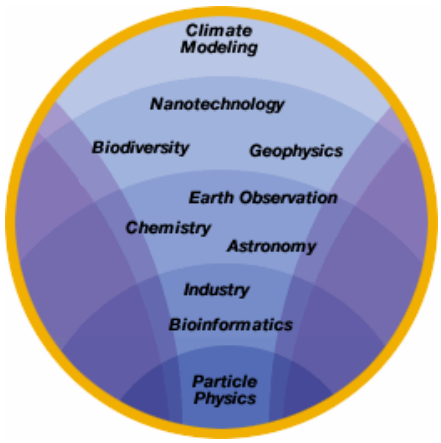
As a scientist, you will soon have access to unparalleled computing power and data storage capacity through a Grid infrastructure that is being established by the EU-funded project Enabling Grids for E-sciencE, more generally known as EGEE. This fact sheet summarises the key aspects of the EGEE project that you – the prospective user of this Grid infrastructure – need to know about.

What is EGEE?

EGEE is a project that aims to integrate current national, regional and thematic Grid efforts, in order to create a seamless Grid infrastructure for the support of scientific research. EGEE provides researchers in academia and industry with round-the-clock access to major computing resources, independent of geographic location. The infrastructure supports distributed research communities, which share common Grid computing needs and are prepared to integrate their own computing infrastructures and agree on common access policies. Mostly funded by EU funding agencies, this project has a world-wide mission and receives important contributions from the US, Russia and other non EU partners.

What scientific disciplines benefit from EGEE?

The short answer is that any discipline which currently relies on advanced scientific computing resources will benefit. In practice, two pilot applications areas have been selected to guide the initial implementation and certify the performance and functionality of the evolving Grid infrastructure. One is the Large Hadron Collider Computing Grid (LCG), which relies on a Grid infrastructure in order to store and analyse petabytes (10^{15} bytes) of real and simulated data from high-energy physics experiments at CERN. The other is Biomedical Grids, where several communities are facing equally daunting challenges, for example for data mining of genomic databases, and the indexing of medical databases in hospitals, which amount to several terabytes of data per hospital per year.



How can new scientific communities gain access to EGEE?

An Application Identification and Support Activity supports the induction of new users and new scientific communities to EGEE's Grid infrastructure. This activity operates a pro-active procedure of identifying and supporting early users from a broad range of academic and industrial fields, as well as through proposals submitted by representatives of specific research communities to an EGEE Generic Applications Advisory Panel (EGAAP). This panel uses the criteria such as scientific interest, Grid added value, Grid awareness and make its recommendations to the EGEE Project Executive Board. Successful applicants receives support for adapting their scientific software to the Grid environment.

For more information, see application contact on www.eu-egee.org

What sort of training does EGEE offer users?

As part of the project, a Training and Induction Activity produces a portfolio of training material and courses written in English, from introductory to advanced level. This training is supported at a regional level, and key material may be translated into the appropriate European languages for that region. The main types of training courses are induction courses (2 days, at least 10/year); application developer training (4 days, at least 8/year); advanced courses (5 days, at least 2/year) and retreats dedicated to specific technical activity areas (2 days, at least 6/year).

For more information, see training contact on www.eu-egee.org

How can users keep up-to-date about the development of EGEE?

A Dissemination and Outreach Activity within the project is maintaining a one-stop-shop for all major project information, with links to relevant regional websites (see www.eu-egee.org). In addition, focused email distribution lists targets key user and potential user groups, and there are several major EGEE networking events to which all scientists with an interest in EGEE are encouraged to attend.

For more information, contact the EGEE Dissemination Office at pressoffice@eu-egee.org

What is the timeframe for the EGEE project?

EGEE is a two-year project conceived as part of a four-year programme, which officially started on 1 April 2004. It has "hit the ground running" and deployed basic services, initiated middleware and dissemination activities before the formal start of the project. The available resources and user groups are rapidly expanding during the course of the project. A second two-year project is anticipated to follow on from EGEE, in which industry will progressively take up the operations and maintenance of a stable Grid infrastructure from the academic community. This is analogous to the way that GEANT, a multi-gigabit pan-European data communications network for research and education, has progressively transferred operations from the public to the private sector.

What are the success criteria of the EGEE project?

EGEE aims to have 3000 users active on the Grid infrastructure from at least five disciplines by the end of the second year of the project. The Grid infrastructure available to EGEE will grow from over 3000 CPUs at the outset of the project to over 8000 by the end of the second year. Several measures of quality of service will be used to assess the impact of this Grid infrastructure. In addition to demonstrating the added value of Grid technology quantitatively, the project aims to achieve qualitative improvement in terms of new functionality not previously available to the participating scientific communities.

Who is behind EGEE?

The EGEE Project involves 71 leading organisations from around 27 countries, federated in regional Grids, with an ultimate combined capacity of over 20000 CPUs – the largest international Grid infrastructure ever assembled. The EU is funding €32 million towards the project, with a similar level of funding from the partners. The total manpower allocated to the project is approximately 600 person years over two years. The breakdown of funded activities is 48 per cent for Grid service activities, 24 per cent for middleware re-engineering and 28 per cent for networking (dissemination, outreach and training).

The process of developing the EGEE project has lead to a structuring of the worldwide Grid community into partner regions. Each of these partner regions has representation on the Project Management Board of the project, as do the lead partner CERN, the European Research Networks and LCG. Details of the relevant contact persons for your country or region can be found on the project website.

For more information, see www.eu-egee.org

What is the relationship of EGEE to existing Grids and research networks?

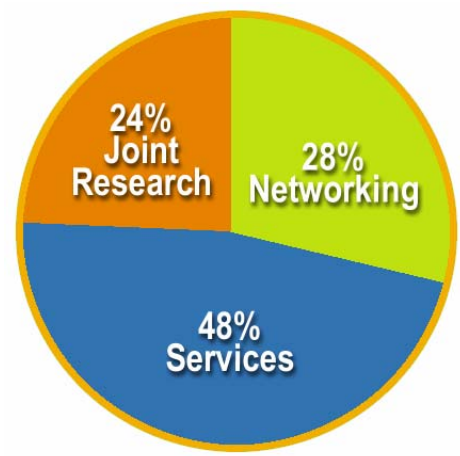
The EGEE infrastructure is built on the EU Research Network GEANT and exploits Grid expertise that has been generated by projects such as the EU DataGrid project, other EU supported Grid projects and the national Grid initiatives such as UK e-Science, INFN Grid, Nordugrid and US Trillium. The infrastructure provides interoperability with other Grids around the globe, including the US and Asia, contributing to efforts to establish a worldwide Grid infrastructure**.**

What sort of functionality does EGEE provide?

•**Simplified access** – EGEE reduces the overhead of separate accounting systems by providing means for users to join virtual organisations with access to a Grid containing all the operational resources the user needs.
•**On demand computing** – By allocating resources efficiently, the Grid promises greatly reduced waiting times for access to resources.
•**Pervasive access** – The infrastructure is accessible from any geographic location with good network connectivity, making resources more widely available.
•**Large scale resources –** Through coordination of resources and user groups EGEE provides application areas with access to resources of a scale that no single computer centre can provide.
•**Sharing of software and data –** By providing a unified computational fabric, EGEE allows widespread user communities to share software, software development, and databases in a transparent way.
•**Improved support –** By making use of the expertise of all the partners EGEE offers in-depth support for all key applications.

What level of service does EGEE provide?

The grid operations groups in the EGEE project ensure the delivery of production level Grid services, the essential elements of which are manageability, robustness, resilience to failure, and a consistent security model, as well as the scalability needed to rapidly absorb new resources as these become available. The key objectives of these groups are to support core infrastructure services, Grid monitoring and control, middleware deployment and resource induction, resource and user support, Grid management and international collaboration. An Operations Management Centre at CERN (Switzerland) will coordinate the work of five Core Infrastructure Centres (CERN, France, Italy, Russia and UK) and eight Regional Operation Centres. The initial production service of EGEE is based on the middleware and services deployed and operated by the LCG project.



For more information on LCG, see www.cern.ch/lcg

What middleware is EGEE based on?

A Grid Middleware Engineering and Integration Activity supports and continuously upgrades a suite of software tools capable of providing production level Grid services to a base of users which is anticipated to rapidly grow and diversify. The middleware activities in EGEE focus primarily on re-engineering existing middleware functionality, leveraging the considerable experience of the partners with the current generation of middleware. The middleware will evolve towards a service oriented architecture (SOA) based on standards developed within the Web Services and related communities. Middleware Re-engineering Centres takes responsibility for the following key services: Resource Access (Italy); Data Management (CERN); Information Collection and Retrieval (UK); Resource Brokering and Accounting (Italy), Security (Nordic countries). Quality Assurance and Grid Security teams are closely connected to this effort. A middleware Integration and Testing Centre is based at CERN. As a starting point for this activity, an effort has been launched to integrate some of the leading Grid middleware from the Virtual Data Toolkit (VDT), The European DataGrid Project (EDG) and the AliEN project.

What are the benefits of contributing resources to EGEE?

Resource providers perceive several advantages to joining EGEE:

•**Large scale operations** – Through EGEE a coordinated large scale operational setup is created. This leads to significant cost savings and at the same time improved level of service provided at each participating resource partner.

•**Specialist competence** – By distributing service tasks among the partners EGEE makes use of leading specialists to build and support the infrastructure.

•**User contacts** – The EGEE distributed support model allows for regional adaptation and close contacts with regional user communities.

•**Collaborations among resource partners** – partners within EGEE may form collaborations and launch development and support actions not included in the present proposal. This leads to cost sharing of R&D efforts among partners.

How is industry involved?

Industry will benefit significantly from EGEE in three ways:

•**Industry as a partner** - Through collaboration with individual EGEE partners, industry has the opportunity to participate in specific activities, thereby increasing know-how on Grid technologies.

•**Industry as a user -** As part of the networking activities, specific industrial sectors are targeted as potential users of the installed Grid infrastructure, for R&D applications.

•**Industry as a provider** - Building a production quality Grid requires industry involvement for long-term maintenance of established Grid services, such as call centres, support centres and computing resource provider centres.

The main role of the Industry Forum in the Enabling Grids for E-Science (EGEE) project is to raise awareness of the project amongst industry and to encourage businesses to participate in the project. This is achieved by making direct contact with industry, liaising between the project partners and industry in order to ensure businesses get what they need in terms of standards and functionality and ensuring that the project benefits from the practical experience of businesses.

For more information on the Industry Forum, see http://public.eu-egee.org/industry

The EGEE project is also anticipated to make significant contributions to standards bodies such as the Global Grid Forum, and to policy developments in areas such as Grid security, resource scheduling and certificate authorities, which will have an impact on the development of industrial Grid standards.

Finally, the EGEE project is likely to be a source of innovative IT technologies. This spin-off is anticipated to have benefits for industry and commerce going well beyond scientific computing, in much the same way that the World Wide Web, initially conceived for science, has had a much broader impact on society.

EGEE Contact List:

- Specific contact points are maintained on the official project web sites under **www.eu-egee.org**
- For general press information, please contact **pressoffice@eu-egee.org**
- The Project Office can be contacted at **project-eu-egee-po@cern.ch**