GeoEye-1

The GeoEye-1 satellite is equipped with some of the most advanced technology ever used in a commercial remote sensing system. The satellite collects images at .41-meter panchromatic (black-and-white) and 1.65-meter multispectral resolution. The satellite can collect up to 350,000 square kilometers of pan-sharpened multispectral imagery per day. This capability is ideal for large-scale mapping projects. GeoEye-1 can revisit any point on Earth once every three days or sooner.

**Features**

- Very high resolution
- Industry-leading geolocation accuracy
- High capacity over a broad range of collection types
- Direct downlink to customer sites available
- Frequent visits at high resolution

**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)*

- Geolocate features to less than 5 m to create maps in remote areas, maximizing the utility of available resources

- Collects, stores, and downlinks a greater supply of frequently updated global imagery products than competitive systems

- Stereoscopic collection on a single pass ensure image continuity and consistency of quality
**Data Sheet**

**DigitalGlobe Constellation - GeoEye-1**

**Design and specifications**

<table>
<thead>
<tr>
<th>Design and specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Launch Information</strong></td>
</tr>
<tr>
<td>Date: September 6, 2008</td>
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<tr>
<td>Launch vehicle: Delta II</td>
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<tr>
<td>Launch site: Vandenberg Air Force Base, California</td>
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<tr>
<td><strong>Mission Life</strong></td>
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<tr>
<td>Expected &gt;10 years</td>
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<tr>
<td><strong>Spacecraft Size</strong></td>
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<tr>
<td>4186 lbs, 4.34 m in length</td>
</tr>
</tbody>
</table>

**Altitude and slew time**

- **Altitude 681 km**
- **Orbit**
  - Type: Sun-synchronous,
  - 10:30 am descending node
  - Period: 98 min
- **Sensor Resolution and Spectral Bandwidth**
  - Panchromatic: 41 cm GSD at nadir
  - Black & White: 450 - 800 nm
  - Multispectral: 1.65 m GSD at nadir
  - Blue: 450 - 510 nm
  - Green: 510 - 580 nm
  - Red: 655 - 690 nm
  - Near-IR: 780 - 920 nm
- **Dynamic Range**
  - 11-bits per pixel
- **Swath Width**
  - Nominal Swath Width: 15.3 km at nadir
- **Attitude Determination and Control**
  - Type: 3-axis Stabilized
  - Star tracker/IRU/reaction wheels, GPS
- **Retargeting Agility**
  - Time to slew 200 km: 20 sec
- **Onboard Storage**
  - 1 Tbit capacity
- **Communications**
  - Payload Data: X-band 740/150 Mbps AES/DES encryption
  - Housekeeping: X-band 64 kbps AES encryption
- **Revisit Frequency (at 40°N Latitude)**
  - 2.6 days at 30° off-nadir
- **Metric Accuracy**
  - 5 m CE90, 3 m CE90 (measured)
- **Capacity**
  - 350,000 km²/day Multi-spectral

**Collection scenarios**

(30° off-nadir angle)

- **LONG STRIP**
  - 15.2 km
  - 28 km
  - 224 km
- **LARGE AREA COLLECT**
  - 112 km
  - 360 km
- **MULTIPLE POINT TARGETS**
  - 15.4 km
  - 15.4 km
- **STEREO AREA COLLECT**

**Sensor bands**

- Panchromatic
- Multispectral

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DS-GE1 09/14