WorldView-2 will bring increased reliability to the acquisition of satellite imagery. With a collection capacity of up to 975,000 km$^2$ per day (equivalent to the area of France and Germany combined), plus average revisit times of 1.1 days and large area/in-track stereo capabilities, WorldView-2 will strategically collect high-resolution imagery and predictably refresh our vast ImageLibrary. WorldView-2 will enable DigitalGlobe to make high-resolution multispectral imagery truly ubiquitous, by providing affordable access to current and comprehensive high-resolution imagery.

The combination of increased altitude, advanced agility, bi-directional detectors, and multiple ground stations will allow WorldView-2 to achieve such tremendous collection rates. WorldView-2’s 770 km orbiting altitude combined with state-of-the-art Control Moment Gyros (CMG) provides rapid retargeting. And with the bi-directional push broom sensors, the CMGs will maneuver WorldView-2 like a paintbrush, acquiring a maximum area of over 10,000 km$^2$ in a single overhead pass. The agility and bi-directional scanning will also enable efficient in-track stereo collections of over 5,000 km$^2$.

**Proven Technology**

WorldView-1, the prelude to WorldView-2, has demonstrated the enormous collection capabilities that can be achieved with CMGs and bi-directional sensors. WorldView-1 has completely collected:

- The San Francisco Bay Area (7,700 km$^2$) in a single pass, with low off-nadir imagery
- The Straits of Hormuz (37,058 km$^2$) with 45 degree off-nadir imagery on single pass
- The SWAT Valley (711,453 km$^2$) with repeat passes during the two month humanitarian crisis

WorldView-2, with at least 25% more capacity than WorldView-1, will double the overall collection capacity of the DigitalGlobe Constellation, increase the collection of multispectral imagery by nearly 10 times, and provide highly accurate imagery that can support map creation around the globe. The entire constellation will be capable of intraday revisits, creating a new standard on the availability of current high-resolution imagery.
### Collection Scenarios

- **Long Strip**
  - 110 km
  - 65.6 km
  - 250 km

- **Multiple Point Targets**
  - 16.4 km

- **Stereo Area Collect**
  - 110 km
  - 4.8 km

### Sensor Bands
- **Panchromatic**
- **Multispectral**
- 4 Additional Bands

### Design and Specifications

<table>
<thead>
<tr>
<th>Launch Information</th>
<th>Date: Anticipated October 2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Launch Vehicle: Delta 7920 (9 strap-ons)</td>
<td>Launch Site: Vandenberg Air Force Base</td>
</tr>
<tr>
<td>Orbit</td>
<td>Altitude: 770 kilometers</td>
</tr>
<tr>
<td></td>
<td>Type: Sun synchronous, 10:30 am descending node</td>
</tr>
<tr>
<td></td>
<td>Period: 100 minutes</td>
</tr>
<tr>
<td>Mission Life</td>
<td>7.25 years, including all consumables and degradables (e.g. propellant)</td>
</tr>
<tr>
<td>Spacecraft Size, Mass and Power</td>
<td>4.3 meters (14 feet) tall x 2.5 meters (8 feet) across</td>
</tr>
<tr>
<td></td>
<td>7.1 meters (23 feet) across the deployed solar arrays</td>
</tr>
<tr>
<td></td>
<td>2800 kilograms (6200 pounds)</td>
</tr>
<tr>
<td></td>
<td>3.2 kW solar array, 100 Ahr battery</td>
</tr>
<tr>
<td>Sensor Bands</td>
<td>Panchromatic + 8 Multispectral: 4 standard colors: red, blue, green, near-IR</td>
</tr>
<tr>
<td></td>
<td>4 new colors: red edge, coastal, yellow and near-IR2</td>
</tr>
<tr>
<td>Sensor Resolution</td>
<td>Panchromatic: 0.46 meters GSD at nadir*, 0.52 meters GSD at 20° off-nadir</td>
</tr>
<tr>
<td></td>
<td>Multispectral: 1.84 meters GSD at nadir*, 2.08 meters GSD at 20° off-nadir</td>
</tr>
<tr>
<td>Dynamic Range</td>
<td>11-bits per pixel</td>
</tr>
<tr>
<td>Swath Width</td>
<td>16.4 kilometers at nadir</td>
</tr>
<tr>
<td>Attitude Determination and Control</td>
<td>3-axis Stabilized</td>
</tr>
<tr>
<td></td>
<td>Actuators: Control Moment Gyros (CMGs)</td>
</tr>
<tr>
<td></td>
<td>Sensors: Star trackers, solid state IRU, GPS</td>
</tr>
<tr>
<td>Pointing Accuracy and Knowledge</td>
<td>Accuracy: &lt;500 meters at image start and stop</td>
</tr>
<tr>
<td></td>
<td>Knowledge: Supports geolocation accuracy below</td>
</tr>
<tr>
<td>Retargeting Agility</td>
<td>Acceleration: 1.5 deg/s/s</td>
</tr>
<tr>
<td></td>
<td>Rate: 3.5 deg/s</td>
</tr>
<tr>
<td></td>
<td>Time to Slew 300 kilometers: 9 seconds</td>
</tr>
<tr>
<td>Onboard Storage</td>
<td>2199 gigabits solid state with EDAC</td>
</tr>
<tr>
<td>Communications</td>
<td>Image and Ancillary Data: 800 Mbps X-band</td>
</tr>
<tr>
<td></td>
<td>Housekeeping: 4, 16 or 32 kbps real-time, 524 kbps stored, X-band</td>
</tr>
<tr>
<td></td>
<td>Command: 2 or 64 kbps S-band</td>
</tr>
<tr>
<td>Max Viewing Angle / Accessible Ground Swath</td>
<td>Nominally +/-45° off-nadir = 1355 km wide swath</td>
</tr>
<tr>
<td></td>
<td>Higher angles selectively available</td>
</tr>
<tr>
<td>Per Orbit Collection</td>
<td>524 gigabits</td>
</tr>
<tr>
<td>Max Contiguous Area Collected in a Single Pass</td>
<td>96 x 110 km mono</td>
</tr>
<tr>
<td></td>
<td>48 x 110 km stereo</td>
</tr>
<tr>
<td>Revisit Frequency</td>
<td>1.1 days at 1 meter GSD or less</td>
</tr>
<tr>
<td></td>
<td>3.7 days at 20° off-nadir or less (0.52 meter GSD)</td>
</tr>
<tr>
<td>Geolocation Accuracy (CE90%)</td>
<td>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 off-nadir effects</td>
</tr>
<tr>
<td></td>
<td>With registration to GCPs in image: 2.0 meters (6.6 feet)</td>
</tr>
</tbody>
</table>

* Distribution and use of imagery at better than .50 m GSD pan and 2.0 m GSD multispectral is subject to prior approval by the U.S. Government.