

Beijing Xing Tian Di Reduces Costs and Significantly Cuts Processing Time with Fully Digital Workflow



THE CHALLENGE:

Until late 2003, only film-based analog mapping cameras were used in China to capture new imagery of the country. This meant substantial turnaround times from image capture to orthophoto and digital terrain model (DTM) generation due to manual processing and scanning procedures, slowing the availability of up-to-date maps. In addition, current mapping data used by many government authorities was out-of-date and unsuitable considering the rate of development. With demand for up-to-date photogrammetric products growing more rapidly than photogrammetric firms' capability to address these needs, digital data acquisition offered an attractive alternative to traditional film-based acquisition because of its decreased cost and shortened delivery times. Additionally, current digital aerial cameras offered many innovations that ensured the capture of precise and accurate imagery under various weather conditions.

THE PROJECT OBJECTIVES:

- Provide customers with more accurate and high-quality orthophotos
- Cut processing time significantly with digital technology
- Reduce costs with fewer flights needed for data acquisition

THE SOLUTION:

Recognizing the opportunity to gain a competitive edge, Beijing Xing Tian Di capitalized on China's growing need for digital imagery and turned to Intergraph's Z/I Imaging® DMC® (Digital Mapping Camera). During the first few months using the camera, Beijing Xing Tian Di took approximately 60,000 photos using the digital camera, averaging 2,000 photos per flight compared with 400 to 800 photos per flight using the previous film-based camera. Customers were so impressed with the quality and accuracy of the imagery, the company decided to purchase a second DMC to keep up with increased orders.

The company has saved costs with fewer flights needed for data acquisition and reduced time and costs in film processing and development. The digital camera is not as dependent on weather as film cameras and provides a greater window of opportunity for flights, such as in the early morning and late afternoon.

PROFILE:

Name – Beijing Xing Tian Di

Beijing Xing Tian Di integrates scientific research, software development, and technology trade, and also offers services for spatial remote sensing, geographic information systems (GIS), and global positioning systems (GPS). The company is a leading supplier of digital terrain models and orthophotos for various Chinese government clients, including local land and planning bureaus and utilities.

KEY BENEFITS:

- Beijing Xing Tian Di quickly provides customers with more accurate and high-quality orthophotos – replacing outdated, existing film-based photography
- The DMC greatly enhances accuracy and image quality
- Digital technology has cut processing time - from a few months to less than a week
- All images are stored on a central server that can be accessed by staff members working on photogrammetric processes

PRODUCTS USED/SERVICES PROVIDED:

- Z/I Imaging® DMC® (Digital Mapping Camera)

Beijing Xing Tian Di now runs a fully digital workflow and has retired its scanners and film-based camera. The company has transformed its workflow to meet customer requirements, while keeping it almost identical to the film-based workflow. Employees do not have to move or copy large mount images between servers and workstations since all images are stored on a central server that can be accessed by the staff.

Since most customers require true-color photographs, Beijing Xing Tian Di uses the DMC to generate three separate end products – black and white, natural color, and false-color infrared – from a single airborne data set. The DMC is designed with eight individual camera modules that capture a central perspective view, producing an overall image with higher optical performance.

Beijing Xing Tian Di has fully justified the risk of being the first to invest in a digital camera. Digital technology has cut processing time from a few months to less than a week. The company has achieved enough of a return on its investment to justify purchasing a second camera and has also been successful in attracting new customers with the promise of fast turnaround and high quality. In the first half of 2004, Beijing Xing Tian Di generated significantly more projects as customers placed more orders due to the increased image quality. In addition, the company estimates that 80 percent of current orders are from new customers – all government clients. With the confidence of a backlog of orders waiting to be filled, and new staff already hired to help fill the orders, Beijing Xing Tian Di remains a market leader in China for its pioneering use of technology.

The company completed two projects in China's Jiansu province that demonstrate the benefits of its fully digital workflow. Wuxi Survey and Mapping Institute selected Beijing Xing Tian Di to capture imagery of the area covering 700 square kilometres with a photo scale of 1:6000; flight height of around 720 metres; and resolution of 7.2 centimetres because of proven, high-quality image capture capability and fast delivery time offered for mapping products production. Beijing Xing Tian Di captured 4,000 photos of the city.

Beijing Xing Tian Di helped Suzhou City Planning Bureau update orthophotos to assist with city planning. This project included two scales – 1:12000 photo scale covering 1,000 square kilometres, and 1:6000 photo scale covering 500 square kilometres. Approximately 4,000 photographs were taken in total using the same data processing workflow as the Wuxi project.

In a traditional film-based workflow, acquiring and processing imagery for an entire city would take several years, making it impossible to complete annual map updates of the entire city. The DMC saved time with both projects by immediately introducing digital imagery into photogrammetric workflows, eliminating the processing and scanning steps required with a film-based camera.

For more information, visit www.intergraph.com.

ABOUT INTERGRAPH

Intergraph Corporation is the leading global provider of spatial information management (SIM) software. Security organizations, businesses and governments in more than 60 countries rely on the company's spatial technology and services to make better and faster operational decisions. Intergraph's customers organize vast amounts of complex data into understandable visual representations, creating intelligent maps, managing assets, building and operating better

plants and ships, and protecting critical infrastructure and millions of people around the world.

