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Earth Science Application overview in EGEE infrasctructure

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) is an all-embracing term for sciences related to the planet earth covering a large and diverse user community, Academy, organisation and industry. Since 2000 within DataGrid and CrossGrid ES applications from various domains have been ported on a Grid infrastructure. Examples of thematic area are atmospheric chemistry by satellite and simulation, climate, seismology, hydrology, geology, geophysics...

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.

Many ES applications have been ported on EGEE. It would be important to provide some overview and describe the requirements related to each application, the solution adopted and the interest to use the Grid. The examples shown concerns the ozone chemistry, climate, earth quakes, seismology simulation, exploration of the geoscope database, hydrology (flood and water management), Geocluster, a company software....and many others

In conclusion it would mention the key Grid services needed for those applications and the ES expectation for other key services.

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

The interest to use a Grid infrastructure for the ES community is related to problems difficult to solve on a local or national computing infrastructure even high-power one. The typical applications for which Grid presents a large interest are related to the use of statistical approaches (monte Carlo method, ensemble of jobs..), to sharing data or algorithm, to performing a very large number of independant jobs that permits to have a rapid solution and also to take advantage of a large number of CPUs a needed at one moment and not on a routine base.

T ES applications, already ported, provide some results published in international journal and conference proceedings and included in PhD report. Those results are a mean to convince the ES community of the potentiality of the Grid infrastructure like EGEE.

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