Contribution ID: **164** Type: **Poster**

Job management and control in Earth Science

Describe the scientific/technical community and the scientific/technical activity using (planning to use) the EGEE infrastructure. A high-level description is needed (neither a detailed specialist report nor a list of references).

Earth Science (ES) covers a large range of topics related to the solid earth, atmosphere, ocean and their interfaces as well as planet atmospheres and cores. Examples of ES research areas are meteorology, hydrology, geology and geophysics. DEGREE is a Specific Support Action (SSA) project which aims to promote GRID throughout a large and diverse Earth Science community, in order to increase the awareness and uptake of GRID technology and infrastructure by EU Earth Science Industry and Res

Report on the experience (or the proposed activity). It would be very important to mention key services which are essential for the success of your activity on the EGEE infrastructure.

The requirements of job management and control in Earth Science communities can be classified into following areas: workflow management, fault tolerance, near-realtime job execution and job monitoring. Most important missing technologies are near-realtime job executions, that are required by applications dealing with risk managements, and QoS for applications running in full operation modes. The test suites have been created with two applications: Centroid Seismic Moment Tensor (CMT) and Flood Forecasting Simulation Cascade (FFSC). Each ES application consists of the application software, data, database schemas, documentation and contact points for technical and scientific support. The test suites can help developers to check if the their Grid middleware and tools can satisfy the ES requirements.

Describe the added value of the Grid for the scientific/technical activity you (plan to) do on the Grid. This should include the scale of the activity and of the potential user community and the relevance for other scientific or business applications

ES applications deal with numerical modeling, which requires vast amounts of computational powers. Grid would be the key technology for providing such computational power for ES applications. However, despite the enthusiasm of the Earth Science pioneers, exploitation of Grid technologies in ES is not a trivial task. Between the Grid and the ES applications, there persists a significant gap due to complex computing protocols in Earth Science. In the DEGREE project, the requirements of ES applications have been collected and analyzed, and the missing technologies required for full operation of ES applications in Grid infrastructures are identified. We also provide suggestions for improvements and test suites with well-documented test specifications and real applications plus data to the Grid developers.

Author: TRAN, Viet (Institute of Informatics, Slovakia)

Presenter: TRAN, Viet (Institute of Informatics, Slovakia)

Track Classification: Demo and Poster session