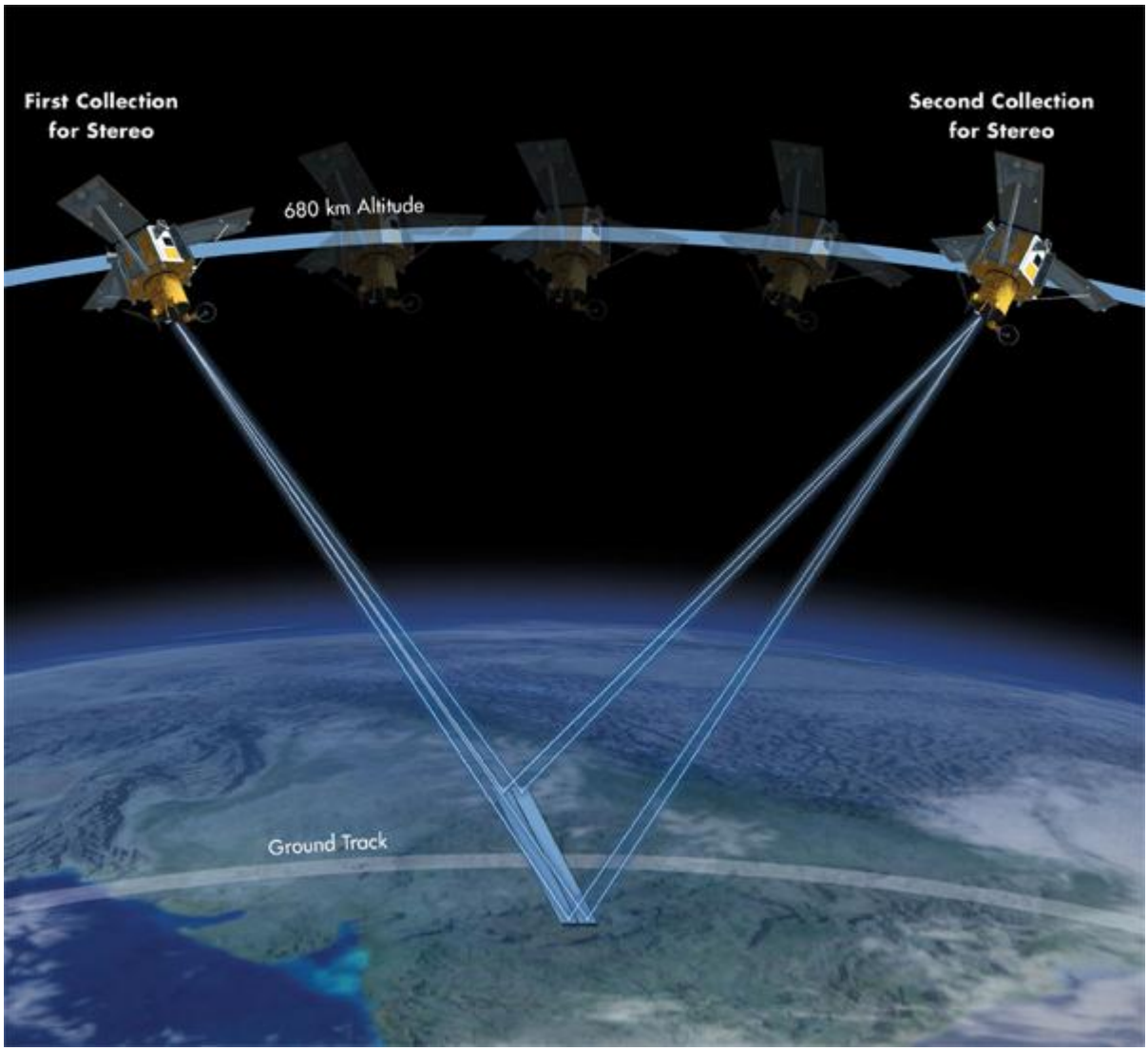
# IKONOS STEREO SATELLITE IMAGERY

Stereo products consist of two **IKONOS satellite images** of the same location on Earth, taken from two different perspectives during one orbital pass. The pair of images is collected in-track, or on the same ground path just moments apart, to maintain the tonal consistency between each image, enabling better interpretability. Each stereo pair contains an image collected at a low elevation angle (above 60 degrees) as well as an image collected at a higher elevation angle (above 72 degrees) with 30°-45° convergence (0.54 to 0.83 base-to-height ratio).



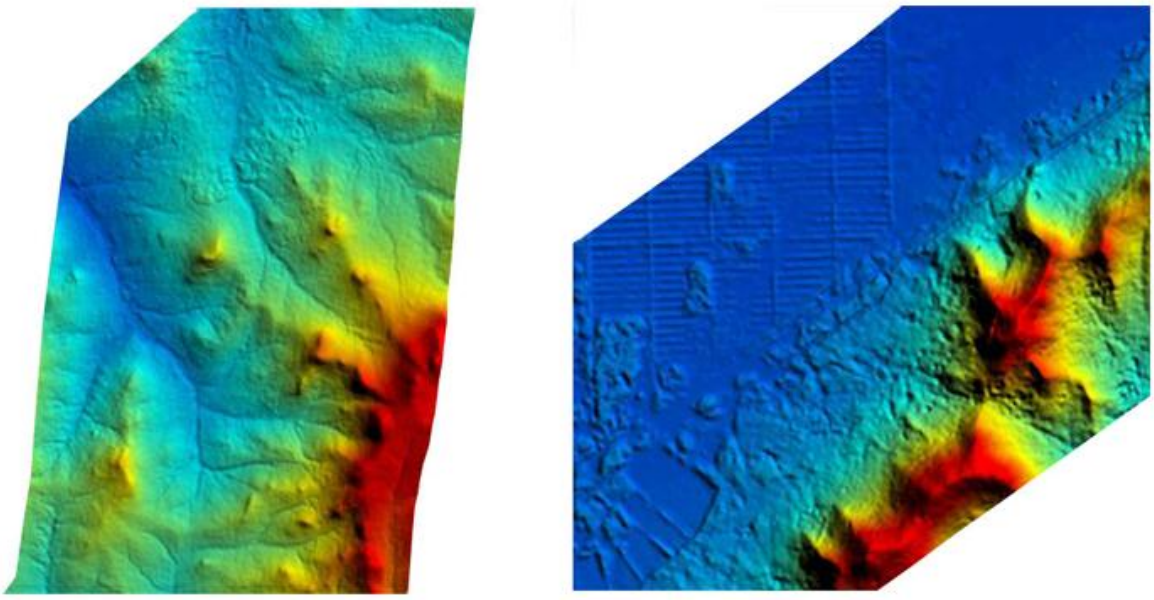

Stereo IKONOS Satellite Image data collection

Reference Stereo products have a horizontal accuracy of 25 meters CE90 and a vertical accuracy of 22 meters LE90 without any Ground Control Points (GCP's). When reliable GPS derived GCP photo ID control is available for the area to be collected the horizontal and vertical Geospatial accuracy increases to <2.5m horizontal and <1.5m vertical.

Satellite Imaging Corporation in cooperation with GeoEye created a 3D Terrain Visualization movie of the Yongbyon nuclear site in North Korea. The creation of the 3D Flythrough movie was made possible with the use of Stereo IKONOS Satellite image data and 2m DEM extracted from the image data. To view the movie, click on the image.

**IKONOS stereo images** have the potential for creating **DSM/DEM's**. The primary advantage of stereo imagery is the ability to **extract cultural and geographic features in 3D** such as buildings, roads and other terrain features and manmade structures. This accuracy can be consistently achieved with terrain slope conditions of <20%.

**Note: This image has been resized for the Web. To view the image at full resolution, click on the image.**



3m DSM Produced from Stereo IKONOS Satellite Image Data at 5Km Wide Corridor

Stereo imagery is especially important for global markets where accurate elevation data is not readily available. Many commercial markets will benefit from stereo imagery and **3D Terrain Models** including mapping, telecommunications, **exploration** and **mining**, transportation, **environmental**, **urban planning** and **forestry**.

The three main attributes of IKONOS stereoscopic imagery are 360-degree pointing capability, a base-to-height (B/H) ratio of 0.6 and greater - similar in scope to aerial photography. Stereo products can be produced in either Epipolar or map projection and can be acquired at most areas of the World.

Stereo products can be purchased as 11-bit or 8-bit data and are offered in the same accuracy levels as other IKONOS products.

Map projected stereo products are produced in long image strips and are recommended if block adjustment is going to be performed by the user. Long strip images facilitate block adjustment, as the user does not have to contend with small component images.

## Specifications

| Product Name | Horizontal Accuracy | Vertical Accuracy | NMAS |
|---|---|---|---|
| Reference Stereo* | 25m CE90 | 22m LE90 | 1:50,000 |
| Precision** | 2m CE90 | 3m LE90 | 1:4,800 |

* Without Ground Control Points (GCP's)

** With Ground Control Points (GCP's) - <0.25m GCP accuracy standards for X, Y, Z

**Bands**

**Panchromatic at 0.82 meter at Nadir**
526 - 928 nm (Pan)

**Multispectral at 3.28 meter at Nadir**
Blue, Green, Red, and NIR.

- 445 - 516 nm (Blue)
- 506 - 595 nm (Green)
- 632 - 698 nm (Red)
- 757 - 853 nm (NIR)

**Projections**

Map projected stereo products offer a choice of UTM, TM, State Plane, Lambert Conformal Conic products are produced in NITF or GeoTIFF format.

**Resolution**

0.8 to 1.0 meter resolution (Pansharpened). Resolution depends on the collection geometry of the Satellite sensor when Image data is acquired.

**Sun Angle**

Elevation angle from ground to sun > 15°, azimuth unrestricted.

**Sensor Elevation**

Sensor elevation angle > 72° for one image and > 60° for the other.

**Cloud Cover**

Less than or equal to 20 % Cloud Cover per AOI

Quelle: http://www.satimagingcorp.com/svc/ikonos-stereo-satellite-images.html