

Intergraph Z/I Imaging® DMC® (Digital Mapping Camera) System



Image courtesy of AERO-METRIC Inc., USA.

Customers around the world use Intergraph's Z/I Imaging DMC to provide more precise, high-quality orthophotos than ever before – while reducing time and costs. Because no other camera delivers large-scale images with such accuracy, Intergraph customers are seeing greater return on investment. Our customers report 20 percent productivity gains, processing times that are reduced by weeks or months, and operating costs that are less than half of film-based missions.

3001, USA

3001, Inc. was the first North American owner and operator of a DMC. "We saw this digital mapping technology coming down the pike and realized it was going to replace film acquisition in the near future, so we wanted to be at the forefront of the new technology," said Kevin Hanzo, Digital Orthophotography Manager, 3001, Inc.

The project to digitally map the San Juan River Basin in the state of New Mexico was originally planned for traditional film acquisition, but Bohannon Huston Inc., New Mexico project's prime contractor, convinced the state to use the DMC through its business partner, 3001, Inc.

"We were astonished with the success of our first aerial triangulation solution with the DMC data," said Dennis Sandin, Senior VP, Bohannon Huston Inc. "It was two or three times better than our typical film solution. And another time-saving advantage was that once we created the aerotriangulation solution for the panchromatic, we could use it to orthorectify all three data sets."

BHI estimates that two to three weeks were cut from the overall processing time for this project when compared to film. In terms of actual staff and computer time, processing is reduced by 20 percent.

AERO-METRIC Inc., USA

In 2003, AERO-METRIC Inc. became one of first full-service photogrammetry organizations to implement digital technology in both the aerial acquisition and ground processing

DIGITAL MAPPING CAMERA

Intergraph's Z/I Imaging DMC is the industry's most innovative and precise turnkey digital camera system. The DMC supports aerial photogrammetric missions for the broadest range of mapping, geographic information systems (GIS), and remote sensing applications.

The complete data acquisition system delivers small-scale or large-scale images with high-quality resolution at engineering-scale accuracy – supplying images with ground resolutions of less than 4 centimeters (1.5 inches). The modular system consists of state-of-the-art components centered on frame sensor technology to enhance all aspects of the digital workflow. The DMC increases the reliability to which the industry is accustomed – from proven film camera technology – ensuring high geometric and radiometric resolution. The system delivers images digitally, enabling direct production of a wide range of mapping and image analysis deliverables, including orthophotos, Digital Terrain Models (DTMs), and more.

The combination of innovative components makes the DMC ideal for capturing data for all mapping applications, including agriculture, cadastral mapping, cartography, forestry, land use/land cover mapping, environmental studies, natural hazard assessment, flood risk management, transportation engineering, urban planning, civil engineering, oil and gas exploration, and geology.

segments of its workflow. AERO-METRIC Inc. purchased the DMC – filling the digital gap at the front end for the company, giving it a fully digital workflow from collection through processing.

With the DMC included in its extensive arsenal of cameras, AERO-METRIC Inc. has a greater number of options in serving clients. In considering potential applications, AERO-METRIC Inc. uses the combination of radiometric and spatial resolutions available in low-altitude flying to significantly broaden the market for aerial imaging in transportation, utilities, and public works.

The company has introduced its clients to the benefits of multispectral imagery. The DMC produces three separate end products – black-and-white, natural color, and false-color infrared – from a single airborne data set. In the past, customers who wanted two or more map sets had to pay for multiple acquisitions, but now they can get three for the price of one product because only a single flight is required.

Andrew Piscitello, Production Manager, AERO-METRIC Inc., said, “Having the DMC has opened up a whole world of options that we plan to examine. When we first considered buying a digital camera system, we were primarily responding to market demand, but now that we have experienced the technology, we realize the DMC offers benefits to our customers and to us.”

Florida Department of Transportation, USA

In late 2003, the Florida Department of Transportation (FDOT) Surveying and Mapping Office purchased the DMC, making FDOT one of the first organizations in the world to have a digital workflow that includes acquisition, processing, and distribution.

Known for its image clarity and sharpness, the DMC further reduced time and processing costs for FDOT. Also, being able to capture panchromatic, color, and near infrared at the same time is another huge benefit and savings.

The camera’s digital acquisition technology eliminates the need for film processing and scanning – cutting two to three weeks out of the normal processing schedule. The DMC is also allowing FDOT to

close its darkroom with no negative impact on the workflow.

Analysis showed that FDOT could save \$225,000 (U.S.) in taxpayer money annually on staff reduction, operating costs, and overhead with the DMC. Based solely on these savings, the camera paid for itself within an acceptable timeframe.

Lantmäteriet, Sweden

In the aftermath of a deadly wind storm, the Swedish Forest Administration needed rapid access to accurate information on the extent of tree damage throughout the region. Surveying the forest from the ground was impossible – the fallen trees covered too large an area, and entry roads were blocked with debris. Mapping the scene from a satellite or aerial platform seemed equally unlikely in the low sunlight conditions of winter until Lantmäteriet, the national land survey organisation, suggested using the DMC it had just purchased.

Within two weeks after the storm had struck, the DMC was in the air collecting images of a region spread out over 20,000 square kilometers. The collected imagery was crisp and clear, and individual fallen trees were easily visible even when covered by shadows from surrounding trees.

Lantmäteriet kept the camera in the air whenever the weather allowed and mapped the entire area within six weeks. In total, the company collected more than 1,000 image exposures in 25 flight paths. The imagery determined that more than 140,000 hectares of trees had been damaged and would have to be replanted. The forest industry in Sweden will receive a reported €218 million in compensation from the government.

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.



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