



Tianjin Orthophoto & 3D Model Created with A3 Digital Mapping System

The Tianjin Institute of Surveying and Mapping, an organization within the Tianjin Planning Bureau, specializes in aerial survey and mapping projects and in geographic information.

Since its founding in 1952, the Tianjin Institute has completed hundreds of key mapping projects for the Chinese Government, Tianjin Municipal Government and Tianjin Planning Bureau, for such applications as urban and rural planning, and resource management, and more.



The Challenge

The Tianjin Institute was assigned a large-scale project by the State Council of the People's Republic of China and the National Administration of Surveying and Geo-information (NASG). The objective was to create a 12.5 cm resolution orthophoto and 9 cm resolution 3D model of Tianjin, with a capture area spanning 14,000 km². Accuracy requirements corresponded with a 1:2000 orthophoto scale.

Tianjin is a densely populated metropolis in northern China, and one of the country's four national central cities. The Tianjin Institute faced several challenges in mapping this vast area. First, they were required to complete the capture before the spring leaves blossomed (to avoid obstruction of the view from above). In addition, the local weather is generally problematic, with haze apparent year-round.

The Institute required a system that offered extremely efficient aerial capture, as well as highly automated processing to reduce manpower costs. The aircraft to be flown was the Y12.





The Solution

The Tianjin Institute executed the project with the VisionMap A3 Digital Mapping System. The A3 system was chosen for its simplicity, ease-of-use, and end-to-end productivity.

The compact A3 camera (weighing only 42 kg) is simple to install and operate. Its 300 mm focal length enabled the Institute to fly at an altitude of 13,500 ft. while capturing an impressive 1000 km² of high resolution imagery per hour. Such efficient capture made optimal use of each scarce good weather day, and as a result, the Institute was able to complete the crisscross survey of the entire area in less than three months. Furthermore, the camera's simultaneous collection of vertical and oblique imagery was ideal for the 3D model creation.

Processing high resolution imagery for a project of this size would normally be very labor intensive and time consuming. However, VisionMap's LightSpeed photogrammetric processing system automated the most tedious tasks, single-handedly doing the work of several teams. Following processing by LightSpeed, a high resolution 3D model of the area was automatically generated using Bentley's Smart3DCapture™ software, which is tightly integrated with VisionMap's systems.

The Tianjin Institute successfully delivered the orthophoto and 3D model, both meeting the accuracy and resolution requirements, within three months of completing the capture.

Customer's Response

The Tianjin Institute was pleased with VisionMap's A3 camera and LightSpeed automatic processing system, which simplified for them the complex task of capturing and processing such a large area.

Yu Haibo, the Institute's Chief of Information Engineering stated, "We have been doing this project every two years, and used to spend about five months capturing the same area, and five more months processing it. The A3 system saves us 40% in time and manpower."



VisionMap is a leading provider of state-of-the-art digital aerial survey and mapping systems. It's innovative data acquisition and automatic processing systems optimize mapping work, setting a new standard for productivity in the geospatial data industry.

The systems support extremely large scale projects and automatically produce Aerial Triangulations, DSM and Orthophoto mosaic as well as Stereo Models and Geo-referenced Oblique images. VisionMap systems are successfully deployed around the world.

For more information, visit www.visionmap.com