Dissemination and exploitation of Grids in Earth Science

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Earth Science (ES) is an all-encompassing term for sciences related to the planet Earth like seismology, geology, hydrology, and meteorology. DEGREE is a Specific Support Action (SSA) project that aims to promote Grid technologies throughout the large and diverse Earth Science community as a platform for e-collaboration in academic and industrial organizations.

The key requirements of ES applications on data management, job management and portal technology have been identified and analyzed in five ways: (1) A panel of representative ES applications have been analysed; (2) Existing data management tools and policies that are being used in ES applications are surveyed in order to find common required features of ES community; (3) The existing Grid data management technologies have been analyzed in order to provide the solutions for the requirements; (4) The available Grid middleware and tools for job submission and workflow management have been analyzed and several missing features required by ES applications are identified; (5) Existing Grid portals for ES applications are surveyed for creating common Grid based portal and service oriented architectures for ES applications.

The aim of DEGREE project is to create a bridge between ES and Grid communities in order to influence the next generation of Grid technologies with accordance to ES needs. The requirements of ES applications and identified missing technologies are delivered as feedback to developers of Grid middleware. To better understand the requirements, test suites have been created with typical ES applications and test cases for realistic illustration of the requirements. Grid developers can use the test suites for

testing and validating their middleware and tools. Roadmaps for building and promoting Grid technologies in ES communities are being created for new ES applications.

The work in DEGREE project will increase the collaboration and close the gaps between ES and Grid communities. It delivers feedback from ES communities to Grid developers and will promote and widen the use of Grid technologies in ES applications. This will help to shape the next generation of common Grid platforms for ES applications.