

**GEO Grid for E-Science Infrastructure**  
**integrating satellite and ground sensing data**  
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**Abstract**

The “GEO Grid” –Global Earth Observation Grid - is ambitious concept to integrate whole data related to the earth observation so that it would help people understand the earth much more productive than ever. The concept aims at contributing to the solving of global social problems such as environment conservation, resource exploration, natural disaster prevention, and risk management. It also supports new business model services combined with urban information, geographical information, social news, etc.

The marriage of grid technology to the global earth observation allows us to build a system to provide securely and rapidly large archives of earth observation satellite data and integrated service with various observation databases and GIS data, and make them easy-to-use for users. The core contents of the system are the observation data from the earth observation satellite (ASTER) of the METI, Japan and geoscientific information, such as geological and environment technology data, accumulated for a long period of time at AIST. As a core technology, the GEO Grid provides international standard compliant grid technology and develops systems. The key features of the GEO Grid system are as follows:

- 1) Provide Remote sensing data on-demand as the base map generated from primary ASTER and PALSAR,
- 2) Provide standard web service interface to compose applications including OGC service and working well with any OGC compliant browser
- 3) Adopt grid technology to accommodate applications with workflow hosted by Data Grids for the base map and Computing Grids for applications, map on-demand