

# Advancing the utilization of geospatial information

## Basic Act on the Advancement of Utilizing Geospatial Information

The Basic Act on the Advancement of Utilizing Geospatial Information (NSDI Act) is a law for advancing the intensive utilization of geospatial information and realizing a geospatial society where the people of Japan can lead safe and prosperous lives.

Working with industry, academia, and governmental agencies, the national government has set up the Committee for Advancing the Utilization of Geospatial Information. GSI is coordinating communications and partnerships with these entities as the committee's secretariat.

## Geospatial EXPO

Geospatial EXPO is an event where officials from industry, academia and government get together and present their services, products and the latest techniques related to geospatial information to the public through exhibitions, talks, symposiums and hands-on activities. (In 2021, held both on-site with thorough infection prevention and online (on demand), given concerns about the COVID-19 pandemic).

As host secretariat, GSI organizes and manages the Geospatial EXPO. GSI also holds the Geospatial Activities Competition\* and exhibits the work of GSI at this event.



Geospatial EXPO 2021



Awards ceremony for the Geospatial Activity Competition



Geospatial Activity Competition

\* The Geospatial Activity Competition is an event to introduce various aspects of "efforts", "ideas" and "services" related to geospatial information in Japan through exhibits and presentations. This event is designed to promote the use of geospatial information through exchanges between participants and visitors to showcase the best examples of education and popularization, the creation of new services, and so on.

## Local partnerships

### Agreement related to cooperation for promoting the utilization of geospatial information

On 9 November 2021, the city of Mishima, Shizuoka Prefecture, signed an agreement with GSI to work together to advance the utilization of geospatial information. To promote the mutual use of GSI's geospatial information with local public organizations, GSI is building a face-to-face relationship with technical staff through local survey sections. This helps to share information and technology, and contributes to the realization of a rich geospatial information society in the local area.



## Kansai Geospatial Forum

In order to contribute to the realization of a society which utilizes a high level of geospatial information (that is, a "geospatial society"), local representatives of industry, academia and government share information and exchange opinions. With the theme of "advancement of the geospatial society and the future image of geospatial information" the 2021 Kansai Geospatial Forum became a web meeting of roughly 200 participants from the national government, local public organizations, businesses, and universities.

# Research and development for a resilient Japan for the future

## Research and technological development

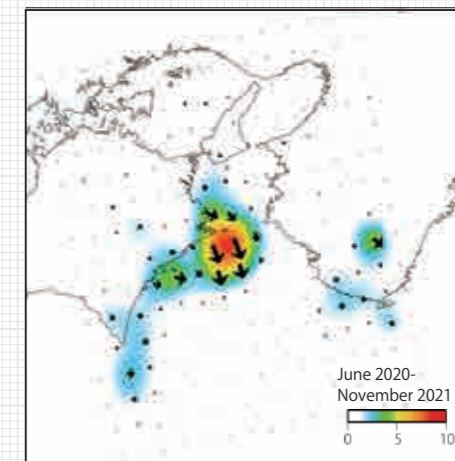
### Unraveling the mechanism of the Nankai megathrust earthquakes

Experts are saying that a huge earthquake could occur in the near future around the Nankai Trough which extends offshore along the coastline from the Tokai Region to the Kyushu Region.

One of the phenomena that may occur before such a huge earthquake is a change in asperities at a plate boundary. Therefore, it may be of great importance to focus on monitoring such changes.

Furthermore, it is known that the Nankai Trough slides at a slow pace (slow slip), and there are repeated releases of seismic energy that has built up. Experts point out that even slow slip might have an effect on the occurrence of a major earthquake.

In order to understand the various phenomena that are involved in the occurrence of such a major earthquake, the slow slip of the asperities of the Nankai Trough is being subjected to research and development in order to gain a more accurate and constantly updated understanding of these phenomena.



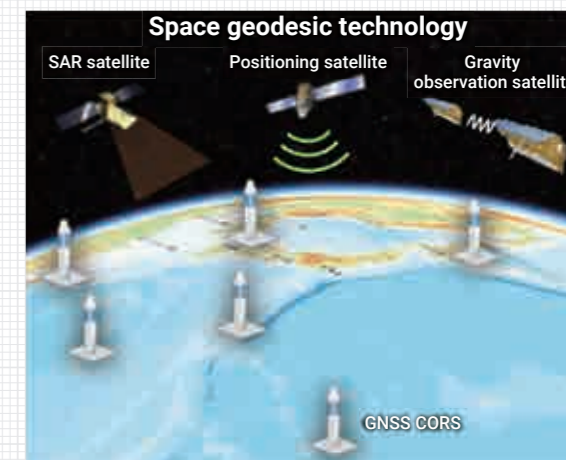
Slow slip that is occurring in the Kii canal

### Constructing location information is a basis for supporting the future society

Japan is located in a zone where numerous natural disasters such as earthquakes and volcanic eruptions occur. When a major earthquake or volcanic eruption occurs, deformation of the ground surface quickly occurs, so benchmarks and map position references lose their conformity with the current conditions.

However, in order to quickly undertake recovery and restoration work after a major earthquake, it is necessary to coordinate basic position reference information from benchmarks, maps, etc., with current conditions.

Therefore, in order to be able to update and provide position information as quickly as possible, research is being carried out to improve space geodesic technology for rapidly measuring the shape of the Earth and measure its changes with a high degree of spatial resolution.



### Research related to improving the accuracy of estimating the state of ground damage caused by an earthquake

GSI operates a device called SGDAS (Seismic Ground Disaster Assessment System), which uses topographical data held by GSI and seismic intensity estimates released by the Japan Meteorological Agency (JMA) to estimate the location of potential ground disasters (landslide and liquefaction) immediately after the occurrence of an earthquake. SGDAS automatically delivers the estimated report to national disaster prevention agencies and local governments immediately after an earthquake, and is used for initial response.

Based on the occurrence of seismic and ground disasters which has been reported in recent research results, and the relation between changes in meteorological environments in recent years, research is being conducted to improve the accuracy of estimates by taking the effects of new additional data into account.

