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WorldView-2 Imaging Payload Fact Sheet

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ITT's Second Generation Spaceborne Imaging Payload for WorldView-2 DigitalGlobe's High-Resolution Commercial Satellite

Overview

In October 2003, DigitalGlobe selected ITT Corporation's (NYSE: ITT) Space Systems Division, headquartered in Rochester, New York, to build the imaging payload for its third commercial space imagery satellite, WorldView-2.

The WorldView-2 satellite offers accuracy, agility, capacity and spectral diversity, and will serve commercial, military, intelligence, foreign policy, homeland security and civil requirements. ITT delivered the imaging payload for WorldView-2 in February 2008.

ITT's WorldView-2 imaging payload – the “eyes” of the satellite – incorporates a modular, extensively flexible and scalable platform that supports virtually any sensor configuration (government or commercial application). The ITT-supplied payload includes the electro-optical assembly (camera and 1:1 meter telescope), focal plane detectors and electronics, power supply unit and high-speed digital processors. Once deployed, the imaging system will provide half-meter panchromatic resolution and 1.8 meter multispectral resolution from almost 500 miles above the Earth.

ITT also built the imaging sensors for DigitalGlobe's WorldView-1 satellite, launched in September 2007 and QuickBird, launched in October 2001.



Key Features of ITT's Imaging Payload:

- Ability to reconfigure instrument (line rates, compression, and modes) even on-orbit
- Lowest per pixel power consumption - 1/4 the industry standard
- Lowest per pixel weight - 1/6 the industry standard
- Highest image quality per pixel - 2X the industry standard
- Lower image noise - 2X improvement over current systems
- Highest resolution imaging payload commercially available
- Fastest large-area collection - up to 5Gbits per second
- High image quality - large field of view; high signal-to-noise ratio; high contrast modulation transfer function (MTF) - >.12
- Geolocation accuracy specification of 6.5 meters CE90, with predicted performance in the range of 4.6 to 10.7 meters
- Line scan imaging system with selectable time delay integration
- Panchromatic and eight-band multi-spectral (MS) imaging
- **Spatial Resolution at Nadir:** 0.46 meters (19.7 inches) panchromatic, two-meter (78.7 inches) multi-spectral
- **Spectral Range Panchromatic:** 450-800 nm
- **Primary Multi-spectral Bands:**
 - 450-510 nm (Blue)
 - 510-580 nm (Green)
 - 630-690 nm (Red)
 - 770-895 nm (NearIR)
- **Secondary Spectral Bands:**
 - 400-450 nm (Coastal)
 - 585-625 nm (Yellow)
 - 705-745 nm (Red Edge)
 - 860-1040 nm (Near IR2)
- **Swath Width and Representative Area Sizes:**
 - Swath width: 16.4 km
 - Single point scene: 310 sq km
 - Contiguous large area: 6,600 sq km
 - Contiguous 1 degree cell size area: 10,000 sq km
 - Contiguous stereo area: 3,300 sq km (in pan mode at highest line rate)
- **Dynamic Range:** 11-bits per pixel

ITT's Space Systems Division headquartered in Rochester, N.Y., provides innovative remote sensing and navigation solutions to customers in the Department of Defense, intelligence, space science and commercial aerospace to help them visualize and understand critical events happening on Earth, in the air, or in space in time to take effective action. Leveraging comprehensive capabilities, ITT Space Systems' solutions span from image and data collection through processing and dissemination. Key applications include intelligence, surveillance and reconnaissance; high-resolution commercial imaging; space science; meteorology and Earth sciences; GPS navigation; image and data processing and dissemination; and space control and missile defense. For more information on ITT's Space Systems Division, please visit www.ssd.itt.com