

BHOONIDHI NEWSLETTER

SEP - DEC 2022

EOS-06 First Day Imaging

The first day images captured by the Ocean Color Monitor (OCM) Sensor onboard EOS-06 were released by Shri M.Sankaran, Director, URSC and Dr. Prakash Chauhan, Director, NRSC on 29th November 2022. The images cover the Himalayan region, Gujarat Kutch region, and the Arabian Sea.



Bhoonidhi highlights

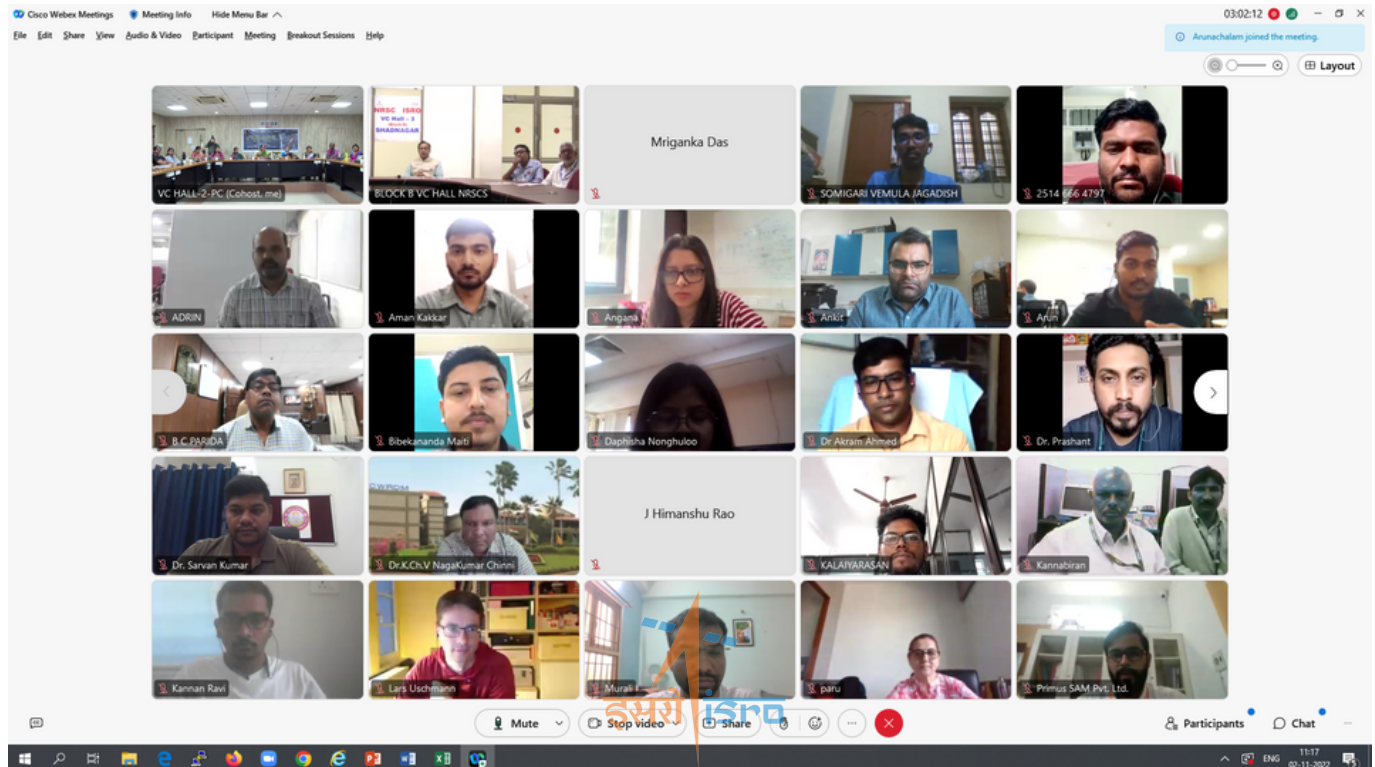


Bhoonidhi, with new features was formally released by the honorable minister Dr. Jitendra Singh in UNWGIC 2022 conference at Hyderabad.



Bhoonidhi Workshop (BWS # 01)

One day workshop for familiarising Bhoonidhi application to Geo Spatial users was conducted on 2nd Nov, 2022 through online mode. More than 200 participants were connected online throughout the session. Bhoonidhi team would like to thank all the participants for their valuable feedback.



Topics Covered



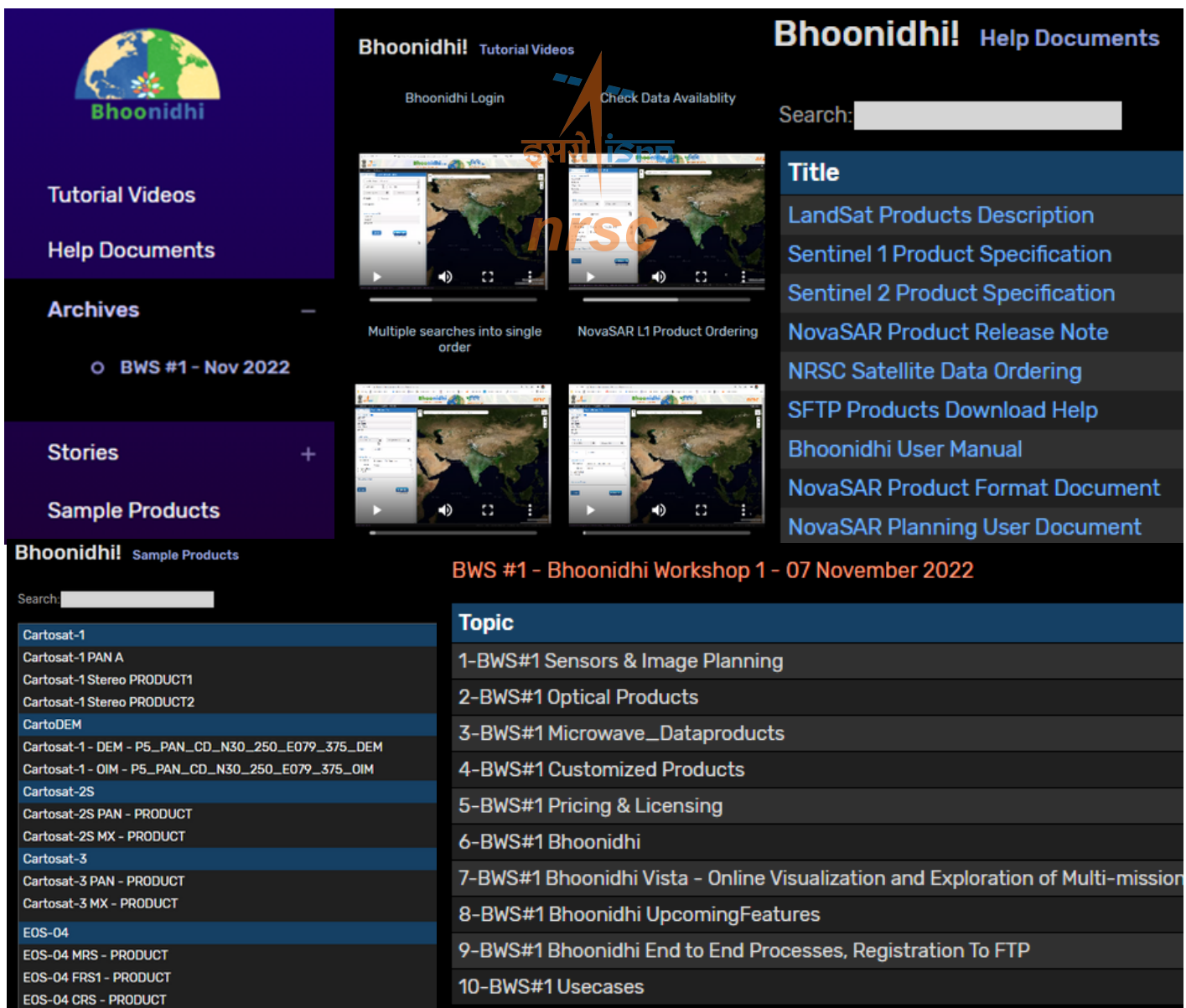
Following were the topics covered during the workshop. All these presentations are now available for download at Bhoonidhi Resource page <https://bhoonidhi.nrsc.gov.in/bhoonidhi/help/>

Topic
1-BWS#1 Sensors & Image Planning
2-BWS#1 Optical Products
3-BWS#1 Microwave_Dataproducs
4-BWS#1 Customized Products
5-BWS#1 Pricing & Licensing
6-BWS#1 Bhoonidhi
7-BWS#1 Bhoonidhi Vista - Online Visualization and Exploration of Multi-mission EO Data
8-BWS#1 Bhoonidhi UpcomingFeatures
9-BWS#1 Bhoonidhi End to End Processes, Registration To FTP
10-BWS#1 Usecases

Bhoonidhi Resources

Bhoonidhi Resources has an archive of help material provided to the users to access Tutorial videos, Help documents, Bhoonidhi Workshop presentations and Sample Products which can be downloaded. Bhoonidhi resources page is available at <https://bhoonidhi.nrsc.gov.in/bhoonidhi/help/>

- **Tutorial videos** demonstrate various features and functions of Bhoonidhi in the form of videos.
- **Help documents** provide various user manuals, brochures, product specifications.
- **Archives** consists of the presentations of Bhoonidhi Workshop (BWS#1), that can be downloadable by the users.
- **Stories** consists of story of the month which will be updated periodically.
- **Sample Products** consists of free sample satellite data products of various missions for the users to download.



The screenshot shows the Bhoonidhi Help Documents and Sample Products sections. The Help Documents section includes a search bar and a list of titles such as LandSat Products Description, Sentinel 1 Product Specification, and NovaSAR Product Release Note. The Sample Products section includes a search bar and a list of topics such as 1-BWS#1 Sensors & Image Planning, 2-BWS#1 Optical Products, and 10-BWS#1 Usecases.

Title
LandSat Products Description
Sentinel 1 Product Specification
Sentinel 2 Product Specification
NovaSAR Product Release Note
NRSC Satellite Data Ordering
SFTP Products Download Help
Bhoonidhi User Manual
NovaSAR Product Format Document
NovaSAR Planning User Document

Topic
1-BWS#1 Sensors & Image Planning
2-BWS#1 Optical Products
3-BWS#1 Microwave_Dataproducts
4-BWS#1 Customized Products
5-BWS#1 Pricing & Licensing
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7-BWS#1 Bhoonidhi Vista - Online Visualization and Exploration of Multi-mission
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Landsat 8, Landsat-9 data Visualisation

Landsat 8 and Landsat 9 data is daily acquired at Shadnagar ground station for Indian region and the products are available as open data products at Bhoonidhi. The standard optical data products as FCC and the thermal bands converted as brightness-temperature products are now available for visualization at Bhoonidhi-Vista.

Fog is common over the Indo-Gangetic plains during the winter season due to low temperature and high moisture leading to condensation of moisture and formation of tiny liquid droplets that hang in the air. The images show the fog event on 27-DEC-2022 in Eastern Uttar Pradesh captured through AWIFS sensor onboard the Resourcesat-2 satellite and the corresponding Brightness temperature derived from TIRS sensor onboard the Landsat-8 satellite.

Fog event over Eastern Uttar Pradesh on 27-DEC-2022 as captured through RS2 AWIFS



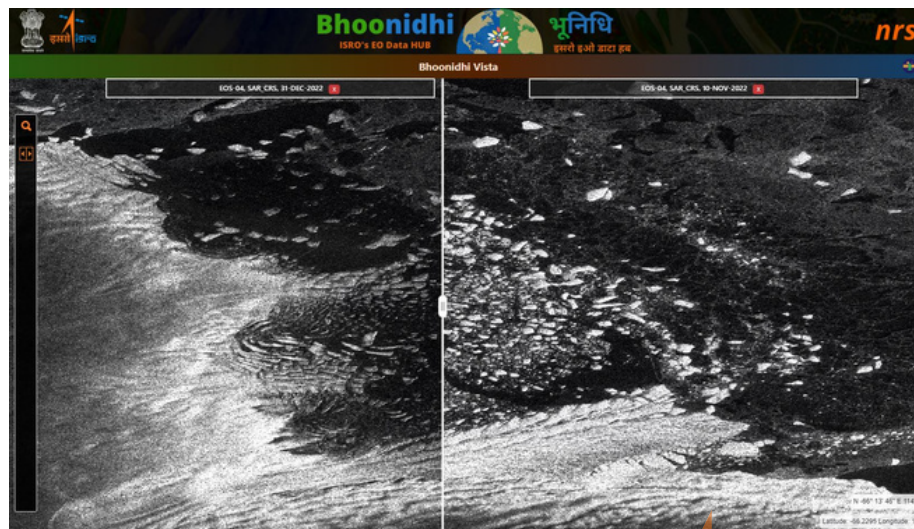
Brightness temperature of the Fog Event over Uttar Pradesh from Landsat-8 TIRS1



Visualisation of EOS-04 data at Bhoonidhi Vista

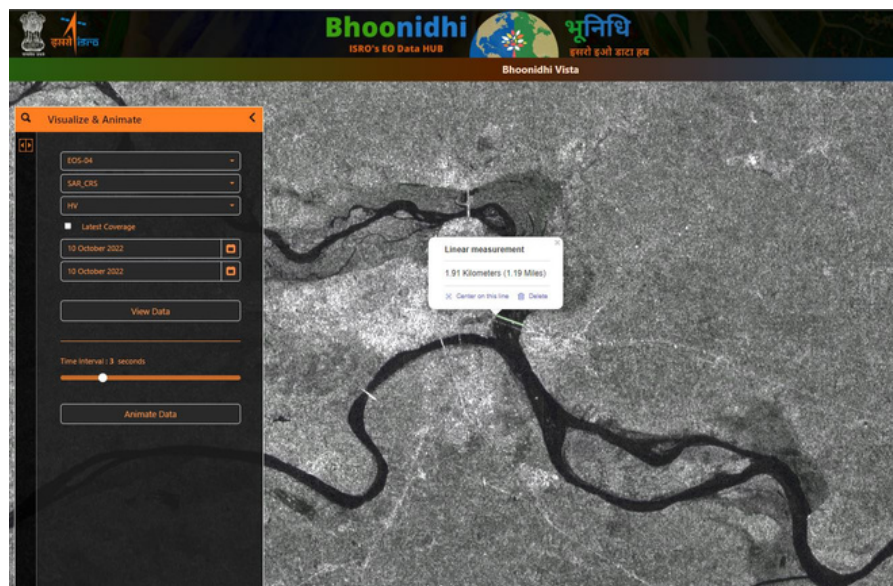
Bhoonidhi-Vista Comparison Slider enables comparison of different satellite imagery facilitating insights for change detection. Measurement tool aids elementary analysis of distance and feature area estimation, useful for disaster impact analysis. Bhoonidhi Vista can be accessed at:

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



Iceberg views in Antarctica as observed by EOS-04 on two different dates available for comparison at Comparison Slider tool

Orissa coastline as viewed by EOS-04 SAR sensor in MRS mode showing Mahanadi river and Chilika lake



Prayag Raj as viewed by EOS-04 SAR sensor in CRS mode: Bridge measurement using measuring tool at Bhoonidhi Vista

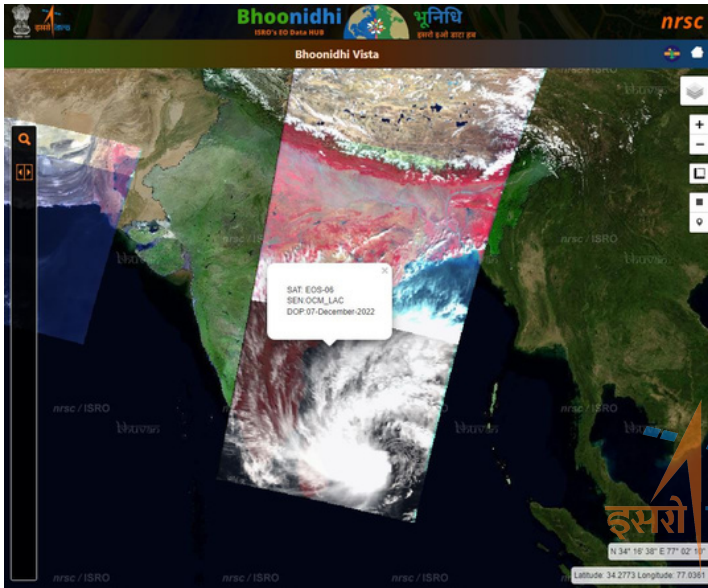
EOS-06 visualisation at Bhoonidhi

Near real-time data visualization in native resolution for LAC and GAC is enabled at Bhoonidhi-Vista. Wind vector product for SCAT is available as animation at Bhoonidhi Vista.

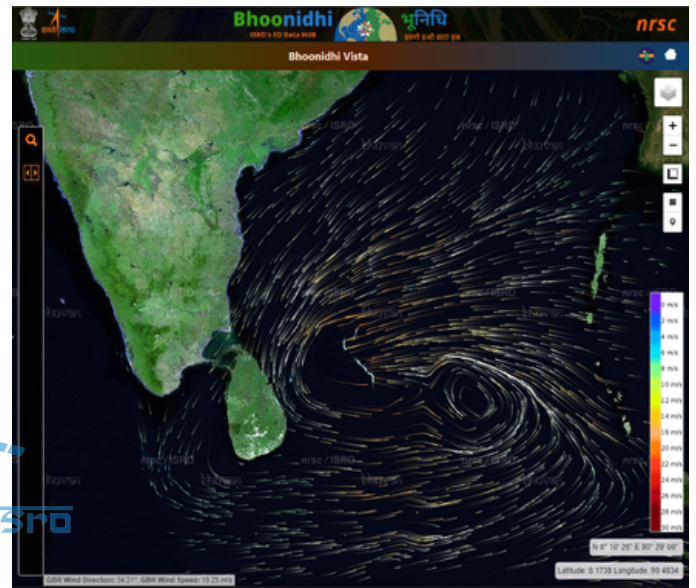
- OCM Level-1C products with GCS projection are available for visualization
- L3WW SCAT3 products are enabled for visualization

These products will be very soon available for the online users at Bhoonidhi.

OCM-LAC



SCATTEROMETER-3



Mandous cyclone data Visualization at Bhoonidhi Vista (07 Dec 2022)

Sensor Specifications

OCM-3

- Spectral resolution 20 / 10 / 8 (Application bands) & 20 / 40 (Atmospheric correction bands)
- Swath is 1500 Km
- Spatial resolution is 366m (Local Area Coverage- LAC Mode), Spatial resolution is 366m 1080m (Global Area Coverage- GAC Mode)
- 13 spectral bands in optical region (0.402 to 1.030 microns)

Scatterometer

- Nominal mode provides 12.5 X 12.5 km grid for wind vector

EOS-06 Applications

OCM-3 has been used for a variety of geophysical and biological applications, including forecasting Potential Fishing Zones (PFZs), estimating primary productivity, studying coastal processes, calculating aerosol radiative forcing, and studying physical-biological coupled processes etc.

SCAT-3 data applications applied to the study of vegetation, soil moisture, polar ice, global change, Effect of surface winds on biological productivity-PFZ changes etc.