Promoting the Administration of Land Surveys

Giving Advise on Public Surveys as the Competent Governmental Authority under the Survey Act

Public works such as road constructions and river improvement for disaster prevention are conducted in many places around us. Planning and designing these public works always accompany survey works that develop maps and that determine the reference of locations. GSI, as the competent governmental authority under the Survey Act that aims at ensuring accurate and efficient surveys, offers advice on survey works and examines the survey results so that survey works can be conducted smoothly in Japan.

Improving Productivity by Introducing New Technology - Using Unmanned Aerial Vehicle -

The Ministry of Land, Infrastructure, Transport and Tourism (MLIT) is promoting a program called i-Construction, which aims to enhance the appeal of work at construction sites with improved productivity by introducing Information and Communication Technology (ICT) and other tools. As drawing elevation profiles from 3D model helps to understand a landform in detail, the application of 3D model and further use of the latest survey technology including UAV that can develop a 3D model is expected in various processes at construction sites. In this context, GSI has developed the “Public Survey Manual using UAV (Tentative),” which describes how to make a 3D model by analyzing aerial photographs taken from UAV and released it from its website. The manual is now widely referred in survey works because 3D models can be efficiently developed with a certain quality. In addition, GSI staff members are striving to improve their skills and accumulate know-how on operating UAV to properly respond to inquiries about such technology.

Photographing by UAV and developing a 3D model

Efforts in Public Surveys

Surveys are classified into Basic Surveys conducted by GSI, Public Surveys conducted by the national and local governments, and others.

“Operating Specification” that stipulate the type of survey machinery, survey and calculating methods, and methods of map making must be made when national and local governments conduct Public Survey (Article 33, the Survey Act). GSI stipulates the “rules for Operating Specifications,” setting the standard work method and other aspects, as an example of Operating Specifications (Article 34, the Survey Act), and also developed manuals for surveys using new technology including vehicle-mounted, UAV-mounted, and terrestrial laser scanners to respond to new technologies. GSI has released these manuals on its website. The “Rules for Operating Specifications” are updated appropriately by incorporating a survey method in accordance with the manual for new technology. GSI gives technical advice on Public Surveys and examines the results. When the national and local governments submit a plan for conducting a survey, GSI examines the content, such as appropriateness of the method in view of its purpose, the accuracy, and possibility of duplication with past surveys, and then provides technical advice (Article 36, the Survey Act). Once a Public Survey is completed, GSI examines the results submitted by the national and local governments (Article 41, the Survey Act); Public Survey results considered as fully accurate in this examination are widely used, for example, to develop maps for daily use.

Japan Profile for Geographic Information Standards (JPGIS)

Geospatial standards include international standards (ISO standards) and Japanese Industrial Standards (JIS). However, these standards include many rules that are not generally used in Public Surveys. Therefore, GSI has compiled minimum sets of necessary rules for Public Surveys as the Japan Profile for Geographic Information Standards (JPGIS) and keeps them updated. By following JPGIS, Public Survey results are consequently compliant with the latest international standards.

Examination and Registration of Surveyors and Assistant Surveyors

Surveyor and Assistant Surveyor are national certifications required to engage in Basic Surveys and Public Surveys. Surveyors make survey plans and conduct survey work, while Assistant surveyors are in charge of the survey in accordance with the plan made by surveyors (Article 48, the Survey Act). GSI conducts examinations and registration of surveyors and assistant surveyors.

Eligibility Requirements (Articles 50 and 51, the Survey Act)

Surveyor
- Academic background and work experience: To acquire credits for subjects concerning the survey at a university, junior college or national institute of technology; to graduate from the above-mentioned school; and to have the prescribed practical experience;
- To obtain professional knowledge and skills at a survey technical training school and to have prescribed practical experience in surveying;
- To be an assistant surveyor who has acquired advanced knowledge and skills in surveying and a survey technical training school;

Exam: To pass the surveyor examination held by GSI

Assistant Surveyor
- Academic background: To acquire credits for the subjects concerning the survey at a university, junior college or national institute of technology and to graduate from the above-mentioned school;
- To obtain professional knowledge and skills at a survey technical training school;

Exam: To pass the assistant surveyor examination held by GSI