

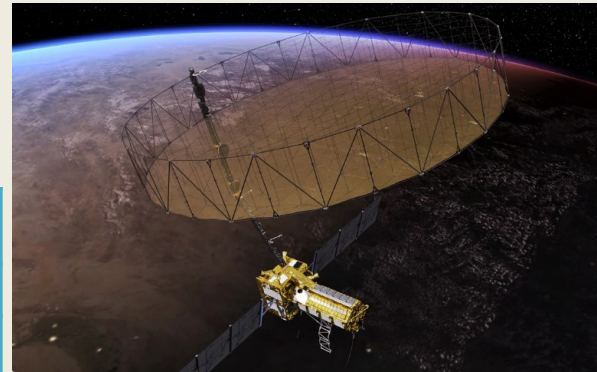
NovaSAR Satellite

NovaSAR mission is a prelude to the NASA-ISRO Synthetic Aperture Radar (NISAR) S-band mission which will be launched tentatively in the first quarter of 2024. We would like all users to use the data and get ready for NISAR. For ready reference, would like to inform the following:

NovaSAR satellite was designed and developed by SSTL (Surrey Satellite Technology Limited, UK) in collaboration with Airbus and COMDEV. **It belongs to the small satellite category** and was launched on 16th September 2018 from Sriharikota, Andhra Pradesh, India. The average global revisit is 3 to 4 days.

Payloads:

- S-band Synthetic Aperture Radar (SAR)
- Automatic Identification System (AIS)



Mission characteristics

Imaging frequency band	3.1-3.3GHz
SAR Antenna	Microstrip patch phased array (3m x 1m)
Peak RF power	1.8kW
Polarisations	HH, HV, VH, VV
Imaging Polarisation	Single, dual, tri or quad
AIS Antenna	Two Orthogonal mounted mono pole antennas/ receiver
AIS Channel	6
AIS Bands/Bandwidth	156 – 162 MHz
AIS Bandwidth	25 MHz
Orbit	580km SSO 10.30am LTAN
Design Life	7 years

NovaSAR data can be browsed and ordered through Bhoonidhi Portal.
(<https://bhoonidhi.nrsc.gov.in/bhoonidhi/home.html>)

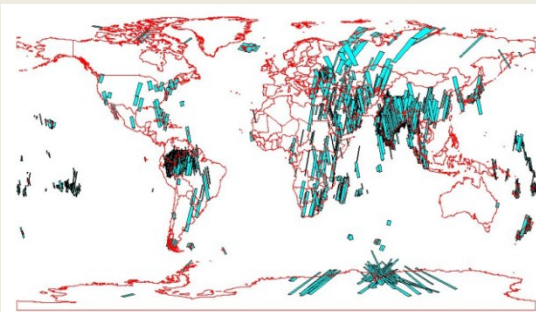
Modes of data acquisition

Imaging Modes	Resolution	Swath	Polarisation	Looks
Stripmap	6m	13-20km	HH or VV	3
Maritime (ScanSAR)	6x14m	400km	HH	1
ScanSAR	20m	50-100km	HH or VV	4
ScanSAR Wide	30m	55-150km	HH or VV	4
Dual pol (ScanSAR)	20m 45m	20-60km 195km	HH+VV HH+HV	4
Tri-pol (ScanSAR)	30m 35m	50-56km 100km	HH+VV+HV	4

NovaSAR Data Products

Processing Level	Data Product	Remarks
Level-1 SLC	Scene based Geo-Tagged Product (Stripmap Mode)	Slant Range Product in GeoTIFF format
Level-1 GRD	Scene based Geo-Tagged Product (Stripmap Mode)	Ground Range Product in GeoTIFF format
Level-1 SCD	Scene based Geo-Tagged Product (ScanSAR Mode)	Ground Range Product in GeoTIFF format
Level-1 Maritime	Strip based Geo Tagged Product	Ground Range Product in GeoTIFF format
Level-2 GeoRef	Scene based GeoReferenced Product (Stripmap and ScanSAR modes)	Map Projected Product with Sigma Naught Backscatter and Surface Water layer Product in GeoTIFF format

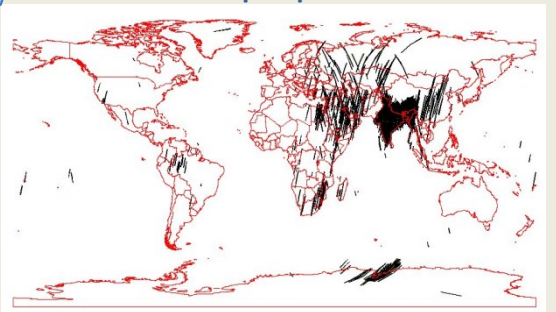
ScanSAR mode



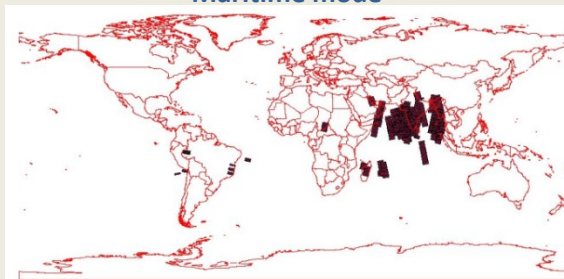
Data availability

Archive data is available from Oct'19.

Stripmap mode



Maritime mode



Archive data is available from Oct'

