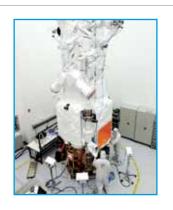
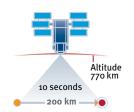




DigitalGlobe has established itself as the world's most prominent supplier of high-resolution commercial satellite imagery. DigitalGlobe's constellation of satellites is unprecedented in the commercial imaging industry, enabling commercial and government customers around the globe to access a broad selection of geospatial information products from a single source.



## WORLDVIEW-2 ALTITUDE AND SLEW TIME





WorldView-2, launched October 2009, is the first high-resolution 8-band multispectral commercial satellite. Operating at an altitude of 770 kilometers, WorldView-2 provides 46 cm\* panchromatic resolution and 1.85 meter\* multispectral resolution. WorldView-2 has an average revisit time of 1.1 days and is capable of collecting up to 785,000 square kilometers (303,000 square miles) of 8-band imagery per day, greatly enhancing the DigitalGlobe multispectral collection capacity for more rapid and reliable collection.

The WorldView-2 system, offering incredible accuracy, agility, capacity and spectral diversity, allows DigitalGlobe to substantially expand its imagery product offerings to both commercial and government customers.

#### **FEATURES**

- Very high resolution
  - 46 cm\* panchromatic at nadir
  - 52 cm at 20° off-nadir
- The most spectral diversity commercially available
  - 1.85 m\* resolution at nadir
  - 4 standard colors: blue, green, red, near-IR1
  - 4 new colors: coastal, yellow, red edge, and near-IR2
- Industry-leading geolocation accuracy
- High capacity over a broad range of collection types
  - 16.4 km width imaging swath (wider than any competitor)
- Bi-directional scanning
- Rapid retargeting using Control Moment Gyros (>2x faster than any competitor)
- 2199 gigabits on-board storage
- 800 Mbps X-band data downlink
- Direct downlink to customer sites available using same high-speed 800 Mbps X-band downlink
- Frequent revisits at high resolution enabled by higher altitude
- 1.1 days at 1 m GSD or less
- 3.7 days at 20° off-nadir or less (52 cm GSD)

#### BENEFITS

- Provides highly detailed imagery for precise map creation, change detection and in-depth image analysis (Note: imagery must be re-sampled to 50 cm for non-US Government customers)
- Provides the ability to perform precise change detection, mapping and analysis at unprecedented resolutions in 8-band multispectral imagery
- Allows the creation of accurate maps in remote areas, maximizing the utility of whatever resources are available:
  - Geolocation accuracy specification of 6.5m CE90, with predicted performance in the range of 4.6 to 10.7 meters (15 to 35 feet) CE90, excluding terrain and offnadir effects
  - With registration to GCPs in image: 2.0 meters (6.6 feet) CE90
- Collects, stores and downlinks a greater supply of frequently updated global imagery products than competitive systems
- Frequent revisits increase image collection opportunities, enhance change detection applications and enable accurate map updates

# WorldView-2

### **DESIGN AND SPECIFICATIONS**

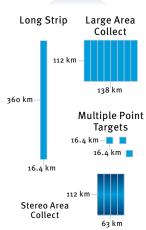
| Launch Information   | Date: October 8, 2009<br>Launch Vehicle: Delta 7920 (9 strap-ons)<br>Launch Site: Vandenberg Air Force Base, California  |
|--|--|
| Orbit  | Altitude: 770 kilometers<br>Type: Sun synchronous, 10:30 am descending node<br>Period: 100 minutes   |
| Mission Life   | 7.25 years, including all consumables and degradables (e.g. propellant)  |
| Spacecraft Size,<br>Mass and Power   | 4.3 meters (14 feet) tall x 2.5 meters (8 feet) across<br>7.1 meters (23 feet) across the deployed solar arrays<br>2800 kilograms (6200 pounds)<br>3.2 kW solar array, 100 Ahr battery                   |
| Sensor Bands   | Panchromatic: 450 - 800 nm  8 Multispectral:  Coastal: 400 - 450 nm  Blue: 450 - 510 nm  Green: 510 - 580 nm  Yellow: 585 - 625 nm  Near-IR1: 770 - 895 nm  Near-IR2: 860 - 1040 nm                      |
| Sensor Resolution  | Panchromatic: 46 cm GSD at nadir*, 52 cm GSD at 20° off-nadir<br>Multispectral: 1.85 m GSD at nadir*, 2.07 m GSD at 20° off-nadir  |
| Dynamic Range  | 11-bits per pixel  |
| Swath Width  | 16.4 kilometers at nadir   |
| Attitude Determination and Control   | 3-axis Stabilized<br>Actuators: Control Moment Gyros (CMGs)<br>Sensors: Star trackers, solid state IRU, GPS  |
| Pointing Accuracy and Knowledge  | Accuracy: <500 meters at image start and stop Knowledge: Supports geolocation accuracy below   |
| Retargeting Agility  | Acceleration: 1.43 deg/s/s<br>Rate: 3.86 deg/s<br>Time to Slew 200 kilometers: 10 seconds  |
| Onboard Storage  | 2199 gigabits solid state with EDAC  |
| Communications   | Image and Ancillary Data: 800 Mbps X-band<br>Housekeeping: 4, 16 or 32 kbps real-time, 524 kbps stored, X-band<br>Command: 2 or 64 kbps S-band   |
| Max Viewing Angle /<br>Accessible Ground Swath                             | Nominally +/-45° off-nadir = 1651 km wide swath<br>Higher angles selectively available   |
| Max Contiguous Area<br>Collected in a Single Pass<br>(30° off-nadir angle) | Mono: 138 x 112 km (8 strips)<br>Stereo: 63 x 112 km (4 pairs)   |
| Revisit Frequency<br>(at 40°N Latitude)                                    | 1.1 days at 1 meter GSD or less<br>3.7 days at 20° off-nadir or less (0.52 meter GSD)  |
| Geolocation Accuracy (CE90%)   | Specification of 6.5 m CE90, with predicted performance in the range of 4.6 to 10.7 m (15 to 35 feet) CE90, excluding terrain and off-nadir effects With registration to GCPs in image: 2.0 m (6.6 feet) |

<sup>\*</sup> All imagery is resampled to .50 and 2.0 to comply with U.S. Regulation



# COLLECTION SCENARIOS (30° OFF-NADIR ANGLE)





#### **SENSOR BANDS**



Panchromatic



Multispectral



4 Additional Bands







