Design and implementation of the GEO Grid

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The authors have been leading the GEO (Global Earth Observation) Grid project which is primarily aiming at providing an E-Science infrastructure for worldwide Earth Sciences community. In that community, there are wide varieties in their data sets including satellite imagery, geological data, and ground sensor data whose data owners insist their own licensing policy. The GEO Grid is designed to integrate all the relevant data virtually, enabled by Grid technology, and is accessible as a set of services. In this presentation, firstly we describe design principles of the GEO Grid that are determined based on accommodating users requirements for publishing, managing, and using data. Secondly, we introduce preliminary implementations such as database federation for satellite imagery, data processing, and landslide application, which are deployed in each virtual organization (VO).