A brief statement of our organization's activities in photogrammetry, remote sensing and geographic information systems

The School of Geomatics and Urban Spatial Information began in 1936 as the Department of Measurement and Teaching, later renamed as Surveying and Mapping Engineering in 1973, Surveying and Mapping in 1999, and the Institute of Surveying and Urban Space Information in 2006. Over the past eighty years, the School has been undergoing transformative change in student training, scientific research, services to the society and international cooperation and reputation.

As the home of the key discipline on surveying and mapping in Beijing, the school offers 3 undergraduate programs, 5 master's programs, 1 doctoral talents training project and 1 postdoctoral scientific research mobile station. The School has three provincial and ministerial level scientific research bases, was ranked the ninth in the national discipline review, and shortlisted for Beijing high-tech innovation center on "future urban design ".

The school currently has 45 faculty members, of which 92% have a doctoral degree. Many faculty members have been selected by various talent programs in Beijing and at national levels due to their excellent teaching and research achievements. The School has three undergraduate programs: Surveying and Mapping Engineering, Geographic Information Science, and Remote Sensing Science and Technology. Among these programs, the Surveying and Mapping Engineering program is a Beijing Specialty Program, and has been approved by the Ministry of Education as the one of the first pilot undergraduate programs for comprehensive reform.

Subject Orientation

(1) Precision measurement of large and complicated architectural structures

Focusing on the large and complicated architectural structures, this research area mainly studies high-speed video measurement, collaborative multi-sensor 3D construction surveying with high precision, virtual positioning and assisted installation of building structures by combining forward and backward models, and theory and methods for monitoring health condition and deformation of building structures by terrestrial SAR and tomography SAR. The research has developed a complete theory and technology system for precision surveying of architectural structures from safety testing of model vibration table in design stage through assisted installation and quality control in construction stage to health and safety inspection during operation and maintenance. Research results have been successfully applied to the construction of many national and local landmarks such as national stadium, national grand theater and China Zun Tower. The research team has received the second-place prize of the State Science and Technology Progress Award for their achievements.

(2) Fine management of urban operations

Focusing on the fine management of urban operations by integrating spatial information technologies, internet of things and other information technology, this research is a mainly investigates key technologies for smart monitoring of urban operation internet of things, traffic monitoring and simulation, urban supply chain coordination mechanisms, simulation and emergency management of unexpected events, and GIS software quality assessment, to solve problems of location-based services, smart sensing, simulation and command and decision-making in urban operation, emergency management and command decision- makings. The research team has produced more than 10 authorized patents, developed 1 national standard and over 10application systems for automatic GIS

software testing and fine urban operation management of, and won 1 first- place awards and 4 second-place awards at the provincial or ministerial level.

(3) Digital Architectural Heritage

This research area mainly focuses on digital architectural heritage, especially precise modeling and health condition monitoring of architectural heritage by integrating remotely- sensed data and ground-based measurements from multi- sensors, virtual restoration of cultural relics, and theory, technologies and methods for nondestructive identification of cultural relics using multi-spectral or higher-spectral imagery. The team, as one of earlier groups that conducted digital architectural heritage protection, has developed a set of technologies for precision surveying and 3D reconstruction of ancient architectures with large wooden structures, health detection of stone relics and virtual restoration. The team has also completed the digital protection of a series of famous ancient architectures including Forbidden City and Yungang Grottoes, and built the biggest ancient architecture database in China. Researchers of the team have won the first place of the national teaching award in 2014 and4 provincial science and technology achievement awards.

Over the past 5 years, the faculty members of the School has completed more than 20 national-level research projects under the programs such as the National Program on Key Basic Research Project of China (973 Program), the National High-tech R&D Program of China (863 Program), the National Key Technology Research and Development Program of the Ministry of Science and Technology of China, the National Sector Commonwealth Program and the National Natural Science Foundation, over 30 provincial-level projects, and more than 100 projects supported by local governments and industry, reaching nearly 90 million research funding. In addition, more than 100 papers have been published, including 50 SCI-indexed, EI-indexed or ISTP-indexed papers.