

BHOONIDHI NEWSLETTER

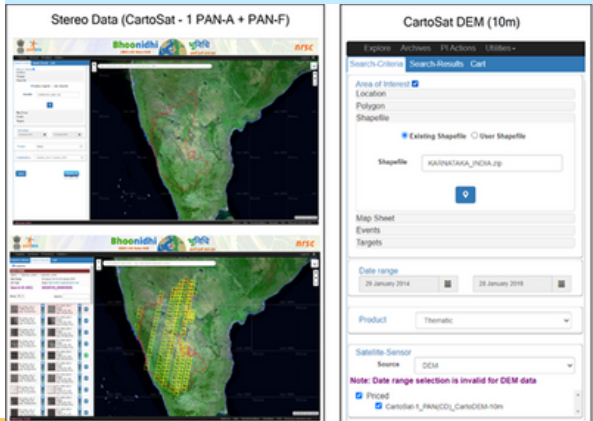
<https://bhoonidhi.nrsc.gov.in/>

Bhoonidhi is a web application providing seamless ordering and dissemination of Open & Priced satellite data products through various Interfaces to online users as per policy

- ## HIGHLIGHTS
- Bhoonidhi-Vista (Visualisation of Terrestrial acquisitions) through its data visualization feature showcases how India looked in the past few hours or days by EO sensors in native resolution.
 - Upagrah tool is a Real time Satellite Tracker for EO Missions being tracked at NRSC/ISRO showcasing all In-Orbit sensors missions and provides the ability to track the live location of various in-orbit satellites.
 - Multi Sensor data ordering is enabled with elegant GUI and simple and minimalistic navigation for ordering Stereo Products (Cartsat-1), CartoDEM Products (Cartosat-1).
 - Surface reflectance (SR) products are available now for ordering through Bhoonidhi for Resourcesat 2A (Liss3, AWIFS).
 - Suomi NPP, JPSS1 products download is enabled at Bhoonidhi as open data.
 - Scatsat-1 data products are available for download in Thematic products category in Bhoonidhi as open data.



STEREO AND DEM DATA ORDERING



BHOONIDHI VISTA

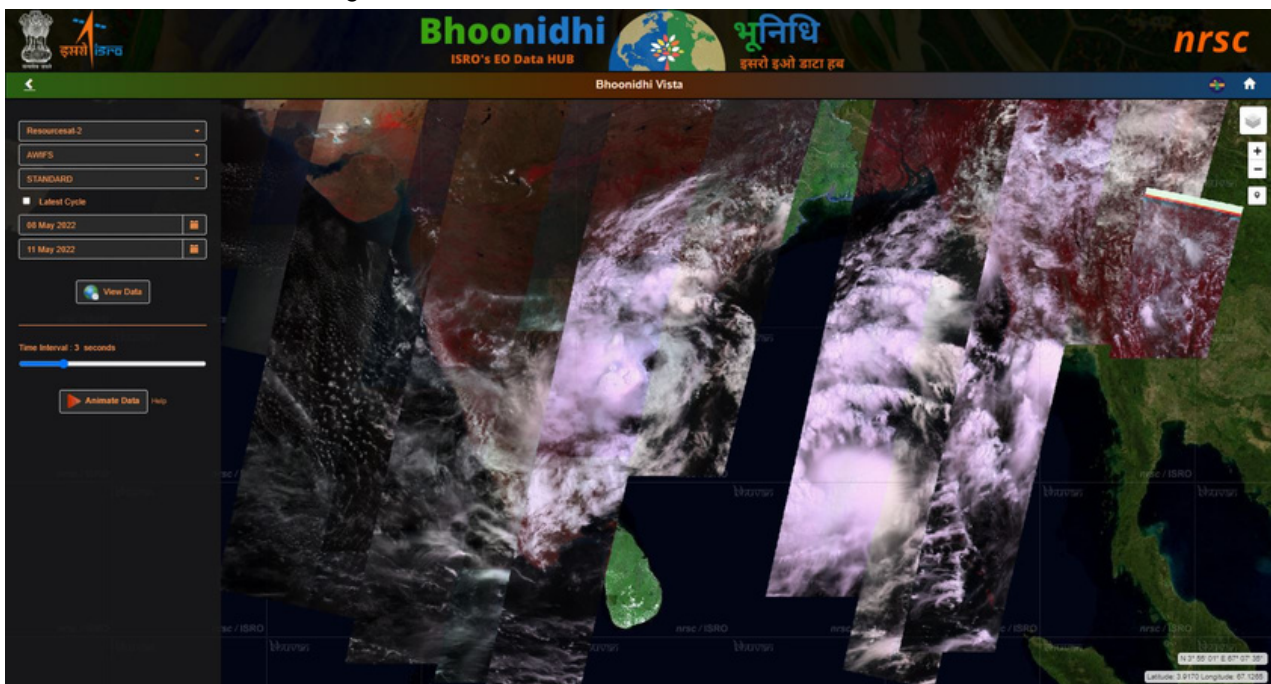
<https://bhoonidhi.nrsc.gov.in/vista/index.html>



- Full resolution Data Visualization service at Bhoonidhi.
- Enabled for Resourcesat-2, Resourcesat 2A, helping users to view the earth in NIR, red and green bands from 56m-5m resolution.
- Sentinel-2 data visualisation in natural colour imagery whereas Sentinel-1 SAR data in 2 polarisations in C Band.

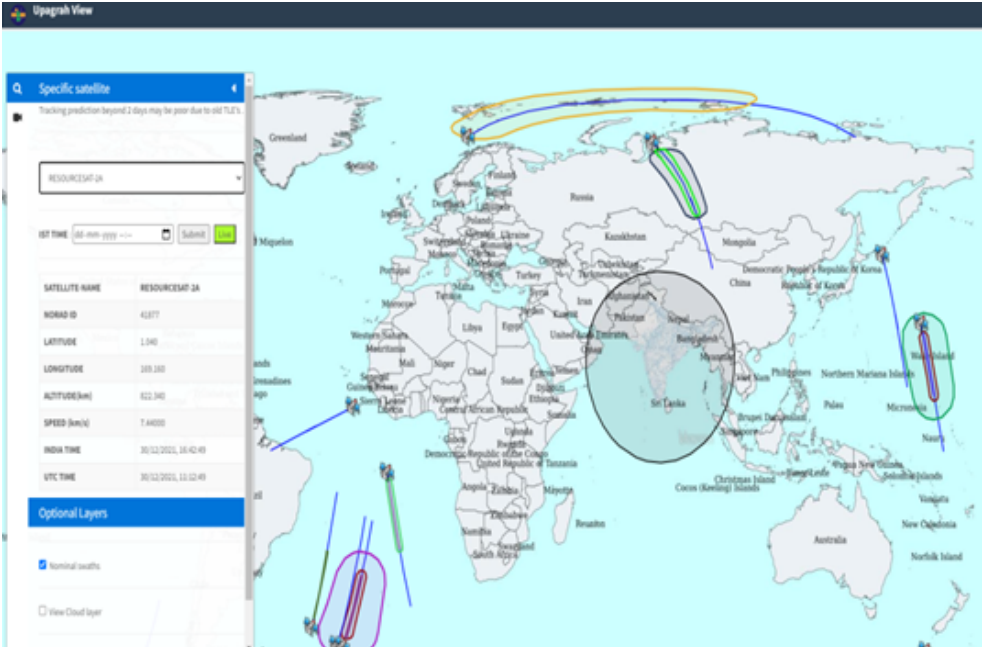
- **Incremental** View of the data acquired on a particular day or between two dates at varying zoom levels to understand the coverage of a satellite's acquisition in a cycle.
- **Time Lapse animation** feature - allows users to view Time Lapse animation over the Area of interest within a date range which demonstrates changes in the area of interest as was acquired by the satellites in the past few cycles.

Visualisation of Cyclone Asani with Resourcesat-2 AWIFS data



UPAGRAH

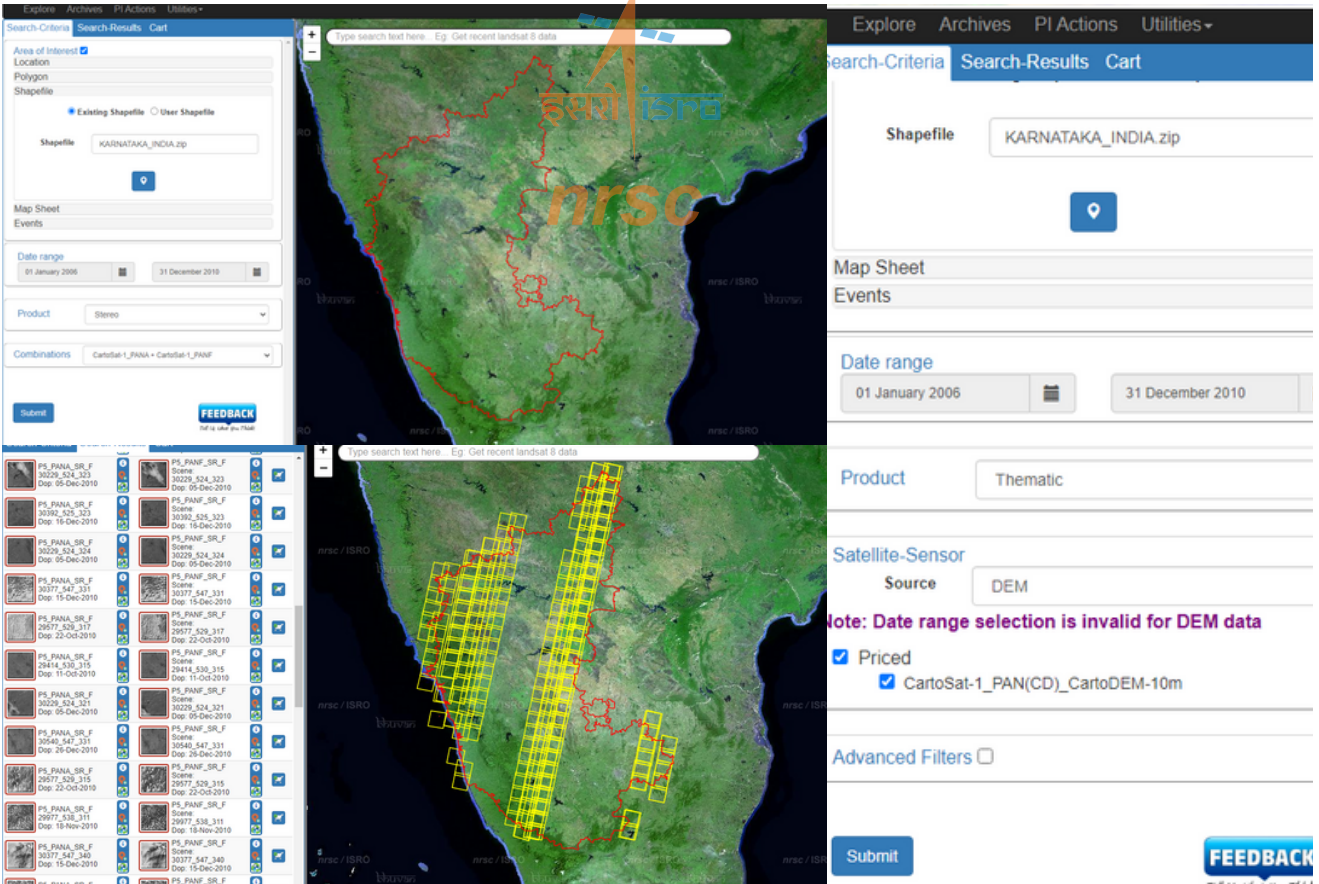
<https://bhoonidhi.nrsr.gov.in/upagrah>



- Upagrah provides Real time Satellite Tracker for EO Missions.
- Helps to assess the feasibility of acquisition of Data for Disasters and other applications.
- Displays nominal swaths of satellites along with the latest cloud layer

STEREO AND DEM DATA ORDERING

Stereo Data (Cartosat-1 PAN-A + PAN-F) and Cartosat-1 DEM (10 m)

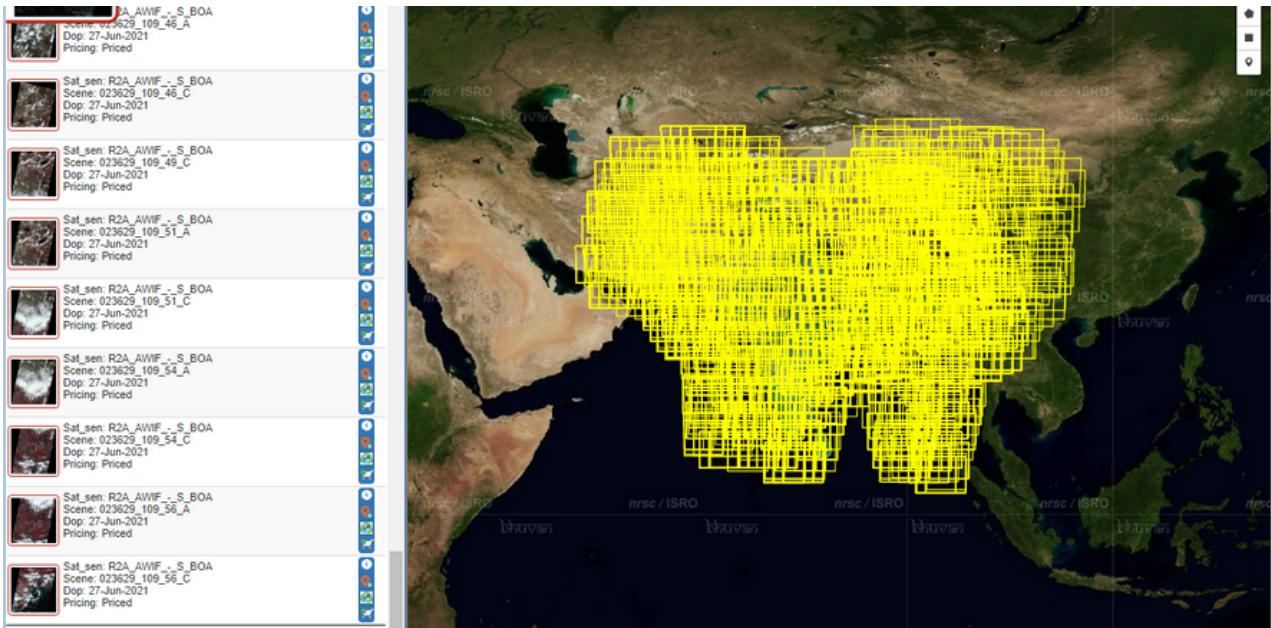


Enabled with elegant GUI and simple and minimalistic navigation for selection of multiple sensors, catalogue fetch and product definition specification for ordering the following products.

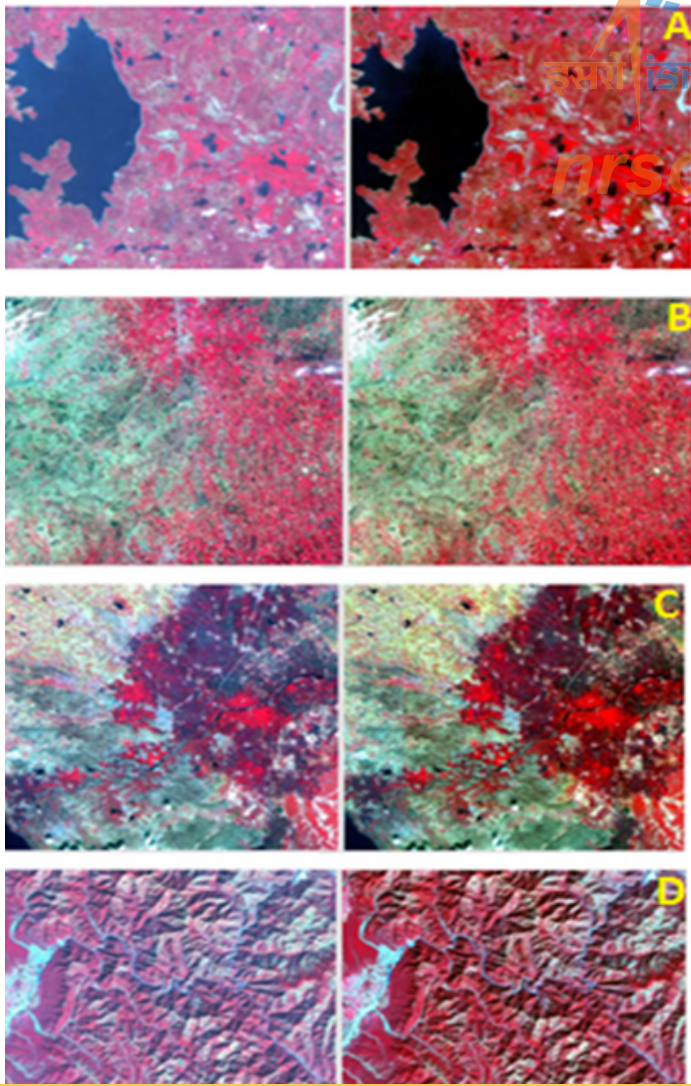
- o Cartosat-1 Stereo Products,
- o Cartosat-1 CartoDEM Products

SURFACE REFLECTANCE (BOA) PRODUCTS

<https://bhoonidhi.nrsc.gov.in/>



Surface reflectance products for Resourcesat-2A L3 & AWiFS from Dec2016 to till date can be ordered with lag time of 6 days. The User guide of SR products is available at <https://bhoonidhi.nrsc.gov.in/bhoonidhi/htmls/help.html>



Surface reflectance is the fundamental land surface parameter of interest for any remote sensing based application. This is because the retrieval of any biophysical parameter demands for the use of precise surface reflectance products as the input. Moreover surface reflectance products are also necessary to apply a quantitative remote sensing model or set of classification rules to standardized scenes in different regions or years.

Surface Reflectance (SR) products from RS2/2A LISS3 & AWiFS sensor data are realized using fully automated atmospheric correction procedure based on 6S radiative transfer model with lambertian approximation. SR/BOA (Bottom of Atmosphere) products can be ordered through Bhoonidhi Portal.

Surface reflectance products from Resourcesat-2A: Liss3/AWiFS Sensors can be seen in the figure.

DN image (left) and SR Image (right),

- A) RS2-L3 (DOP: 05/Feb/2020; Path/Row: 101/63)
- B) RS2A-L3 (DOP: 30/Mar/2020; Path/Row: 96/59)
- C) RS2 AWiFS (DOP: 05/Feb/2020; Path/Row: 101/60)
- D) RS2A AWiFS (DOP: 23/Jan/2020; Path/Row: 97/53)