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GEO-GRID - A community grid for the earth- and environmental sciences

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Understanding Earth as a system is seen by the geosciences as fundamental to understanding the global challenges we face today, such as climate change or degradation of the natural environment. These challenges can only be met by interdisciplinary cooperation between the earth sciences and other branches of science and engineering. Modern information and communication technologies offer the chance to improve the scientific, technological and management basis necessary to work on complex scientific questions and transfer the results into application. This new type of technology assited science is called eScience - 'enhanced science'. GEO-GRID is the framework to build a generic eScience platform for the Earth- and Environmental Sciences, linking together geodata sources, geosciences libraries, and compute services. The platform will also supply a new generation of tools for the exploration and visualisation of available information. It will help create added value by interdisciplinary integration in fundamental research and development, as well as supporting technology transfer into application.

GEO-GRID approaches eScience with an integrated concept. Building an eScience platform requires the development of technology and the availability of content, but it also requires to promote a favourable science policy environment and establish new ideas in knowledge- and science management. This integrated approach assures a well balances process of transformation of the Earth- and Environmental Sciences into an eScience community. We can expect GEO-GRID to give us new tools for the utilisation of information in the Earth- and Environmental Sciences. Examples are the 'Living Publication', which unites scientific publication with the publication of data, an ontology service to manage semantic interoperability between information systems, and new services for the exploration of data of the subsurface, such as the 3D GeoExplorer. Besides technical innovation, GEO-GRID will also facilitate innovation of

organisational models and process organisation which are aimed at advancing science management methods.

GEO-GRID is coordinated by GeoForschungsZentrum Potsdam (GFZ). The consortium presently has nine members. The German Remote Sensing Data Center of the German Aerospace Agency (DLR-DFD), the Centre for Environmental Research (UFZ Leipzig), the German Geological Survey (BGR) and the Leibniz Institute of Marine Sciences (IFM-GEOMAR), together with GFZ Potsdam, combine many years of experience in the handling and processing of satellite, environmental and lithosphere data. Essential contributions to GEO-GRID come from the participating libraries at the University of Göttingen, the Technical University School of Mines Freiberg, BGR and GFZ. In addition, the consortium has considerable expertise in data- and information management for the geological sciences. The consortium is completed by two industrial partners. The consultancy b&p Spatial Business Integration has many years of experience in the optimisation of research and business processes in geoinformation, while lat/lon is an active player in the field of geospatial technology development and implementation. The project is scheduled for a duration of three years, starting July 2006.