GEO Grid: AIST on Understanding Earth Observation

The National Institute of Advanced Industrial Science and Technology (AIST), Japan's largest public research organisation employing around 3,200 people, is an independent administrative institution associated with the Ministry of Economy, Trade and Industry (METI). It conducts research and development in six fields: Life Science and Technology, Information Technology, Nanotechnology, Materials and Manufacturing, Environment and Energy, Geological Survey and Applied Geoscience, and Metrology and Measurement Technology.

Secure Use
The AIST Grid Technology Research Center (GTRC) is one of the units in Information Technology. Grid technology, or high-performance distributed computing, focuses on infrastructure for the stable and safe supply and secure use of today's IT services, much as do infrastructures delivering electricity, water and gas. The AIST GTRC engages in research and development of middleware technologies that make virtual and integrate information resources such as servers, storage and networks.

International
GTRC's mission is firstly to engage in technology demonstration and technology transfer activities and proactively work with users of grid technology. Secondly, it aims to actively participate in international standardisation efforts and promote standardisation in the Asia-Pacific region. Thirdly, it wants to accelerate commercialisation of grid technology through industry, academia and government collaboration. Under the terms of this mission the GTRC GEO Grid (Global Earth Observation) Team supports the GEO Grid project, a co-operative activity involving many domestic and international organisations. The OGC is the principal international standardisation effort for geospatial grid applications, and OGC standards are important in GEO Grid.

Minimising Risk
The various global problems faced by present-day society must be solved on the basis of common awareness as we acquire shared and in-depth knowledge of the earth we live in. Construction of the GEO Grid system is indispensable as it promises high reliability and continuity for solving problems of many kinds relating to precise predictions for preservation of the global environment, efficient use of energy resources, and mitigation of natural disasters. It minimises future risk and helps in building a safe and secure society. As people around the world recognise the need for an Earth Observation system that serves as a common basis for all, standards become a main focus of interest.

High Speed
Through the development of GEO Grid, a large-scale earth observation information archive is set up containing satellite-observation and other sorts of data. At the AIST we are developing technology that can safely provide high-speed data through services hosted on various earth-observation databases and Geographic Information Systems (GIS). We are involved in merging the diverse research fields of geology, energy, environmental and information technology. OGC service interface standards provide an essential means of data integration between the geospatial systems contributing to this web-based system.