Development of geospatial data and trends of open access

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Geospatial data are fundamental for various social activities and academic research. The acquisition and utilization of geospatial data have been supported by rapidly developing technologies such as remote sensing, GIS, the Internet, and artificial intelligence. Some geospatial data are commercial products, and some are freely accessible public domains. In the 1990s, the US Government promoted the acquisition of national geospatial data and open-access distribution. Other developed countries including Japan also adopted similar systems in the 21st Century. Even private companies such as Google distribute free geospatial information. Furthermore, numerous volunteers over the world also contribute to the production and distribution of free geospatial data such as OpenStreetMap.

There are also abundant commercial geospatial data provided by private companies and cooperation bodies, and some of them are useful for scientific research. CSIS (Center for Spatial Information Science) at the University of Tokyo has been operating a data sharing system of such commercial data for academic researchers. CSIS buys a set of data with a special contract with the data distributor, so that researchers whose research proposals are approved by CSIS can freely access the data. Because of this system, various researchers in Japan and other countries have been using some commercial data without buying them individually. CSIS also collects and distributes data produced by individual researchers; for example, a data set constructed by a young researcher for his PhD thesis is currently managed by the data sharing system of CSIS.
In Japan, production and utilization of geospatial data have been developing in relation to natural disasters. Soon after the 1995 Great Hanshin earthquake, people recognized the importance of geospatial data and GIS for rescuing and supporting affected people as well as regional reconstruction, and the Japanese Government initiated related national projects. After the 2011 Great East Japan Earthquake and Tsunami, activities using geospatial data and GIS such as the preparation of hazard maps were also enhanced. Open access to geospatial data is required for effective hazard mitigation, because it enables efficient rescue activities and various assessments. Open access to educational materials to learn how to utilize geospatial data and GIS is also important for human resource development, and relevant projects are ongoing.

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