

**31 March 2004**

## **EUROPEAN GRID COMPUTING CHANGES GEAR**

European plans for Grid technology change gear this week, as the pioneering European DataGrid (EDG) project comes to a successful end and a new project, the Enabling Grids for E-Science in Europe (EGEE) project, begins. The EGEE project will build on the success of the EDG project and take Grid technology even further by establishing a service Grid infrastructure which is available across Europe, 24 hours-a-day.

The European DataGrid (EDG) project, which started three years ago, successfully concluded on 31 March 2004. Aimed at taking a major step towards making the concept of a world-wide computing Grid a reality, the goal of EDG was to build a test computing infrastructure capable of providing shared data and computing resources across the European scientific community. The budget for the project was around ten million Euros and 21 partner institutes and organisations across Europe were involved, including scientific institutes and industrial partners.

“We express our full satisfaction with the overall performance and all the achievements of the projects during the entire project period of three years”, was the concluding remark of the EU reviewers, who officially declared the end of the project after analysing in detail its final results.

After a massive software development effort involving seven major software releases over three years, the final version of EDG software is already in use in three major scientific fields: High Energy Physics, Biomedical applications and Earth Observations. In High Energy Physics, it is the basis of the Large Hadron Collider Computing Grid (LCG) infrastructure, which relies on Grid technology to store and analyse petabytes of real and simulated data from experiments at the CERN LHC. The software is also exploited by ten bio-medical applications and five earth observation institutes. At peak performance, the EDG test bed shared more than 1000 computers and more than

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15 Terabytes (1 Terabyte =  $10^{12}$  bytes) of data at 25 sites across Europe, Russia and Taiwan. Grid resources were continuously provided to a user community numbering 500 scientists, organised in 12 virtual organizations. Recently, the EDG software has been approved by the Open Source Initiative Corporation, which makes it an internationally recognised open source licence.

In line with EU advice to capitalise as extensively as possible on the experience and achievements of the EDG project, many of its products and the infrastructure will form the starting point for the new EGEE project. Officially beginning on 1 April 2004, the aim of the EGEE project is build on the recent advances in grid technology and develop a Grid infrastructure across Europe that will be available 24 hours-a-day. The project will primarily concentrate on three core areas. The first area is to build a consistent, robust and secure grid network. The second area is to continuously improve and maintain the middleware in order to deliver a reliable service to users. The third area is to attract new users from industry as well as science and ensure they receive the high standard of training and support they need. The Grid will be built on the EU Research Network GEANT and exploit Grid expertise generated by many EU, national and international Grid projects to date.

The EGEE project community has been divided into 12 partner “federations”, consisting of 70 partner institutions and covering a wide-range of both scientific and industrial applications. Two pilot areas have been selected to guide the implementation and certify the performance and functionality of the evolving infrastructure. One is the Large Hadron Collider Computing Grid and the other is Biomedical Grids, where several communities are facing equally daunting challenges to cope with the flood of bioinformatics and healthcare data.

Fabrizio Gagliardi, former DataGrid Project Leader and Project Director of EGEE, said: “Whereas EDG provided European scientists with the first convincing large-scale demonstrations of a functioning Data Grid, EGEE will make the technology available on a regular and reliable basis to all of European science, as well as industrial Research and Development. Like the World Wide Web, which was initially conceived at CERN for rather specialised scientific purposes, the impact of this emerging Grid technology on European society is difficult to predict in detail at this stage, but it is likely to be huge.”

EGEE is a two-year project conceived as part of a four-year programme, where the results of the first two years will provide the basis for assessing subsequent objectives and funding needs.

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**NOTE TO EDITORS:**

1) For further information please contact Jo Barnett, EGEE External Relations Officer, on +31 (0) 20 530 4487 or email [barnett@terena.nl](mailto:barnett@terena.nl) or Rosy Mondardini, IT Communication Team, on +41 (0) 22 767 4528 or email [Rosy.Mondardini@cern.ch](mailto:Rosy.Mondardini@cern.ch)

2) For further information on Grid Technology, you can also visit:

European EGEE Project - <http://www.eu-egee.org>

European DataGrid Project - <http://www.eu-datagrid.org>

GEANT - <http://www.dante.net/geant/>

Large Hadron Collider - <http://lhc-new-homepage.web.cern.ch/lhc-new-homepage/>

LHC Computing Grid - <http://www.cern.ch/lcg>

3) The European DataGrid (EDG) was a project funded by the European Union. It was led by CERN together with five other main partners and fifteen associated partners. The project brought together the following European leading research agencies: the European Space Agency (ESA), France's Centre National de la Recherche Scientifique (CNRS), Italy's Istituto Nazionale di Fisica Nucleare (INFN), the Dutch National Institute for Nuclear Physics and High Energy Physics (NIKHEF) and the UK's Particle Physics and Astronomy Research Council (PPARC). The fifteen associated partners were: CESNET - Zaymove Sdruzeni Pravnickyh Osob, Communication & Systèmes (CS), Consiglio Nazionale delle Ricerche (CNR), DATAMAT S.p.A., IBM United Kingdom Limited, Helsinki Institute of Physics, Institut de Fisica d'Altes Energies (IFAE), Konrad-Zuse-Zentrum für Informationstechnik, Ruprecht-Karls-Universität Heidelberg, Swedish Research Council (Vetenskapsrådet), Commissariat à l'énergie atomique (CEA), Computer and Automation Research Institute of the Hungarian Academy of Sciences (MTA SZTAKI), Istituto Trentino di

Cultura (IRST), Royal Netherlands Meteorological Institute (KNMI), Stichting Academisch Rekencentrum Amsterdam (SARA).

4) The European EGEE (Enabling Grids for E-Science in Europe) project is funded by the European Union. Lead by **CERN in Switzerland** (European Organization for Nuclear Research) the project consists of 70 partner organisations including: **CYFRONET in Poland** (Akademickie Centrum Komputerowe CYFRONET akademii Gorniczo-Hutniczej im.St. Staszica w Krakowie); **BUTW in Hungary** (Budapest University of Technology and Economics); **CLPP-BAS in Bulgaria** (Central Laboratory for Parallel Processing, Bulgarian Academy of Sciences); **CRSA in France** (Centrale Recherche S.A.); **CNRS in France** (Centre National de la Recherche Scientifique); **CESNET in the Czech Republic** (CESNET z.s.p.o); **CEA/DSM in France** (Commissariat à l'Energie Atomique); **CGG in France** (Compagnie Générale de Géophysique); **CSIC in Spain** (Consejo Superior de Investigaciones Cientificas); **GARR in Italy** (Consortium GARR); **CCLRC in the United Kingdom** (Council for the Central Laboratory of the Research Councils); **CS SI in France** (Système d'Information Communication & Systèmes); **DATAMAT S.p.A. in Italy** (DATAMAT); **DANTE in the United Kingdom** (Delivery of Advanced Network Technology to Europe Limited); **DESY in Germany** (Deutsches Elektronen Synchrotron); **DKRZ in Germany** (Deutsches Klimarechenzentrum GmbH); **ENEA in Italy** (Ente per le Nuove Tecnologie, l'Energia e l'Ambiente); **ELUB in Hungary** (Eotvos Lorand University); **KU-NATFAK in Denmark** (Faculty of Science University of Copenhagen); **FZK in Germany** (Forschungszentrum Karlsruhe GmbH); **FOM in the Netherlands** (Foundation for Fundamental Research on Matter); **FhG in Germany** (Fraunhofer-Gesellschaft zur Förderung der Angewandten Forschung e.V.); **GSI in Germany** (Gesellschaft für Schwerionenforschung GmbH), **GRNET in Greece** (the Greek Research and Technology Network); **IFAE in Spain** (Institut de Física d'Altes Energies); **UNINNSBRUK in Austria** (Institut für Informatik der Universitaet Innsbruck); **GUP in Austria** (Institut für Technische Informatik und Telematik der Joh. Kepler Universitaet Linz); **PSNC in Poland** (Institute of Biorganic Chemistry PAN, Poznan Supercomputing and Networking Center); **IHEP in Russia** (Institute of High Energy Physics); **IMPB RAS in Russia** (Institute of Mathematical Problems of Biology of Russian Academy of Sciences); **ITEP in Russia** (Russian Institute of Theoretical and Experimental Physics); **INTA in Spain** (Instituto Nacional de Técnica Aeroespacial); **INFN in Italy** (Istituto Nazionale di Fisica Nucleare); **JINR in Russia** (Joint

Institute for Nuclear Research); **JSI in Slovenia** (Jozef Stefan Institute); **KIAM RAS in Russia** (Keldysh Institute of Applied Mathematics of Russian Academy of Sciences Moscow); **KFKI RMKI in Russia** (Research Institute for Particle and Nuclear Physics); **LIP in Portugal** (Laboratório de Instrumentação e Física Experimental de Partículas); **MTA SZTAKI in Hungary** (Magyar Tudományos Akadémia Számítástudományi és Automatizálási Kutató Intézet); **ICI in Romania** (National Institute for Research and Development in Informatics); **NIIFI in Hungary** (Office for National Information and Infrastructure Development); **PPARC in the United Kingdom** (Particle Physics and Astronomy Research Council); **PNPI in Russia** (Petersburg Nuclear Physics Institute of Russian Academy of Sciences); **KTH in Sweden** (Royal Institute of Technology - Center for Parallel Computers); **RRC KI in Russia** (Russian Research Centre "Kurchatov Institute"); **CESGA in Spain** (S.A.X. Centro de Supercomputación de Galicia); **SINP-MSU in Russia** (Skobeltsyn Institute of Nuclear Physics of Moscow State University); **SARA in the Netherlands** (Stichting Academisch Rekencentrum Amsterdam); **TAU in Israel** (Tel Aviv University); **Wisconsin-Madison University in the United States** (The Board of Regents for the University of Wisconsin System); **TCD in Ireland** (The Provost Fellows and Scholars of the College of the Holy and Undivided Trinity of Queen Elizabeth near Dublin); **NeSC in the United Kingdom** (The University of Edinburgh); **TERENA in the Netherlands** (Trans-European Research and Networking Association); **UPV in Spain** (Universidad Politécnica de Valencia); **UNICAL in Italy** (Università degli Studi della Calabria); **UniLe in Italy** (Università degli Studi di Lecce); **UniNa in Italy** (Università degli Studi di Napoli "Federico II"); **UvA in the Netherlands** (Universiteit van Amsterdam); **UCL in the United Kingdom** (University College of London); **UiB in Norway** (University of Bergen); **University of Chicago in the United States**; **UCY in Cyprus** (University of Cyprus); **UH.HIP in Finland** (University of Helsinki); **USC in the United States** (University of Southern California, Marina del Rey); **II-SAS in Slovakia** (Ústav Informatiky, Slovenská Akadémia vied); **DFN-Verein in Germany** (Verein zur Förderung eines Deutschen Forschungsnetzes e.V.); **VR in Sweden** (Vetenskapsrådet, the Swedish Research Council); **VUB in Belgium** (Vrije Universiteit Brussel); and **ICM in Poland** (Warsaw University Interdisciplinary Centre for Mathematical and Computational Modelling).