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Earth Science Requirements related to actual applications

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Describe the activity, tool or service using or enhancing the EGEE infrastructure or results. A high-level description is needed here (Neither a detailed specialist report nor a list of references is required).

The DEGREE (Dissemination and Exploitation of Grids in Earth science) project was based on the fact that there were gaps between the Earth Science requirements and the Grid middleware and tools available. Providing only requirements is not sufficient and may lead to their misunderstanding or misinterpreting by possible lack of ES domain knowledge. The requirements have been associated with ES application examples. 8 ES typical applications were used to build test suites.

Report on the impact of the activity, tool or service. This should include a description of how grid technology enabled or enhanced the result, or how you have enabled or enhanced the infrastructure for other users.

The test suites so elaborated consist of a set of test cases, each of them related to one or several requirements. For each test suite a package is provided containing the test suite description, the procedure to deploy it and the application software and data. This permits not only to test some functionalities like use cases do but also to test the scalability features and application workflow. A test suite permitted to evaluate the different database tools in terms of functionalities provided. Test suite have also permitted to evaluate different Grid middleware and tools as it concerns the data management, job control and management and portals or interfaces. The impact will be to propose existing tools interoperable with EGEE to the ES users and require the development of new tools or services to the Grid community in order to fulfil some important requirements

Describe the added value of the grid for your activity, or the value your tool or service adds for other grid users. This should include the scale of the activity and of the potential user community, and the relevance for other scientific or business applications.

The ES community consists of academic and private research and operational activity led by organisations like Space agencies, Meteorological offices ⋯and companies. For the ES community Grid is and will be an important technology to exploit and share large data sets, to share algorithms already deployed on Grid, to carry out statistical approach, to get rapid solutions in case of many independent jobs, and finally to be a collaborative platform for teams distributed over the world. Grid could be used in complement of super computer for pre-processing of input and post-processing of the outputs of HPC, for example for climate. So far the ES community in general was reluctant to use Grid due to the difficulty to implement easily ES environment, and to port complex applications. The test suites was elaborated from typical and actual ES applications to permit to test Grid middleware and tools and provide feedbacks to the Grid and user communities.

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