

BHOONIDHI (भूनिधि)

ISRO Open Data Access

User Guide



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VERSION HISTORY

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July, 2021	V1.0	Bhoonidhi user guide for open and priced data dissemination from Bhoonidhi		Team WPDSD
May, 2024	V2.X	Bhoonidhi user guide updated for Open Data and Priced Data dissemination as per Indian Space Policy 2023		Team DWAG

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1 GENERAL INFORMATION

1.1 System Overview

Keeping in mind the global trends and need to promote greater utilization of remote sensing data which emanate from the space assets created from government funded programs, it is suggested to release some of the selected data products free for the online users.

Bhoonidhi - ISRO Open Data Access web application facilitates the dissemination of open and priced satellite data products to online users on web.

Bhoonidhi hosts huge repository of IRS and Non-IRS satellite data catalogue since 1988; fresh acquisitions added on a daily basis covering INDIA and surroundings; while facilitating regional distribution of Sentinel and LandSat-8/9 data in India.

We service open & commercial access for satellite data products across spatial and spectral resolutions; tools for near real time data visualization for geospatial and science applications. It is equipped with various user-friendly search options to ease target area identification and subsequent download. CART interface is also available for user to select the products and store for later download or place order. Priced data products are to be added under a Performa Invoice and then converted to order and will be disseminated at FTP server after on demand generation at IMGEOs.

1.2 Point of Contact

Bhoonidhi Team: bhoonidhi@nrs.gov.in

URL: <https://bhoonidhi.nrs.gov.in>

1.3 Organization of Manual

This manual is guide to use Bhoonidhi web application for downloading and ordering satellite data products. The document covers all the options and features available at Bhoonidhi for ordering data

1.4 Acronyms and Abbreviations

OCM	Ocean Color Monitor
LISS	Linear Image Self Scanner
AWIFS	Advanced Wide Field Sensor
RAD	Radiometric
QC	Quality Check
IMGEOs	Integrated Multi mission Ground Segment Earth Observation Satellites
DEG	Data Exchange Gateway
FTP	File Transfer Protocol
OTS	Off the Shelf Archival
PI	Pro-forma Invoice

SID	Search ID
GE	Government Entity
NGE	Non-Government Entity

2 USER INTERFACE

In order to download or order the products, user has to first identify the product of interest. Various user-friendly search options are provided to the user to target the area of interest from the product catalogue. The selected products are to be added to the cart. These saved products in the cart can be downloaded or converted to PI. If sufficient funds are available, the PI can be converted to orders.

2.1 User Access Levels

In order to browse through the product catalogue, no login is required. But product download or ordering can be done only by registered users after login. Users should have financial account with NSIL. The procedure to get the financial account is also available at Bhoonidhi while generating Performa Invoice (PI).

Following are the major user interfaces provided to the user for browsing, downloading and ordering satellite data products from the product catalog.

2.2 Archives

This view shows the data available in the catalogue which is also shown on the map to the user along with the color-coded frequencies of collection in our archive. The list of satellites and sensors which are available for online download as well as priced data along with the data availability are displayed to get the quick view of data in the archives.

2.3 Explore

This option is for search, filtering and downloading/ordering the data. User has to select the AOI, resolution, date range, product types, and Priced/Open data wise sensors for searching the data sets. Each search by user is assigned a Search ID (SID) which is the reference for adding the priced products. User has to select the data as per the required specification and add to CART. The selected data based on priced/open is added in the Priced/Open CART. Satellites/sensors are displayed for selection to the user based on validity (launch date etc) and date range selected by user. Every product has a unique Product ID for quick reference.

This menu has following 3 sub menus

2.3.1 Search Criteria

This is the main view using which user can browse through the catalogue, identify the area of interest, select the products and add them to cart.

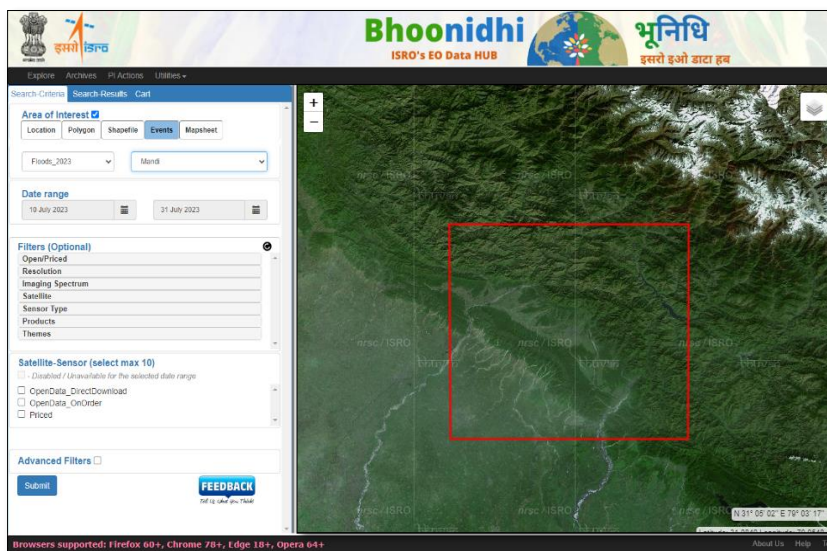
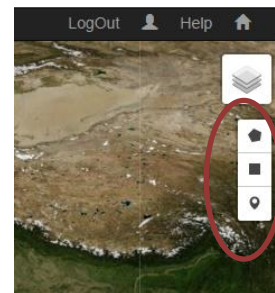
Following are the types of searches available at Bhoonidhi:

2.3.1.1 Area of Interest (AOI) Identification

User can provide the area of interest either using the map tool kit or manually entering the values. Location, Polygon, Shapefile, Pre-defined Events and Mapsheet based options can be used to specify the target area of interest for which products are required.

Following options are available:

- Location/Point
 - Specify location name or provide few characters in the location name, the application automatically fetches the matching locations. User can then select desired location from the list.
 - The user can also specify a point and extent of area (in km) around the point.
- Polygon
 - Specifying the top-left and bottom-right coordinates.
- Shapefile
 - Select the shapefile from existing list of state / district level shapefiles.
 - Upload the shape file for the target area of interest.
- Event Based
 - The major events like floods, drought, avalanche, earthquake, will be tagged and made available to the user for selection. The software will automatically the dates and the AOI corresponding to the event. Further, the user can select the satellite sensor for which the data is required.
- Map toolkit
 - The map tools are described in chapter #3.



2.3.1.2 Date Range

This field is to specify date range for which data is to be searched from the catalogue.

2.3.1.3 Filters

Various optional filtering conditions like resolution, imaging spectrum, open or priced data, satellite, sensor, product type and themes are made available. The user can select one or more filters as per his requirement on the basis of while, the below satellite-sensor list will be displayed.

2.3.1.4 Satellite Sensor

This field is to specify the satellite and sensor for which data is to be searched from the catalogue. The satellite sensors are grouped as

- **OpenData_DirectDownload** – already generated products readily available for download, free of cost.
- **OpenData_OnOrder** - Data products generated as per user specification of level of correction and format, free of cost.
- **Priced** - Data products generated as per user specification of level of correction and format, on chargeable basis.

The screenshot shows a web interface for searching satellite data. At the top, there are tabs for 'Search-Criteria', 'Search-Results', and 'Cart'. Below the tabs, there's a 'Date range' section with two date pickers, both set to '12 March 2024'. Underneath is a 'Filters (Optional)' section with several expandable categories: 'Open/Priced', 'Resolution (1/5)', 'Imaging Spectrum', 'Satellite (1/41)', 'Sensor Type', 'Products', and 'Themes'. The 'Resolution' filter is expanded, showing options like '5m - 25m (Medium)', '25m - 100m (Low)', '0.1m - 1m (Very high)', '1m - 5m (High)', and '100m - 1km (Coarse)'. Below the filters is a 'Satellite-Sensor (select max 10)' section. It has a checkbox for 'Disabled / Unavailable for the selected date range'. Underneath, there are two main categories: 'OpenData_DirectDownload' and 'OpenData_OnOrder'. Each category has several sub-options with checkboxes, including 'ResourceSat-2_LISS3_BOA', 'ResourceSat-2_LISS3_L2', 'ResourceSat-2_LISS3_15x15min-tiles', 'ResourceSat-2_LISS4(MX70)_L2', 'ResourceSat-2_LISS3', 'ResourceSat-2_LISS4(MX23)', and 'ResourceSat-2_LISS4(MX70)'. The 'OpenData_DirectDownload' and 'OpenData_OnOrder' categories are currently selected.

Input selection

Data Dissemination Options

Based on the policy guidelines, user details and availability of data at online [Bhoonidhi](#) storage

Open Data - Direct Download

Data coarser than 5m, Open for All, Directly can be downloaded (https download)

Open Data - On Order

Data coarser than 5m, generated on demand, to be downloaded from sftp account

Priced Data - On Order

Data better than 5m, based on order to be downloaded from sftp account through [Bhoonidhi](#) by NSIL

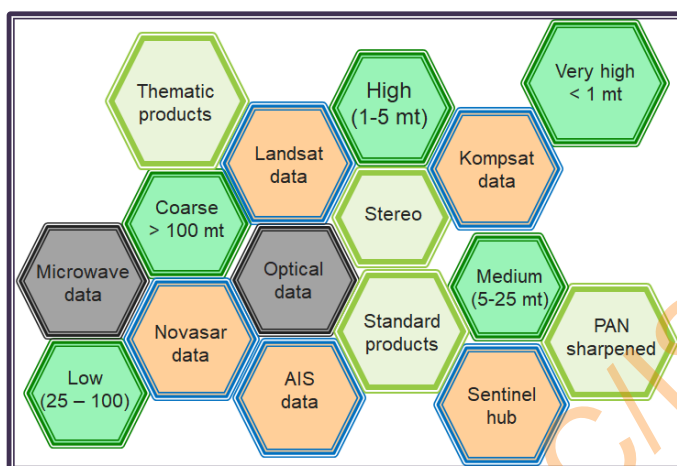
Although browsing does not require login, users are required to login in order to see the Open/Priced data products enabled for them.

2.3.1.5 Advanced Filters

These filters are satellite specific and are enabled for selected satellites where such filters are available. These are generalized search filters configured dynamically for various satellite-sensors. For satellite like ResourceSat, advanced filters like path, row and cloud and for SAR based satellite, advanced filters like transmit polarization, receive polarization, node, look direction and incidence angle are configured.

2.3.2 Data Diversity at Bhoonidhi

There is a huge repository of datasets at Bhoonidhi from 0.28m to 1000m. The data products in various spatial and spectral ranges and different products types based on missions' specification.

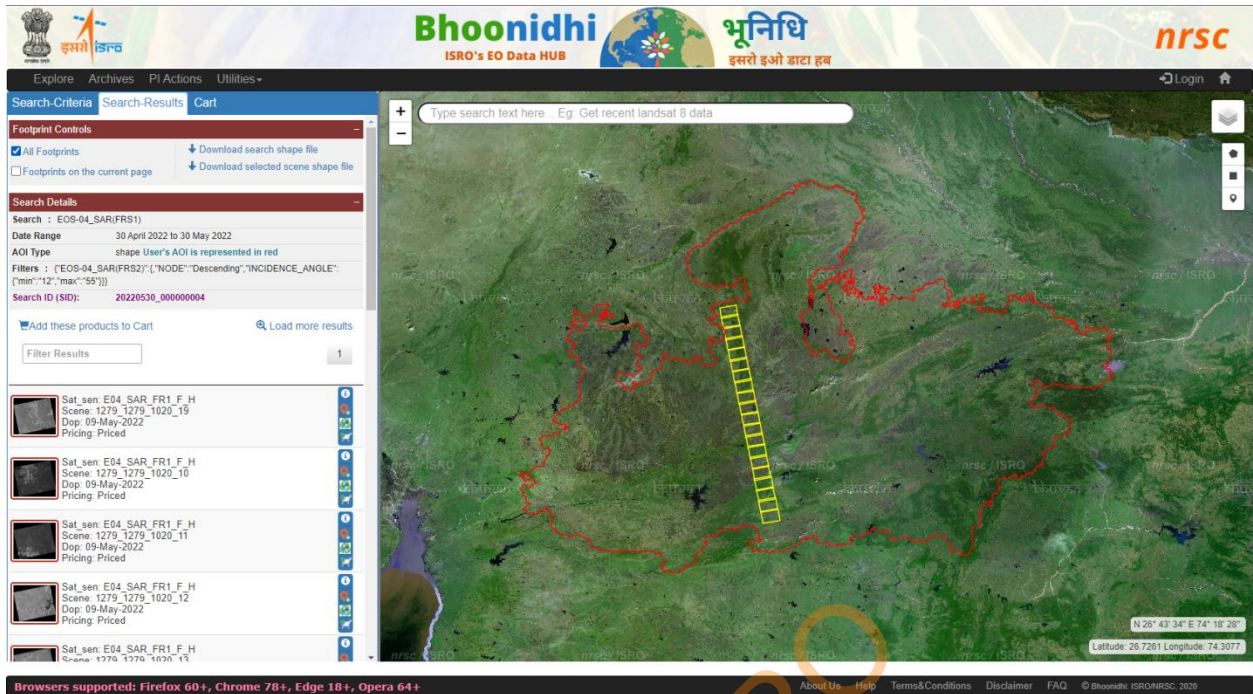


Satellites' data @ Bhoonidhi		
ResoureSat-2	EOS-04	CartoSat-1
ResoureSat-2A	RISAT-1	CartoSat-2
ResoureSat-1	Sentinel 1A	CartoSat-2E
IRS-1A	Sentinel 1B	CartoSat-3
IRS-1B	Soumi-NPP	KompSat-3
IRS-1C	JPSS1	KompSat-3A
IRS-1D	NOAA-11	Novasar (AIS)
EOS-06	NOAA-12	Novasar (SAR)
Oceansat-2	NOAA-14	Landsat-8
OceanSat-1	NOAA-16	Landsat-9
ScatSat-1	NOAA-17	Sentinel 2A
Aqua	NOAA-18	Sentinel 2B
Terra	NOAA-19	

2.3.3 Search Results

This tab displays all the products which are found for the search filters provided by user under "Search-Criteria" tab. Against each product there are following options available:

- View and Download Metadata
- Image extent – This icon on clicking take to the selected scene
- Publish on Map
- Add / Delete from CART



Search Results with footprint controls, search information and pagination

The "Filter Results" option can be used to sub filter the selected products based on any text which is displayed on the right side of the product image. The footprints of products on map are also filtered accordingly.

The "All Footprints" check box in footprint controls can be used to toggle footprints of the resultant products on the map. The "Footprints on the current page" check box in footprint controls can be used to toggle footprints of the products on the current page. An option to be provided for showing either

- Footprints in the current page
- All footprints cumulatively in all the pages
- Brings the clicked footprint to the front on click of show footprint button.

The "Load More results" option can be used to load next set of results for the search criteria.

In addition, the footprint of selected Area of Interest (if any) is displayed in red color on the map.

The "Add these products to Cart" option can be used to add all the resultant products to Cart.

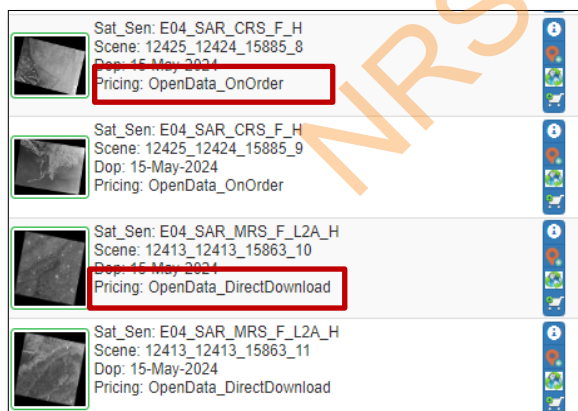
The search results shown in this page are tagged under either of the below 3 options as per the product generation and pricing categorization:

- **Pricing: OpenData_DirectDownload** - The products that are readily generated for download are shown as available for OpenData_DirectDownload in the search results.

- **Pricing: OpenData_OnOrder** - The products that are to be generated afresh as per user specification but are available as open data are shown as OpenData_OnOrder. Under this category, the base scene is shown in the search results. This base scene can be evaluated for selection and then added to the OpenData_OnOrder cart.
- **Pricing: Priced** - The products that are to be generated afresh as per user specification on chargeable basis are shown as Priced. Under this category, the base scene is shown in the search results. This base scene can be evaluated for selection and then added to the Priced cart.

Bhoonidhi Map Overlay Color Codes

AOI Display	
User AOI	Red
Single Product Search	
Product on map	Yellow
Product added to cart	Magenta
Product show extents	Cyan
Cart Tab	
Product in cart tab	White
Product download	Orange
Merged/Stereo Product Search	
Sensor 2 Product	Deep pink
PI Actions Footprints	
All products	Coral
Order Status Monitor	
Products dispatched	White
Other Products	Yellow



Data Category Type Tag

2.3.3.1 Search Id (SID)

Each search by user is assigned an identifier (SID) which is the reference for adding the priced products. For each SID, user can check the products confirmed in the CART on the map and convert to PI. While generating PI, product from multiple SID can be selected and sent in the work order.

This also gives the design flexibility where same user can login from multiple systems. Every search is handled independently.

2.3.3.2 *Pagination*

Pagination is enabled for 500 products at one fetch. The resultant products are segmented with 100 products per page. Load more results option is provided to fetch the next set of 500 products. The product fetch is ordered/ sorted based on sensor and imaging date. The footprints of the fetch results are displayed on the map. This gives the design flexibility to provide wider range for AOI and date range for fetching the data from backend.

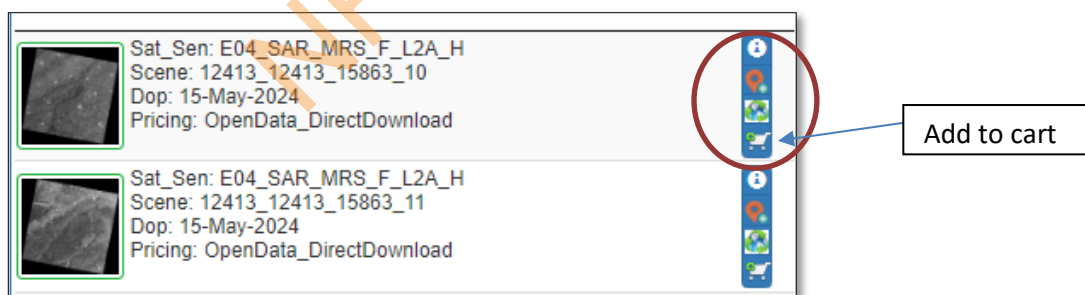
2.3.3.3 *Metadata download*

This option provides a view to display the selected product's metadata, quick view of product, it's footprint along with the download option. Using this download option user can download the metadata information/file associated with the selected product. This file is also available in the zip/archive of each product downloaded.

2.3.4 *Cart*

At Bhoonidhi there are separate carts to download/order Open and Priced products. The look and feel for the carts are same. This also shows the layout of selected items in white color on map.

If not logged in, login with registered user Id. If not registered, alert to register with registration option available. Using the action "Add these products to Cart", all the products on that page will be added to cart at one shot. For individual item addition to cart, select the fourth option in the actions block.



Add to Cart Option against each scene

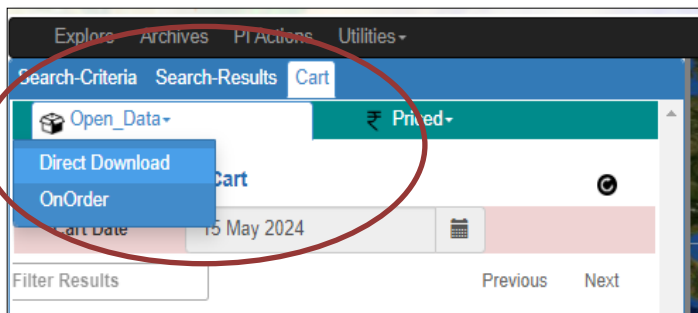
2.3.4.1 *Open Data Cart*

Open Data Cart is segregated into 2 categories – Direct download and On Order Cart.

Open Data Cart - Direct download

The products that are readily generated for download are added to the Direct Download cart. Once the products are added to this cart, the cart is to be Confirmed by clicking the button at the bottom 'Confirm Cart'. After this, the download button gets enabled and the product may be downloaded. The boundary of the product thumbnail is surrounded by either of the following colors:

- Green box – Product online. Can be downloaded
- Red box – Product offline. Will be made available with a delay of 3-24 hours
- Orange box – the products has been already downloaded



The cart is maintained day-wise and user can navigate to previous days cart by changing the date on the cart page. The products from the previous day's cart can also be downloaded at a later date.

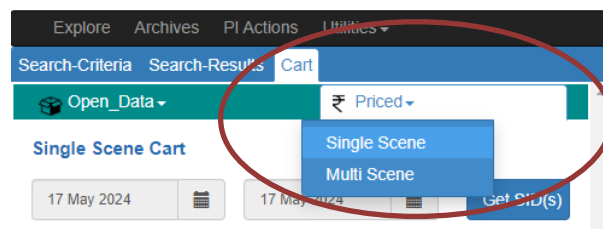
Open Data Cart - On Order

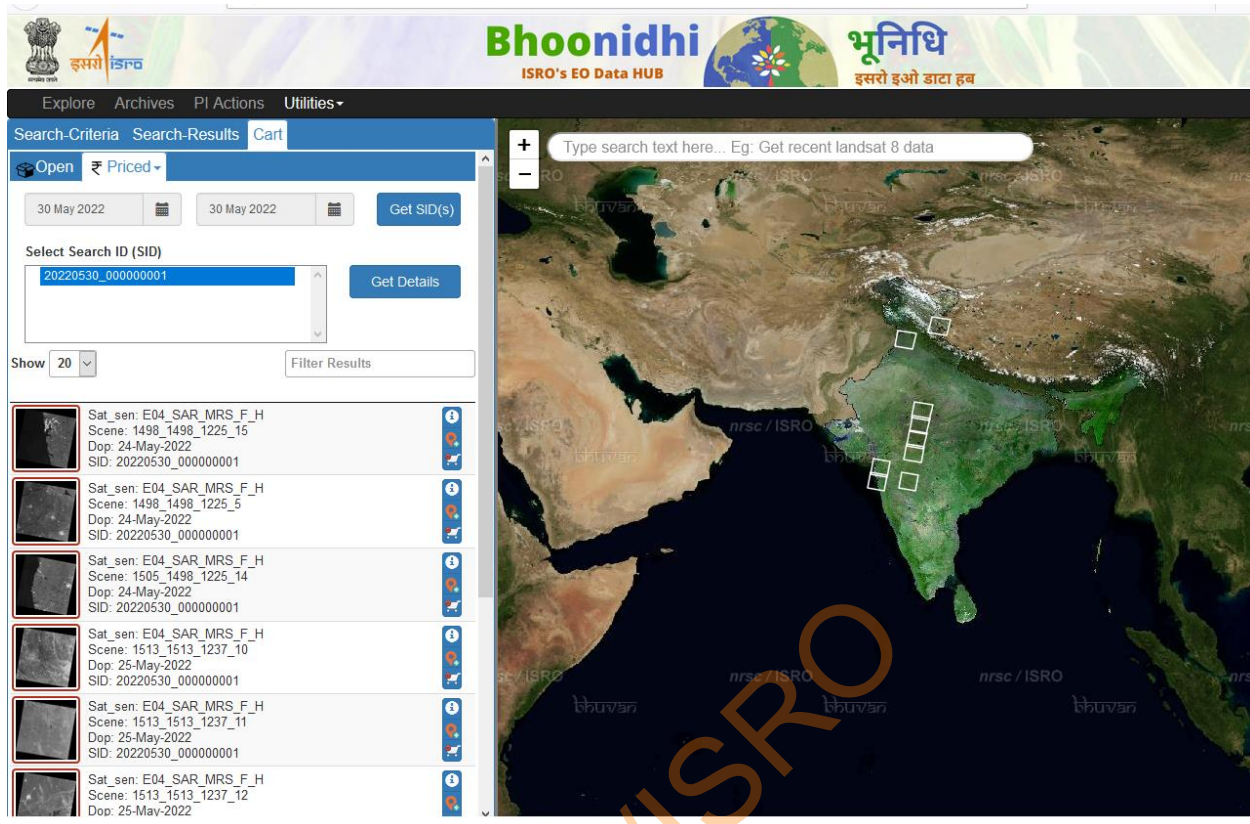
The open data products that are to be generated afresh as per user specification are added to the OpenData_OnOrder cart. Once all the selections for the given Search ID (SID) are made, the user can navigate to the OpenData_OnOrder cart. Next the user needs to select the Product Specification as per which the products are to be generated. After product specification selection, the details are to be added. The order will get generated upon clicking the 'Generate Order' button and the products will be received through FTP. This FTP intimation will be sent to the registered email address.

The cart is maintained day-wise and Search (SID) wise. The user can navigate to previous days cart by changing the date on the cart page and subsequently selecting the required Search SID. The products from the previous day's Search ID can also be pushed for order generation at a later date.

2.3.4.2 Priced Data Cart

Under Priced Cart option user has to select "Single Scene" and then select the SID for which CART is to be confirmed. Once the scenes are added to the priced cart, user has to provide the product details using "Product Specification" button. Next the user has to Generate PI by using "Generate Performa Invoice" button at the GUI. "Single Scene" is to be selected for scene based single sensor ordering and "Multi Scene" is to be selected for scenes from multiple sensors e.g. Merged, Stereo, etc.








Like the OpenData_OnOrder cart, this cart is also maintained day-wise and Search (SID) wise. The user can navigate to previous days cart by changing the date on the cart page and subsequently selecting the required Search SID. The products from the previous day's Search ID can also be pushed for order generation at a later date.

2.3.5 Product Specification

User has to provide the details of the products to be generated on demand. These details are to be provided for all the sensors selected in the current search Id. This can be added by using “Add Products” button. Once the product specification is provided for all the sensors, after providing “Pi Reference” and “Pi Date”, user has to select “Generate Performa Invoice” button.

Archives PI Actions Utilities
Lo

Search-Results Cart

0220530_000000001

en: E04_SAR_MRS_F_H
r: 1498_1498_1225_5
14-May-2022
0220530_000000001

en: E04_SAR_MRS_F_H
r: 1505_1498_1225_14
14-May-2022
0220530_000000001

en: E04_SAR_MRS_F_H
r: 1513_1513_1237_10
15-May-2022
0220530_000000001

en: E04_SAR_MRS_F_H
r: 1513_1513_1237_11
15-May-2022
0220530_000000001

en: E04_SAR_MRS_F_H
r: 1513_1513_1237_12
15-May-2022
0220530_000000001

en: E04_SAR_MRS_F_H
r: 1513_1513_1237_13
15-May-2022
0220530_000000001

en: E04_SAR_MRS_F_H
r: 1513_1513_1237_15
15-May-2022
0220530_000000001

en: E04_SAR_MRS_F_H
r: 1513_1513_1237_4
15-May-2022
0220530_000000001

entries Previous 1 Next

[Select Product Specifications](#)

Product Details for E04_SAR_MRS_F_H Pricing Indian

Product Type	ST_Standard	Dispatch Mode	FTP
Processing Level	K_Single Look Complex Slant ra	Datum	WGS 84
Enhancement	00_Digital	Product Res	24.0
Projection	0_No Projection	Priority	Normal
Resampling	0_No Resampling	No of copies	1
Format	T_GeoTIFF	Quality	Quality Check

Cost

Cost type	scene (Rs)	Unit Rate	12000.00
No of scenes	9	IGST / CGST / SGST	0.0 / 0.0 / 0.0
Priority Charges	0.00	Final	108000.00
Discounts	0.00		

[Add Product Specifications](#)

Selected Products

Satellite-sensor	Product code	Dispatch mode	Datum	Product res	Priority	Copies	Quality	No of scenes	Cost	Other Params	Action
E04_SAR_MRS_F_H	ST0000KTV	FTP	WGS 84	24.0	Normal	1	NA	9	108000.00	-	

Total Cost : Rs 108000

User Ref: PI Reference: Ref Date:

2.3.6 Pro-forma Invoice (PI) Operations

Once the PI is generation it can be converted to the order using “Generate Order option”. This option has following services

- View PI
- Delete PI (All, selected)
- GSTIN Selection and Delivery address
- Save as PI PDF

The user can view the PI details, delete all/ selected items from a PI and can also download PI pdf.

Explore Archives PI Actions Utilities ▾

Show Search:

Selection	PI Number	PI Date	Get PI Details	Show Footprints
<input checked="" type="checkbox"/>	2551	24-DEC-2013	Details	Footprints
<input type="checkbox"/>	2434	19-DEC-2013	Details	Footprints
<input type="checkbox"/>	2429	19-DEC-2013	Details	Footprints
<input type="checkbox"/>	2423	19-DEC-2013	Details	Footprints
<input type="checkbox"/>	2422	19-DEC-2013	Details	Footprints
<input type="checkbox"/>	2421	19-DEC-2013	Details	Footprints
<input type="checkbox"/>	2414	19-DEC-2013	Details	Footprints
<input type="checkbox"/>	2412	19-DEC-2013	Details	Footprints
<input type="checkbox"/>	2410	19-DEC-2013	Details	Footprints
<input type="checkbox"/>	2409	19-DEC-2013	Details	Footprints

Showing 1 to 10 of 1,177 entries 1 row selected

Previous 1 2 3 4 5 ... 118 Next

Delete PI Save PI PDF Generate Order

2.3.7 Order Operations

After the PI is generated, the order is to be generated. This has following services. This option is available under “PI Actions”.

- Generate Order
- Order display
- Save as Order PDF

Once the order is generated the order details are displayed to the user along with the item level details. While generating an order user has to also provide the shipping address and also account number. The product will be disseminated via sftp and the details will be mailed once the product is available for download. For priced data, the user must ensure that they have created a data ordering account with NSIL.

2.3.8 User Categorization

The users are categorized under following 3 categories:

- Government Entities (GE): Following declaration form ([GE Declaration Form](#)) is to be submitted to data@nrsc.gov.in for Indian government users to declare status as GE
- Non-Government Entities (GE): All Indian users other than GE are tagged as NGE users.
- Foreign Entities (FE): All non-Indian users are tagged as Foreign Entities.

For Open Access of data finer than 5m, a declaration form is to be submitted by the agencies desirous of registering as GE. Once the form is received, verified and the organisation is accepted as “GE” by committee, all the users registered with the official email ID with same domain name as that of the organisation will be tagged as “GE” automatically. While registering, Indian users can then select their GE tagged organization and get registered as “GE” using official email Id.

2.3.9 NSIL Interface

In compliance with Indian Space Policy 2023, henceforth, all commercial activities with respect to IRS satellite data and products pricing would be handled by NSIL (eodata@nsilindia.co.in). The payment interface is now with NSIL instead of Bharatkosh. Hence, once the payment is made, the payment details and the Proform Invoice (PI) against which this payment is made is to be mailed to eodata@nsilindia.co.in.

A data ordering account is mandatory for ordering priced data from Bhoonidhi. For a new data ordering account creation with NSIL, please send a mail (mentioning your user id) to NSIL at eodata@nsilindia.co.in. The new data ordering account created will start with “N” followed by 4 numbers and 2 zeros (Nxxxx00).

There will no change in data delivery timelines. For urgent requirements (delivery within 5-6 hours), additional charges of 50% would be applicable. All the normal priority products are serviced in “first come, first served” basis.

The existing registered userID at Bhoonidhi will continue. Re-registration is not required.

The satellite data product pricing at Bhoonidhi is implemented based on the guidelines in the Indian Space Policy, 2023. Some of the products better than 5m are priced for GE users also as per the Indian Space Policy, 2023. All products better than 5m are priced for foreign users. For further details [FAQ page](#) at Bhoonidhi to be referred.

3 MAPTOOLS KIT

Bhoonidhi application provides an interactive mapping interface where the users can draw the area of interest and visualize the extents of the result datasets. The various mapping tools that are available on Bhoonidhi are:

Bhuvan map server will be used for both satellite map as well as administrative boundaries. Map server (GeoServer) will also be deployed to facilitate publishing of the image chip, drawing image boundaries/ footprint, etc.

Following are the features made available

- Free Draw to facilitate drawing area of interest
- Product footprint
- Publishing Product (tiff) on Map by Geotagging and On mouse over displays the backend layer of cities
- Zoom to center of the product selected on Map. This will help in focusing back to the scene selected after large zooming was done
- Layer Selection Tool
- Point Marker

3.1 Layer Selection Tool

This tool enables the users to toggle between the various base layers. Two base layers are provided by default i.e. Bhuvan Satellite base layer and Bhuvan Admin base layer.

3.2 Drawing Tools

Two drawing tools are available through which the users can draw the Area of Interest (AOI).

- Draw Rectangle: Users can select the draw rectangle option and drag the mouse on the appropriate location on the map to draw a rectangular AOI. As soon as rectangle is drawn, data search is triggered to fetch the datasets intersecting the AOI.
- Draw Marker: Users can select the draw marker option and drop the marker at the appropriate location on the map. As soon as marker is drawn, data search is triggered to fetch the datasets intersecting the marker location.
- Free draw option to make polygon using multiple points marked at the Map.

3.3 Latitude-Longitude Display

This tool displays the latitude and longitude of a point on mouse over. The tool displays latitude and longitude in decimal format as well as DMS (Degrees Minutes Seconds) format.

3.4 Point Marker

This tool helps dropping a pointer at any given point and capturing the corresponding latitude and longitude of the selected point automatically.

3.5 Publishing Product

The image chip is converted into tiff and published at geoserver. This helps in getting the view of overlaying the product over based Bhuvan map.

3.6 Zoom Tool

This tool enables the users to zoom-in to and zoom-out from a particular location. Mouse scroll wheel can also be used to zoom-in and zoom-out.

4 UTILITIES

There are various utilities available which are basically for search and user order status motoring. Saved search option can also be used where the context saving is enabled.

4.1 SID Monitoring

Every Search Id can be monitored using this utility for AOI and coverage w.r.t. scenes selected. It displays the search criteria like AOI, date range, satellite, sensor, etc.

The screenshot displays the Bhoonidhi ISRO's EO Data HUB interface. The top navigation bar includes 'Explore', 'Archives', 'PI Actions', and 'Utilities'. The 'Search ID Monitor' utility is active, showing a search form with a date range from 01 March 2022 to 17 May 2022 and a search ID of 20220506_000000010. The search details section indicates the search criteria as a polygon, the AOI Type as a polygon, the search as EOS-04_SAR(CRS), the date range as 27-02-2022 to 16-03-2022, and the search product as Standard. A note states: 'User AOI input represented in red.' Below the search details, a list of three SAR scenes is shown, each with a thumbnail image and a footprint on a map of India. The first scene (Sat: E04 Sen: SAR, Scene: 342_108_4, Dop: 08-Mar-2022, Pricing: Priced) has a red footprint, while the other two scenes have green footprints. The map also shows a red rectangle indicating the AOI. The interface includes a 'Filter Results' button and a pagination control showing 'Showing 1 to 3 of 3 entries'.

4.2 User Order Status Monitoring

This utility is to monitor the status of order. Along with the order, items under the selected order also can be monitored. . The user has to provide a date range and for that date range all the orders are filtered. User can select any order and monitor the status. The scenes under the order are also shown on the map. Yellow color footprint on the map means "Product Not Yet Dispatched" and green footprints on map means "Product Dispatched".

Order Status Monitor

01 March 2022 17 May 2022 **Get Orders**

408345 **Submit**

Order Status

Order Placed ✓ Order Confirmed ✓ Pre Production ✓

In Production Ready for Delivery Order Delivered

Show 20 Search:

	SAT	SEN	DOP	Status	Orbit	Product Code	Priority
1	E04	SAR	2022-03-08	READY FOR INGEST	342	ST0C00NTD	6
2	E04	SAR	2022-03-16	READY FOR INGEST	462	ST0C00NTD	6
3	E04	SAR	2022-02-27	READY FOR INGEST	205	ST0C00NTD	6

Showing 1 to 3 of 3 entries Previous 1 Next

4.3 Processing Tools

There are many utilities available for SAR data processing, product viewer and data product format converter

- SARPOLTOOL (Multi-Mission SAR Toolbox)
- Image Viewer Utility
- NetCDF to GeoTIFF Conversion tool

4.4 Saved Searches

This option has all the searched for which products were added to the CART but no action was further taken. This is basically enabled for context saving.

5 REGISTRATION & LOGIN, FEEDBACK MECHANISM

5.1 Registration & Login

Bhoonidhi Registration

Personal InfoAddressContact DetailsSubmit Registration

Salutation *

Ms

Full name *

Ankitha

Gender

female

Login Id *

loginid

password *

password

User Type *

Central Government

Sign In

User ID

Password

Login

Don't have an account? [Sign Up](#)

Forgot your password?

HOME

5.2 Feedback Mechanism

For every user session, user has to provide feedback on the product usage. User has to specify the research/analysis/applicability domain in which the products being downloaded will be utilized.

User can also provide feedback on ease of download, target area and products search options, download speed, etc. This feedback from users will be utilized for continuous improvement.

Bhoonidhi Survey

Dear TEST , Your inputs are valuable to us, kindly specify your area of study

☒ Environment Security and Bio-Resources

Forest cover and type mapping

Desertification status mapping

Coastal, mangroves, Coral Related

Snow and glacier studies

Wetland inventory and conservation plans

☐ Cartography

Satellite based topo-map updation

Digital Elevation Model

Large scale mapping

Digital Elevation Model

Cadastral level mapping

☐ Geology and Mineral Resources

Landslide hazard zonation

Mineral /oil exploration, mining areas

Seismo-tectonic studies

☐ Ocean and Meteorology

Ocean status forecast

Storm surge modelling

Tropical cyclone and mesoscale studies

Ocean primary productivity

Extended range monsoon prediction

☐ Rural Development

Drinking Water mission

Wasteland mapping/updation

watershed development and monitoring

Land records modernization plan

☐ Water Security

Irrigation infrastructure assessment

Water resource information system

Snow melt run-off estimation

Reservoir capacity evaluation

Site selection for hydro-power

☒ Disaster Management Support

Floods, cyclone, drought, landslide, earthquake

Early warning systems and decision support tool

☐ Climate Change Studies

Mapping the indications, monitoring the agents

Characterization of climate variables

Methane emission and Timberline study

Atmosphere studies

☐ Image processing Algorithms

Data mining algorithms

Time series analysis

Radiometric anomaly characterization

Geometric Data quality characterization

Image Enhancements

☐ Interested in collaborative project

Multi-spectral data compression

Spatial database management and data mining

Design and development of Calibration site (optical)

Automated Data Quality Assessment technique

Information fusion methods for multi-sensor data

FeedBack Form

Name *

Please enter your Name *

Mobile

Please enter your mobile

Email *

Please enter your email *

Please rate our application

★ ★ ★ ★ ★

Four Stars

Any Suggestion *

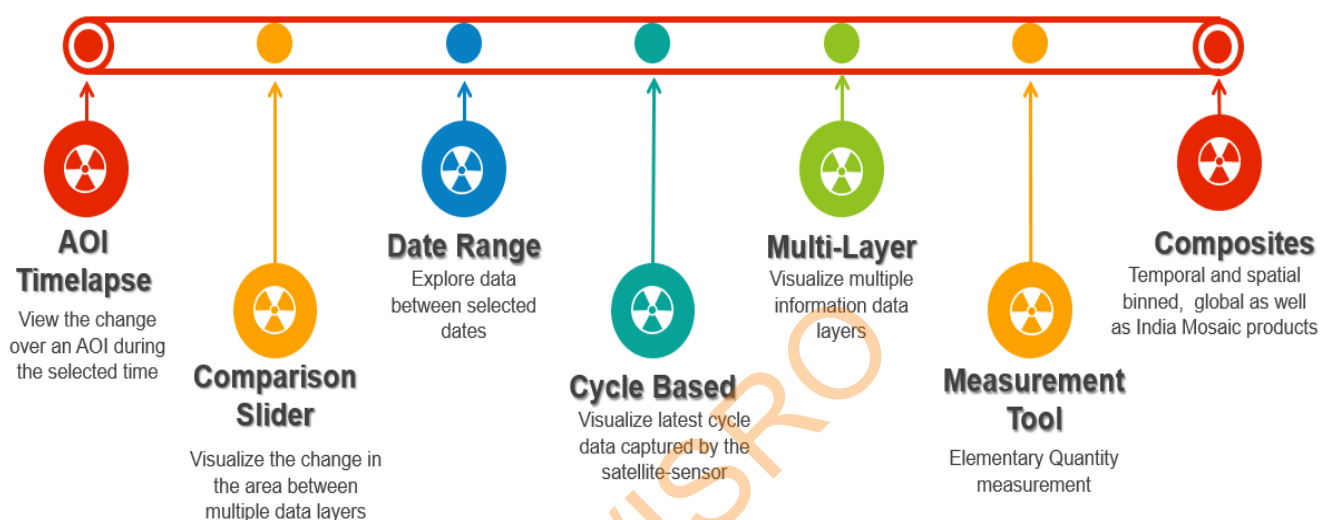
Message for me *

Submit FeedBack

Reset

6 BHOONIDHI VISTA

This application at Bhoonidhi is for multi sensor EO data visualization. Bhoonidhi VISTA (Visualization of Terrestrial Acquisitions) provides multi-mission-sensor data visualization; users can visualize the latest view of India captured by Indian and other EO sensors in native resolution. Users have been using Vista for Glacier Monitoring, Water resource Monitoring, Flood Impact Assessment and other applications.



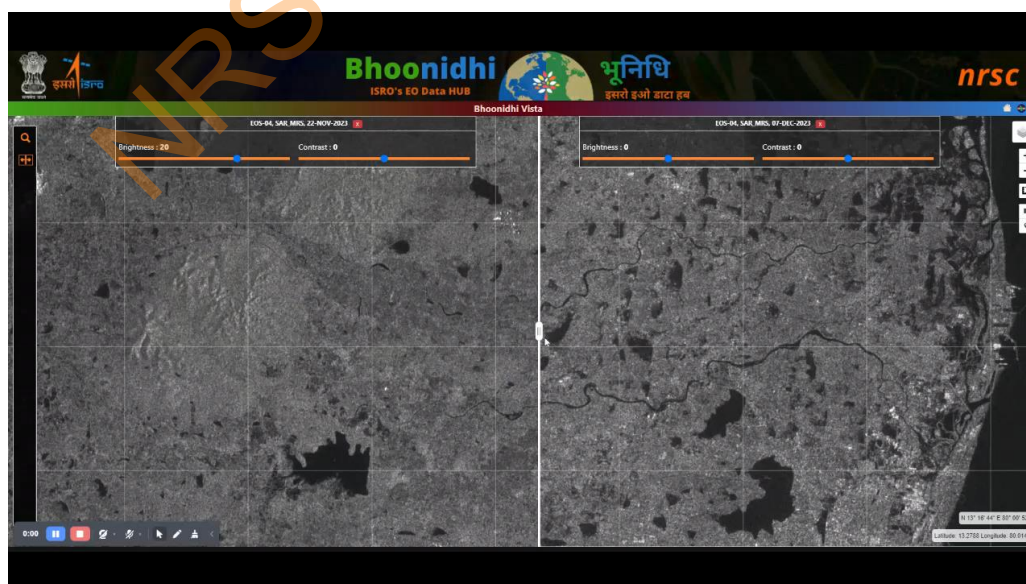
Features of Bhoonidhi-Vista

The data can be visualized by selecting the various layers and datasets and tools like Comparison slider, Animation tool, Multi-layer visualizations, etc.

Data can be selected across dates and sensors and comparison can views using Comparison slider tool

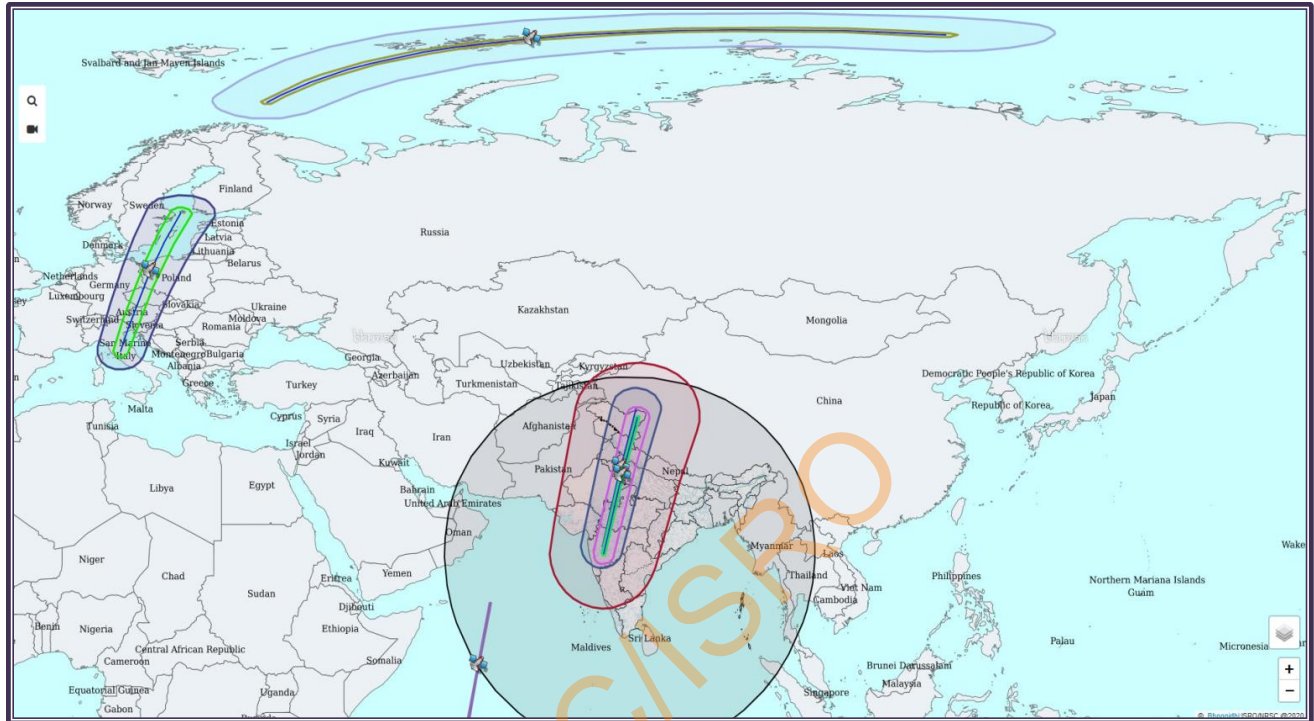
Cyclone Michuang Dec-2023 (Chennai)

– Pre and Post flood view using EOS-04 MRSC SAR data



7 BHOONIDHI UPAGRAH

This application is for tracking satellites live, predict the position of satellite at a future time and view the nominal swaths of the payloads



8 BHOONIDHI – PLANNeR

This is a request Placing Service at Bhoonidhi which allows users to submit request for fresh acquisitions and is currently enabled for EOS-04 mission.

- Provision to view possibility & dates of acquisitions to all users.
- Authorized users allowed to submit planning requests.
- The request will be honored as per the feasibility

The screenshot displays the Bhoonidhi PLANNeR web interface. The header includes the ISRO logo, the text 'Bhoonidhi ISRO's EO Data HUB', and 'भूनिधि इसरो ईओ डाटा हब'. Below the header, there are navigation tabs: 'Place Request', 'View Opportunities', 'Monitor Request', and 'Manager Functions'. The 'Monitor Request' tab is active, showing a table of requests. The table has columns: SNo, Sub, Sat, Sen, Mode, StartLL, EndLL, and Info. The first 12 entries are visible, with the first 6 having checkboxes in the 'Sub' column. Below the table, there is a 'Disclaimer: There may be changes in incidence angle or request can be rejected due to various reasons' and buttons for 'Accept Request' and 'Reject Request'. To the right of the table is a satellite image of a coastal area with several yellow and red rectangles overlaid, representing planned or requested acquisitions.

SNo	Sub	Sat	Sen	Mode	StartLL	EndLL	Info
1	<input checked="" type="checkbox"/>	E04	SAR	FR1	18.8066, 76.2609	20.0015, 75.7656	
2	<input checked="" type="checkbox"/>	E04	SAR	FR1	18.8059, 76.487	20.0718, 75.9765	
3	<input checked="" type="checkbox"/>	E04	SAR	FR1	18.8059, 76.7127	20.0718, 76.2022	
4	<input checked="" type="checkbox"/>	E04	SAR	FR1	18.8059, 76.9384	20.0718, 76.4279	
5	<input checked="" type="checkbox"/>	E04	SAR	FR1	18.8059, 77.1641	20.0718, 76.6536	
6	<input checked="" type="checkbox"/>	E04	SAR	FR1	19.3984, 77.265	20.0718, 76.8793	
7	<input type="checkbox"/>	E04	SAR	FR1	18.8057, 76.2622	20.0015, 75.7609	
8	<input type="checkbox"/>	E04	SAR	FR1	18.805, 76.4883	20.0718, 75.9716	
9	<input type="checkbox"/>	E04	SAR	FR1	18.805, 76.714	20.0718, 76.1973	
10	<input type="checkbox"/>	E04	SAR	FR1	18.805, 76.9397	20.0718, 76.4229	
11	<input type="checkbox"/>	E04	SAR	FR1	18.805, 77.1653	20.0718, 76.6486	
12	<input type="checkbox"/>	E04	SAR	FR1	19.398, 77.2635	20.0718, 76.8743	

Any user can check the data acquisition feasibility, but only registered and authorized users can place a confirmed planning request.

9 BHOONIDHI RESOURCES (help videos)

At Bhoonidhi resource users can find the mission handbooks, product specification, sample free products and help videos on accessing data at Bhoonidhi. [Bhoonidhi Help](#)