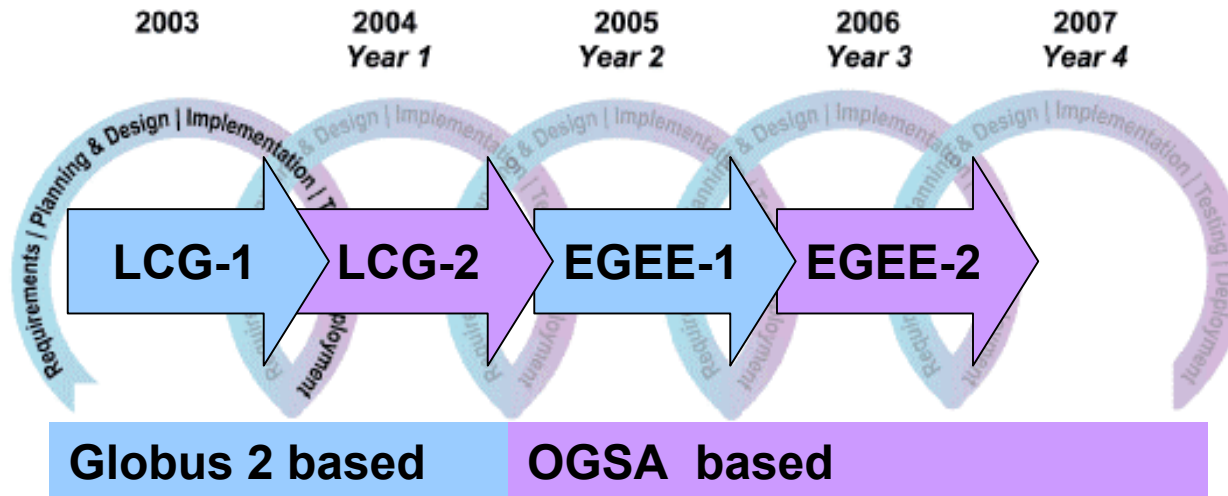
**RCs are not funded via the project
Expect to attract many more RCs**

EGEE and LCG (II)



LCG Deployment Manager will be the EGEE Operations Manager

Production Middleware deployment in EGEE



Outlook



- ◆ The work is not finished!
 - Support for release 2.x
 - Application evaluation by December 2003
 - Final review February 2004 (project ends March 2004)
- ◆ The project is following the development of the OGSA paradigm for distributed computing.
- ◆ EDG mware has been taken over by other projects
- ◆ EGEE follow-up project to produce common grid infrastructure for multiple-sciences