The grid steps up a gear with EGEE III

Geneva, 7 May 2008 – Enabling Grids for E-sciencE (EGEE) is the largest multi-disciplinary grid infrastructure in the world. Finding the Higgs boson; saving lives; addressing the energy problem; feeding the planet - the grid is swiftly becoming one of the extraordinary tools scientists use everyday. This month sees the start of the third phase of the project, EGEE-III, which is revolutionising the way data is analysed, stored and shared.

EGEE-III aims to expand and optimise the Grid infrastructure, which is currently used over 150,000 times per day by users working together on scientific domains ranging from biomedicine to fusion science. Co-funded by the European Commission, EGEE III brings together more than 120 organisations to produce a reliable and scalable computing resource available to the European and global research community. At present, it consists of 250 sites in 48 countries and more than 60,000 CPUs with over 20 Petabytes of storage, available to some 8,000 users 24 hours a day, 7 days a week.

These figures considerably exceed the goals planned for the end of the first four years of the EGEE programme, demonstrating the enthusiasm within the scientific community for EGEE and grid solutions. Ultimately EGEE would like to see a unified, interoperable grid infrastructure, and with this goal in mind is working closely with other European and world wide grid projects to help define the standards to make this happen.

One of the founding cases for EGEE and the grid came from the search for the Higgs boson, or “God Particle”. The computing demands of the Large Hadron Collider, the machine designed to search for the elusive particle, are presenting an unprecedented challenge, with over 15 Petabytes of data to be generated and processed each year. Analysing such a large amount of information will require computing facilities that don’t exist in a single location, but the grid can distribute the workload, and let researchers around the world work together on key problems.

The EGEE infrastructure has also been used to search through over 500,000 drug-like molecules in just a few weeks, to find drugs that will fight against bird flu. Finding potential solutions on the grid before going into the lab means huge numbers of unsuitable molecules can be ruled out without wasting precious time and physical resources. In the instance of a mutating virus this time-saving step could be life-saving.

Other scientists are using the grid to understand the complexity of muscle cells, calculate the dynamics of dark energy, simulate cell processes, predict protein structure, study pollution in the atmosphere and search for the genes that help wheat adapt to new threats. EGEE is opening up unprecedented amounts of computing power to researches across the globe and making it easy for them to share data and results.

The tools and techniques used in one discipline can often be recycled and used elsewhere, by other scientists, or even in the world of business and finance. where EGEE is being used in problems such as finding new oil reserves, simulating market behaviour and mapping taxation policy.

EGEE will hold its next conference, EGEE’08, in Istanbul, Turkey, 22-26 September 2008 (www.eu-egee.org/egee08). The conference will provide the perfect opportunity for both business and academic sectors to network with the EGEE communities, collaborating projects, developers, decision makers alike, to realize the vision of a sustainable, interoperable European grid.

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Notes for editors

The Enabling Grids for E-sciencE (EGEE) project is funded by the European Commission. The project aims to provide researchers in both academia and industry with access to major computing resources, independent of their geographic location. For more information see http://www.eu-egee.org/ or contact Sarah Purcell, EGEE Dissemination, Outreach and Communications Manager, on + 41 22 767 41 76 or email sarah.purcell@cern.ch

The drug discovery application against the avian flu virus was jointly deployed by the Genomics Research Center, Academia Sinica, Taiwan; Academia Sinica Grid Computing Team, Taiwan; National Grid, Singapore; Korea Institute of Science and Technology Information, Korea; Corpuscular Physics Laboratory of Clermont-Ferrand, CNRS/IN2P3, France; Institute for Biomedical Technologies, CNR, Italy,Shanghai Institute of Materia Medica, China, in collaboration with the EGEE project, the AuverGrid regional grid in Auvergne, EUChinaGRID and TWGrid infrastructures. This work was also supported by the EMBRACE network of excellence and the BioInfoGrid project.