

MONO IMAGES : Strip width : 9.6 km	
Strip Length	No. of Point Targets
9.6	10
28	8
50	6
290	2

PAINT - BRUSH IMAGES :		
Area Length (km)	No. of scans within one paint	No. of paint sets within a pass
9.6	4	3
28.0	3	3
50.0	2	3

PRODUCTS

CARTOSAT-2 data products are of two categories.

AOI based Standard product (Radiometrically corrected/ geo-referenced orthokit)

AOI based Precision product (ortho corrected)

Standard products

These are geo-referenced and AOI based products, generated after accounting for radiometric and geometric distortions.

Specifications

- Minimum AOI is 25 sq.km
- Maximum AOI is 2500 sq.km

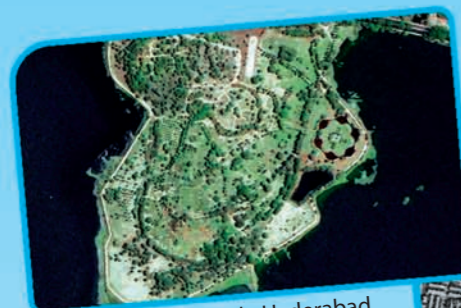
- Rational Polynomial Coefficients are provided
- Several strips of data covering different dates of acquisition are provided without gaps between strips and with sufficient side lap.
- Geometric accuracy : ~100m circular error
- Digital data format : GeoTIFF

Precision products

These are ortho rectified products corrected for terrain distortions and camera tilt effects with the help of control points and SST based DEM of Cartosat-1 user DEM.

Web Services

CARTOSAT-2 browse images are uploaded on to the web site regularly. The data can be imaged at www.nrsc.gov.in



Sanjeevaiah park, Hyderabad

Views as seen by Cartosat-2



Ernst Happel stadium, Vienna



Lumbini Park, Hyderabad



Hyderabad (Yousufguda and its environs)



Fair and Convention Center, Vienna



Part of Greater Mumbai

For more details contact:

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NRSC DATA CENTRE

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nrsc



CARTOSAT - 2



CARTOSAT-2

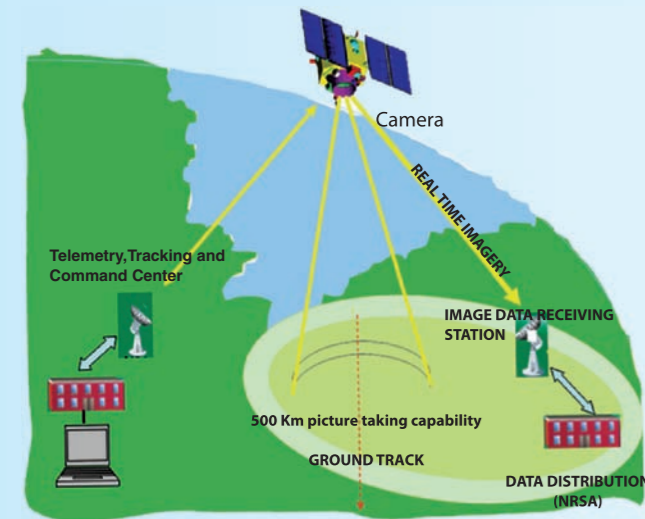
The Indian Earth Observation Programme, over the past three decades, has successfully launched and operated a series of Indian Remote Sensing satellites with coarse, medium and high resolution sensors with the best spatial resolution achieved being 2.5m.

ISRO has launched the CARTOSAT-2 satellite - the nation's second 'mapping' satellite since May 2005, which provides data with a spatial resolution better than 1meter.

CARTOSAT-2 is an advanced remote sensing satellite capable of providing scene-specific spot imagery. The panchromatic camera (PAN) on-board the satellite can provide imagery with a spatial resolution better than one meter and a swath of 9.6 km. The satellite can be steered up to ± 45 deg along and ± 26 deg across the track. The data from the satellite can be used for detailed mapping and other cartographic applications at cadastral level, urban and rural infrastructure development and management, as well as applications in Land Information System (LIS) and Geographical Information System (GIS).

Several new technologies like two mirror on axis single camera, Carbon Fabric Reinforced Plastic based electro optic structure, lightweight, large size mirrors, data compression, advanced solid state recorder, high-torque reaction wheels and high performance star sensors, imaging along the corridor or any direction have been employed in Cartosat-2.

CARTOSAT-2 SPACECRAFT



PAYLOAD

- CARTOSAT-2 is a global mission. The objective of the mission was to design, develop, launch and operate an advanced optical remote sensing satellite for providing spot imagery with a high spatial resolution in the Panchromatic band. The nominal life of the mission is planned to be five years.
- The payload system of CARTOSAT-2 consists of one Panchromatic camera operating in 0.5-0.85 micron spectral band with 10 bit quantization.
- It has roll tilt capacity of ± 26 deg which can be utilised for faster global coverage. However the resolution and swath may vary with the roll.
- The spacecraft body is steerable to compensate for the earth rotation effect and operates with a phased array antenna.
- The sensor comprises of 12000 CCD elements. The swath at nadir is 12.6km.

MISSION

Orbit	Polar, Sun-synchronous
Orbital Altitude	630.6 km
Semi Major Axis	7008.745 km
Inclination	97.914 degrees
Local Time	9:30 A.M
Revisit	4/5 days
Repetivity	310 days
Orbits/day	14.78
Inter-path distance	8.75 km
Distance between successive orbits	2711.9 km
Orbital period	97.446 minutes

Specifications of CARTOSAT-2



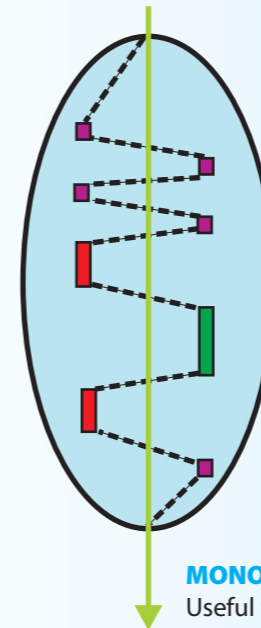
Part of Greater Mumbai

Spatial resolution	< 1m
Swath	9.6 km
Spectral band	0.5 - 0.85 microns
Type of compression	JPEG like
Quantisation	10 bits
ROLL tilt	± 26 deg
OBSSR Capacity	9 minutes of data/64Gb



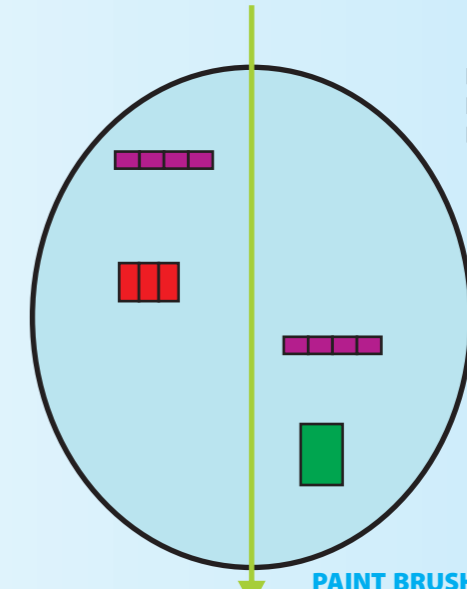
Mahatma Gandhi Bus Station, Hyderabad

MODES OF DATA ACQUISITION



MONO / STRIP IMAGING

Useful to image small pockets of 9.6km x 9.6km or a longer strip of about 260km



PAINT BRUSH

- Imaging of larger area having width more than 9.6 km basic swath.
- Imageable area length increases with the high pitch.
- AOI acquisition is faster.

CAPABILITIES

- CARTOSAT-2 sensor scans upto 2732 lines/second
- Various dimentions of AOI can be acquired. For example a AOI (Area of Interest) of 28 km x 28 km can be acquired within a single pass using Paint-Imaging.
- The satellite is also capable in collecting spot images of size 9.6 x 9.6 km. About fifteen spot images of size - 9.6km x 9.6km can be acquired in a given orbit. This helps in servicing more number of usres in a single orbit.
- Revisit of same area depends upon acceptable across-track tilt and gap between paints depend upon the pitch biases used.

Area Length (km)	Area Width (km) = n x 9.6 where n: no of scans within one paint.	Total Area (km ²)	Difference in View Angle between successive scans (deg)	Along-Track Bias variation (deg)
9.6	4 x 9.6 = 38.4	368.6	12°	$\pm 26^\circ$
28.0	3 x 9.6 = 28.8	806.4	18°	$\pm 26^\circ$
50.0	2 x 9.6 = 19.2	960.0	22°	$\pm 26^\circ$

Revisit period in days	Across-Track tilt limit (in deg)	Resolution in m
4	± 25.25	0.8 - 1.0
9	± 12.62	0.8 - 0.85

