EGEE helps achieve international digital broadcasting agreement

Geneva, 11 July 2006 – Over the last two months, the Enabling Grids for E-sciencE (EGEE) [1] project successfully supported a series of large-scale data processing activities being carried out by the International Telecommunications Union (ITU) [2] as part of the ITU's Regional Radiocommunication Conference (RRC-06, 15 May – 16 June 2006) [3].

The purpose of the data processing, carried out at regular intervals during the five week conference, was to rapidly map the consequences of different scenarios being negotiated between the participating countries to establish a new frequency plan for the introduction of digital broadcasting in Europe, Africa, Arab States and former USSR States. This was done using an advanced software suite developed by the European Broadcasting Union (EBU) [4].

As well as relying on the ITU's own computing system with 100 PCs, several sites of the EGEE infrastructure provided a computing Grid of over 400 PCs to work on each analysis in parallel. This simultaneous calculation on the Grid not only came up with the same results in a much shorter time than on the local system, but could also provide extra capacity and additional safeguards on the distributed infrastructure, if needed.

The treaty agreement that was signed as a result of these negotiations heralds the development of all-digital terrestrial broadcast services for sound and television. Conference Chairman Mr Kavouss Arasteh said that RRC-06 was a technically complex process, comprising voluminous computational calculations and data processing tasks, electronic document handling and the use of five working languages.

More than 1 000 delegates representing 104 countries met in Geneva to adopt the treaty agreement that will replace the analogue broadcasting plans existing since 1961 for Europe and since 1989 for Africa. A major challenge faced by the Conference was to find ways for digital and analogue broadcasting to co-exist on

Monitoring image of the EGEE sites involved in supporting the ITU data processing challenge.

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the radio-frequency spectrum during the transition period without causing interference. A key ingredient for the success of the Conference was the unprecedented level of cooperation between ITU, the EBU and the local EGEE project representatives at CERN, the European Organization for Nuclear Research [5].

Speaking on behalf of EGEE and CERN during one of the plenary sessions at the ITU conference, Dr. Wolfgang von Rüden, Head of CERN's IT Department, described how Grids could provide dependable computing service on demand also for time-limited computational challenges like the one facing the ITU. Using a relatively small subset of a few hundred of the EGEE Grid infrastructure's estimated 20 000 PCs, it was possible to reduce the time of the most demanding analysis step being carried out during the conference from about four hours on the local cluster to well below one hour on the Grid. The porting of the analysis program to the Grid proved relatively easy, and thanks to the very good collaboration between the participating institutions, Dr. von Rüden could demonstrate to delegates another powerful example of the benefits of Grid technology and invited them to support the ongoing efforts in creating National Grid Infrastructures as well as a coordinating European organisation.

The EGEE sites involved in supporting the Grid effort were CERN, several INFN sites in Italy (CNAF, Bologna, Bari and Pisa), PIC (Barcelona, Spain), CNB (Madrid, Spain), DESY (Hamburg and Zeuthen in Germany), ACC CYFRONET AGH (Krakow, Poland) and Moscow State University (Russia).

Notes to Editors

[1] The Enabling Grids for E-sciencE 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. http://www.eu-egee.org

[2] ITU, the International Telecommunication Union, headquartered in Geneva, Switzerland, is an international organization within the United Nations System where governments and the private sector coordinate global telecom networks and services. http://www.itu.int

[3] http://www.itu.int/ITU-R/conferences/rrc/rrc-06/index.asp

[4] EBU, the European Broadcasting Union, is the largest professional association of national broadcasters in the world. Working on behalf of its Members in the European area, the EBU negotiates broadcasting rights for major sports events, operates the Eurovision and Euroradio networks, organizes programme exchanges, stimulates and coordinates co-productions, and provides a full range of other operational, commercial, technical, legal and strategic services. http://www.ebu.ch

[5] CERN, the European Organization for Nuclear Research, has its headquarters in Geneva. At present, its Member States are Austria, Belgium, Bulgaria, the Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Italy, the Netherlands, Norway, Poland, Portugal, the Slovak Republic, Spain, Sweden, Switzerland and the United Kingdom. India, Israel, Japan, the Russian Federation, the United States of America, Turkey, the European Commission and UNESCO have observer status. http://www.cern.ch

Last Update: 11/07/2006