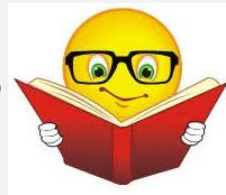


BHOONIDHI (भूनिधि)
ISRO'S EO DATA HUB

User Guide



WDSD, DPSD, DPA
National Remote Sensing Centre (NRSC),
Indian Space Research Organisation (ISRO),
User Manual, March 2021

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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 satellite data products and priced data products to online users on web. It is equipped with various user friendly search options to ease target area identification and subsequent download or place order. The selected products are to be added to the CART. These saved products in the CART can be directly downloaded or downloaded with some delay later. Priced data products are to be added under a Proforma Invoice and then converted to order and will be disseminated at FTP server after on demand generation at IMGEOS.

Current version of Bhoonidhi is enabled for standard single sensor products only. The multi-sensor products like merged, stereo, mosaic will be released in next version.

1.2 Point of Contact

Bhoonidhi Team: <mailto:bhoonidhi@nrsdc.gov.in>

1.3 Organization of Manual

This manual is guide to use Bhoonidhi web application for downloading and placing order for satellite data products. The document covers the overall flow for downloading the product and placing order for priced products. It also covers how to start the flow for downloading of products under the title **"GETTING STARTED"**.

1.4 Acronyms and Abbreviations

| | |
|--------|--|
| ODAP | Open Data Access Portal |
| UOPS | User Order Processing System |
| OCM | Ocean Colour 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 |

2 USER INTERFACES

In order to download the products, user has to first identify the product he/she is interested in downloading. 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 directly downloaded or downloaded with some delay later.

To order the satellite data products, the user has to first identify the area of interest, resolution and the sensor. Various user friendly search options are provided to the user to target the area of interest from the archives or product catalogue. The selected scenes are to be added to the CART. User has to select the product specification of the saved products in the CART. Then user can generate proforma invoice and then generate order subsequently.

Current version of Bhoonidhi is enabled for standard single sensor products only. The multi-sensor products like merged, stereo, mosaic will be released in next version.

2.1 User Access Levels

In order to browse through the products catalogue no login is required. The product download or placing order for priced data can be done only by registered users after login. Option for registration by new user is also available.

Following are the major user interfaces provided to the user for downloading the free products from the product catalog or placing order for priced products.

2.2 Default View - Archives

“Archives” is the default view shown to users. 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.

| Satellite | Availability | Coverage |
|----------------|-------------------------|-------------|
| Aqua | 12/31/2003 - till date | |
| Carto Sat-1 | 05/08/2005 - till date | |
| Carto Sat-2 | 05/08/2007 - till date | |
| Carto Sat-2A | 04/29/2008 - till date | |
| Carto Sat-2B | 07/13/2010 - till date | |
| Carto Sat-2C | 03/01/2016 - till date | |
| Carto Sat-2D | 02/15/2017 - till date | |
| Carto Sat-2E | 06/13/2016 - till date | |
| Carto Sat-2F | 01/01/2017 - till date | |
| Carto Sat-3 | 06/10/2020 - till date | |
| IRS-1A | 03/10/1988 - 08/01/1991 | |
| IRS-1B | 08/01/1991 - 09/01/1998 | |
| IRS-1C | 12/28/1995 - 09/21/2007 | |
| IRS-1D | 09/27/1997 - 01/20/2010 | |
| Komp Sat-3 | 01/01/2018 - till date | |
| Komp Sat-3A | 01/01/2018 - till date | |
| Land Sat-5 | 01/04/1986 - 10/29/2001 | |
| Land Sat-8 | 01/01/2017 - till date | |
| NOAA-11 | 08/25/1994 - 08/13/1994 | |
| NOAA-12 | 09/14/1994 - 11/04/1995 | |
| NOAA-14 | 04/03/1995 - 09/22/2010 | |
| NOAA-16 | 06/20/2001 - 07/15/2013 | |
| NOAA-17 | 09/20/2005 - 12/31/2010 | |
| NOAA-18 | 09/20/2005 - 10/09/2009 | |
| NOAA-19 | 04/29/2010 - 07/15/2013 | |
| Novasat-1 | 04/01/2019 - till date | |
| Ocean Sat-1 | 05/26/1999 - 08/08/2010 | |
| Ocean Sat-2 | 12/01/2009 - till date | |
| RISAT-1 | 05/08/2012 - 03/17/2017 | |
| RISAT-2B | 05/24/2019 - till date | |
| RISAT-2B1 | 12/14/2019 - till date | |
| RISAT-2B2 | 11/10/2020 - till date | |
| Resource Sat-1 | 05/08/2003 - 10/09/2019 | |
| Resource Sat-2 | 09/01/2010 - till date | |
| AWFS | 05/09/2011 - till date | Others View |
| LISS3 | 09/01/2010 - till date | Others View |
| LISS4(MONO) | 05/05/2011 - till date | Others View |
| LISS4(MX3) | 05/09/2011 - till date | Others View |

Window 1: Data Availability

2.3 Main View - Explore

This option is for search and ordering the data. It has following 3 sub menus

a) Search Criteria

This is the main view using which user can browse through the catalogue, identify the area of interest, select the products to be downloaded and then download the products from CART.

b) Search Results

This view is the main view using which user can browse through the catalogue, identify the area of interest, select the products to be downloaded and then download the products from CART.

c) CART

This view is the main view using which user can browse through the catalogue, identify the area of interest, select the products to be downloaded and then download the products from CART.

- PI Actions**

Once the Proforma invoice is generated this option is to be used to take action on the PI or generate the work order.

- Utilities**

This has utilities primarily for monitoring the order or downloads. It also has option to download the “Batch Downloader” executable.

- **Profile**

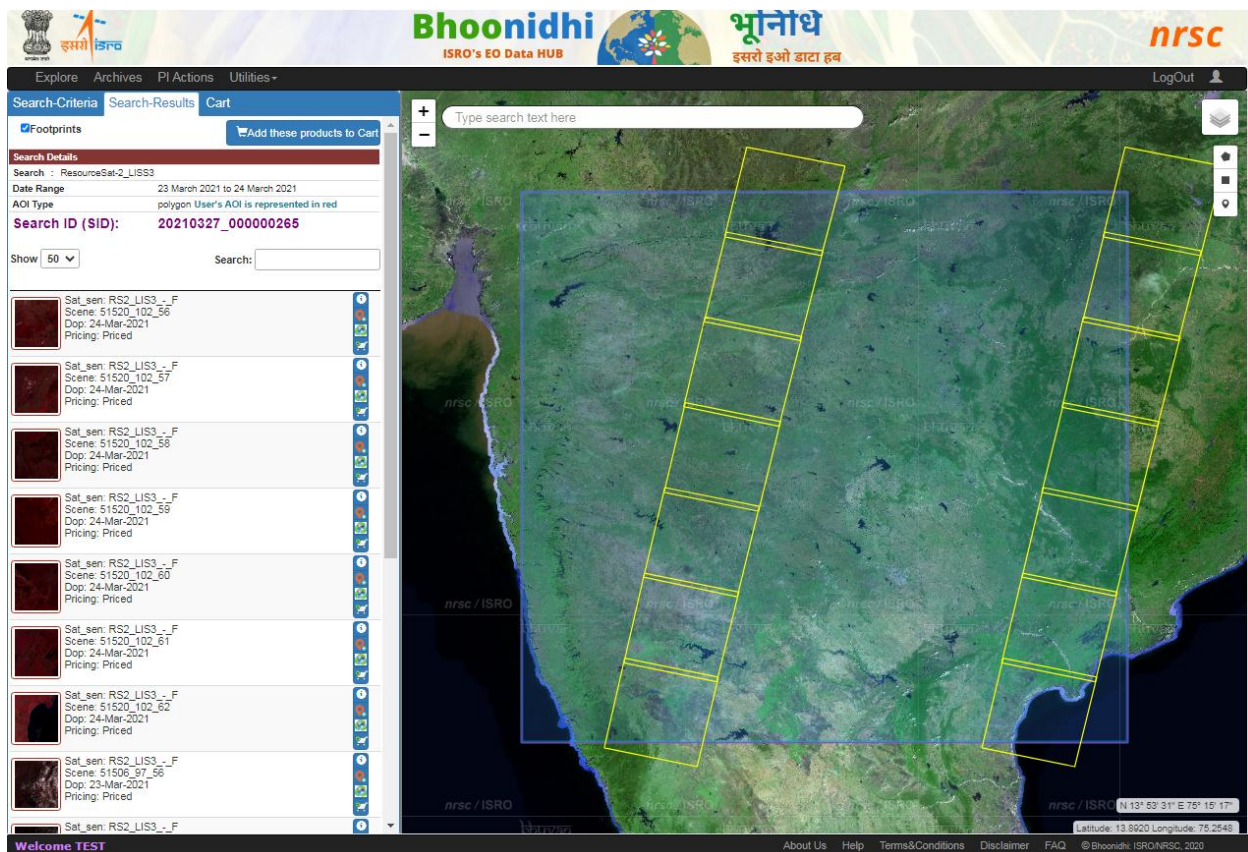
At the extreme right is the profile updation related menu using which the user can either change the password or update the details in the profile which were provided while registration.

2.3.1 Search-Criteria

This tab has different options for searching the data from archives. User has to select Area of Interest, date range, Product, Resolution, Source, Open data/Priced data and optional Additional filters. Based on user inputs the data is filtered from the archives and displayed to the user.

From the list of satellites for which the Priced products are available, user can select any of the sensors and select product specification and generate proforma invoice and generate order subsequently. For the data belonging to that particular satellite and sensor combination cloud percentage can also be selected.

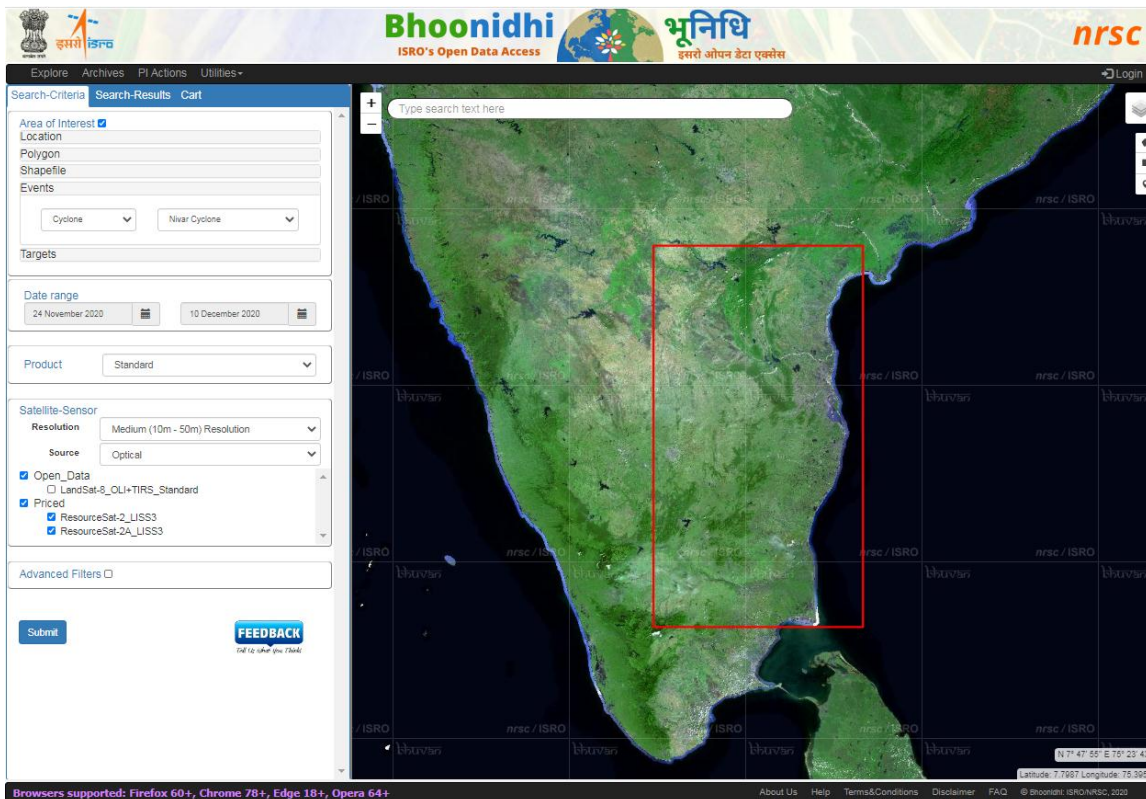
Window 2: Search Criteria



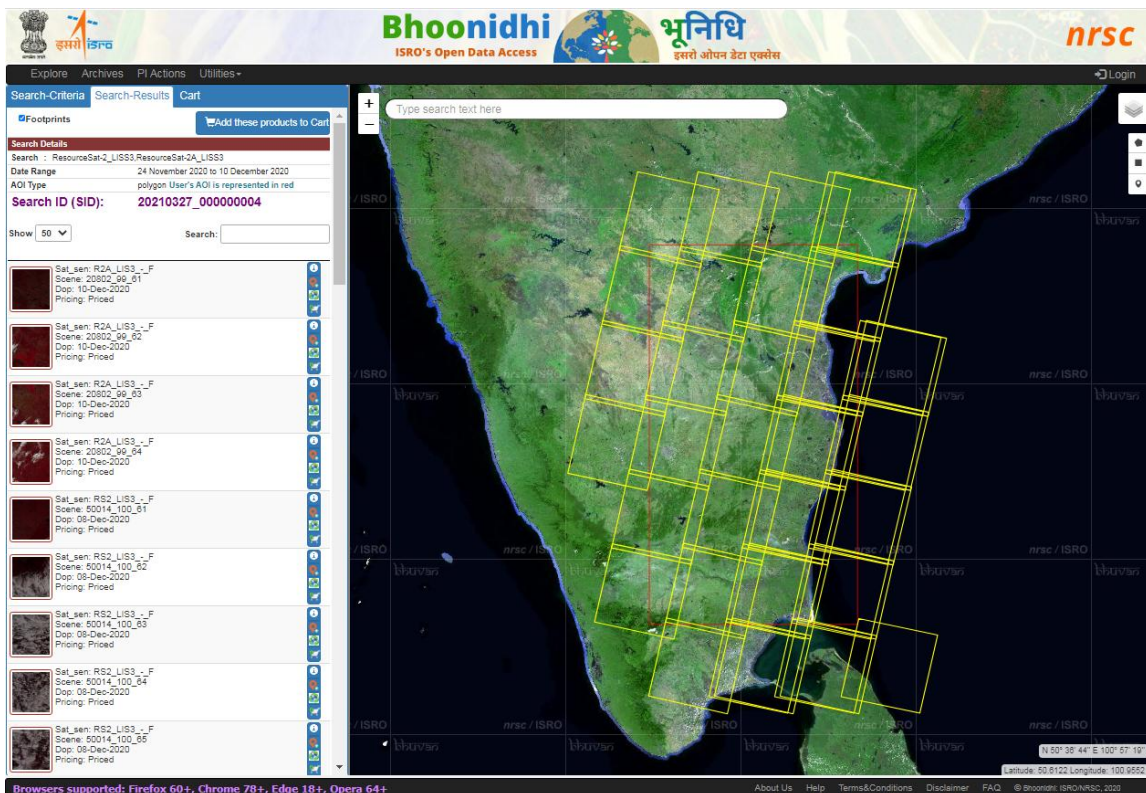
Window 3: Search results

2.3.2 Event Based

The major events like floods, draught, avalanche, earthquake, etc will be tagged and made available to the user for selected. The software will automatically fetch all the data products belonging to the area in which the selected event had occurred. The user can then download the selected products from these fetched products.



Window 4 : Event based data search



Window 5: Event based data search results

2.3.3 Area of Interest (AOI) Identification

The user can specify the area of interest by using any one of the following options:

- Search Criteria
 - AOI - Point, polygon, location, Event , Shapefile
 - Resolution
 - Date range
 - Satellite - sensor
- Map Tool
 - Free Draw, Draw marker
 - Image Footprint display
 - Publish on Map
 - Map Layer selection
 - Zoom to center

2.3.4 Smart Search (Text Based Search)



Window 6: Smart Search/ Text based search

Smart Search is a functionality that has been enabled to search products in Bhoonidhi using common sentences and phrases. This enables for a quick and faster user ordering. Type a search query like indicated below and press enter to fire the Text Based Search.

The following are the features of **Smart search / Text-based** search::

1. Event search
Example: Get Landsat data of Kerala floods
2. Resolution based search
Example: Get fine resolution data from yesterday
3. Satellite, sensor based search
Example: Landsat OLI and c2e mx data over Hyderabad region.
4. Date range specifications

Example formats: 31-07-2020, 31st December 2020, 09 Feb 2019, 22nd November, 2 weeks, 28 days, 4 years

5. Location specifications (in both names and latitude longitude) & Area/radius specifications

Example:

- a. Get C03 data from Hyderabad over the area of 200 km²
- b. Get RS2 data from lat 17.45 and lon 78.4 with radius 20 km

6. Cloud percentage specification

Example: Get RS2 data with cloud threshold of 30

7. Pricing based search (priced or open)

Example: Fetch recent low resolution open optical data

8. Advanced filtering options (Path, Row, incidence angle, look direction, node, transpol, recvpol, etc.)

Example:

- a. get r2a data with path 111 from 01-01-2021 till 29-03-2021
- b. get risat 1 sar crs data from 01-12-2016 till today with ascending node and left look direction

9. Sensor type based search (Optical, Microwave, Infrared, Scatterometer, etc)

Example: Get high resolution microwave data from the last 2 years over Hyderabad

10. Product type based search

Example: Get Cartosat-2E standard products

11. Imaging mode based search

Example: Get C2E spot imaging products

12. Smart intersection and union of multiple search conditions in the query

Example: Get C2e and c03 mx product (Will fetch mx products of c2e and c03)

Smart Search Conditions

1. Cannot search for all the satellite data available on Bhoonidhi
2. Cannot search fine resolution products along with other resolution satellite products. Fine resolution products have to be searched independently.
3. Multiple locations cannot be searched in the current release.
4. If satellites are searched across resolutions, the results are restricted to 15 satellite sensor configurations and the fine resolution results are not displayed on the GUI.

5. Polygon based search is not available in the current release.

2.3.5 Search Results

User has to select the AOI, resolution, date range, product types, Priced/Open data wise sensors for searching the data sets. Each search by user is assigned a SearchID 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.

Products can be directly downloaded from the Open Cart. For products in Priced Cart, products details are to be provided by user.

Pagination

Pagination is enabled for 50 products at one fetch. Add more results option is provided to fetch the next set of 50 products. The product fetch is ordered/ sorted based on sensor and imaging date. The fetch results are displayed on the map also. This gives the design flexibility to provide wider range for AOI and date range for fetching the data from backend.

Search Id

Each search by user is assigned a SearchID which is the reference for adding the priced products. For each SearchID, user can check the products confirmed in the CART on the map and convert to PI. This also gives the design flexibility where same user can login from multiple systems. Every search is handled independently.

2.3.6 CART Features

At integrated Bhoonidhi there are two different carts; Open and Priced. The look and feel for both the carts is same. This also shows the layout of selected items in white color on map.

If not logged in, ask for login with registered user Id. If not registered, alert to register with registration option available

Using this action "Add All to Cart", all the products fetched till that time can be added to cart at one shot.

Priced CART

Once the scenes are added to the priced cart, user has to provide the product details so the same can be sent to IMGEOs for on demand product generation using "Product

Specification” button.. For DQE products, activity ID selection is to be done. The estimated cost is also displayed to the user. Finally the user has to Generate PI by using “Generate Proforma Invoice” button at the GUI.

Open CART

The products are to be added to the cart for download. If the product is readily available for online download, the download option in the CART will be enabled else it will be disabled. Once the product is available for online download, intimation will be sent to the user via email and then the download link also will be enabled in the CART.

2.3.7 PRICED DATA ORDERING

2.3.7.1 *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 Proforma Invoice” button.

2.3.7.2 *Proforma 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.

2.3.7.3 *Order Operations*

After the Proforma Invoice is generated, In PI Actions tab the user can select PI (Proforma Invoice) from the list and order is to be generated. This has following services

- 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.

2.3.8 Product Download

The products are either available directly for download or with delayed download. For every option the user is informed. The products are to be first added to the CART. Once the selections in the CART are confirmed, the products can be downloaded online by the user.

Always the product will not be available for direct download. Some products will be copied from the IMGEOs archive for the online download. The automatic workflow takes care of making the product available for online download but with a slight delay. The user is intimated once the products are made available for online download through email. Then the download link also is enabled and the product is marked by a green box.

The user can either download product using GUI option or “Batch Downloader” tool. For UI option the product which has green box around it can be directly downloaded.

2.3.9 DOWNLOAD OPTIONS

2.3.9.1 GUI Based Direct online https download for selected products.

After confirming the cart users can click the download button to download the product.

2.3.9.2 Batch Product Downloader Tool

This option is facilitated through a Batch Downloader utility, which provide seamless download and also keeps track of the products successfully downloaded from the SID based orders. The products which are partially downloaded also are resumed automatically. The user has to install the download manager and then connect to the server by entering login credentials.

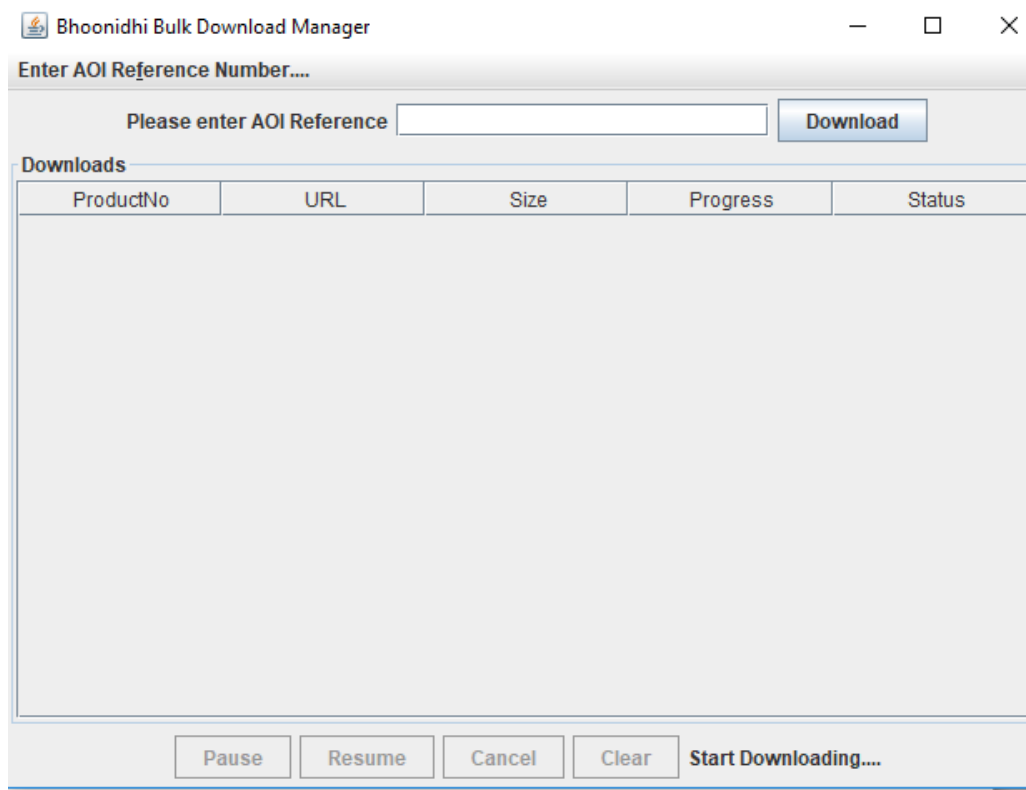
This is a tool available at Bhoonidhi for auto downloading of the products confirmed in the cart. Each search result confirmed in the cart is assigned a unique Search ID (SID). This SID is to be used for downloading the product using Batch Product Downloader tool.

Following steps are to be followed:

- Enter the SID number
- Click “Download” button
- Provide the directory in which the products are to be downloaded

The tool will automatically start parallel downloading of the products; ‘N’ at a time. The status column indicates the status of product availability. The download can be “instant”

or “delayed”. In case of “delayed” download, the product is fetched from data center and hence it may take time.



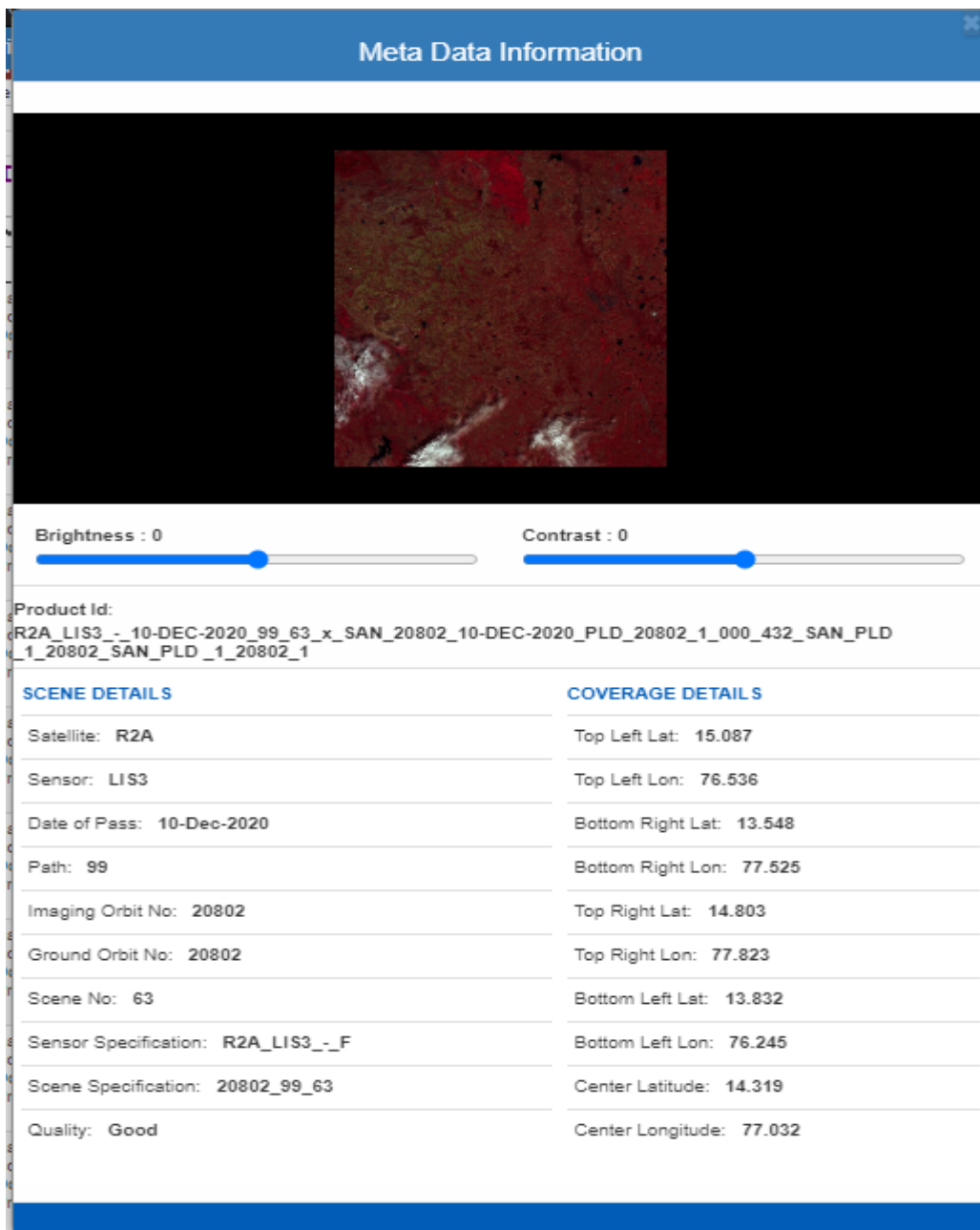
Window 7: Bulk Download

2.4 Map Interfaces

Bhoonidhi application provides an interactive mapping interface which is discussed in detailed in the next chapter.

2.5 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.



The screenshot displays a window titled "Meta Data Information". At the top, there is a blue header with the title. Below the header is a large satellite image showing a coastal region with red and white features. Underneath the image are two sliders for "Brightness : 0" and "Contrast : 0". Below the sliders is the "Product Id:" field with the value "R2A_LIS3_-_10-DEC-2020_99_63_x_SAN_20802_10-DEC-2020_PLD_20802_1_000_432_SAN_PLD_1_20802_SAN_PLD_1_20802_1". The main content is divided into two columns: "SCENE DETAILS" and "COVERAGE DETAILS".

| SCENE DETAILS | COVERAGE DETAILS |
|------------------------------------|--------------------------|
| Satellite: R2A | Top Left Lat: 15.087 |
| Sensor: LIS3 | Top Left Lon: 76.536 |
| Date of Pass: 10-Dec-2020 | Bottom Right Lat: 13.548 |
| Path: 99 | Bottom Right Lon: 77.525 |
| Imaging Orbit No: 20802 | Top Right Lat: 14.803 |
| Ground Orbit No: 20802 | Top Right Lon: 77.823 |
| Scene No: 63 | Bottom Left Lat: 13.832 |
| Sensor Specification: R2A_LIS3_-_F | Bottom Left Lon: 76.245 |
| Scene Specification: 20802_99_63 | Center Latitude: 14.319 |
| Quality: Good | Center Longitude: 77.032 |

Window 8 : Metadata Information

2.6 MAP Tool Kit

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
- Image footprint
- Actual Satellite Image

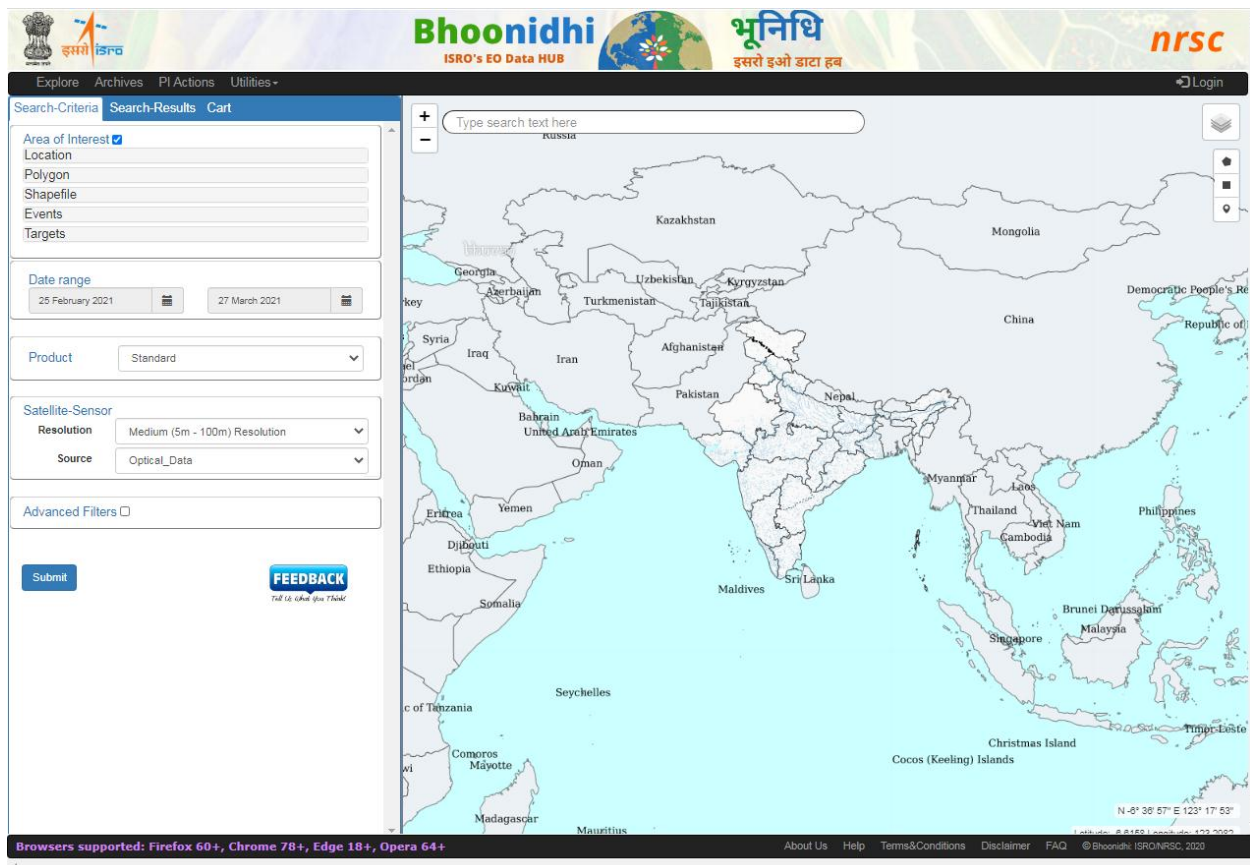
- Image (tiff) on Map – On mouse over displays the backend layer of cities
- Zoom to center of the product selected on Map. This will help in focusing back to the scene selected after large zooming was done

3 MAP TOOLS

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:

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.

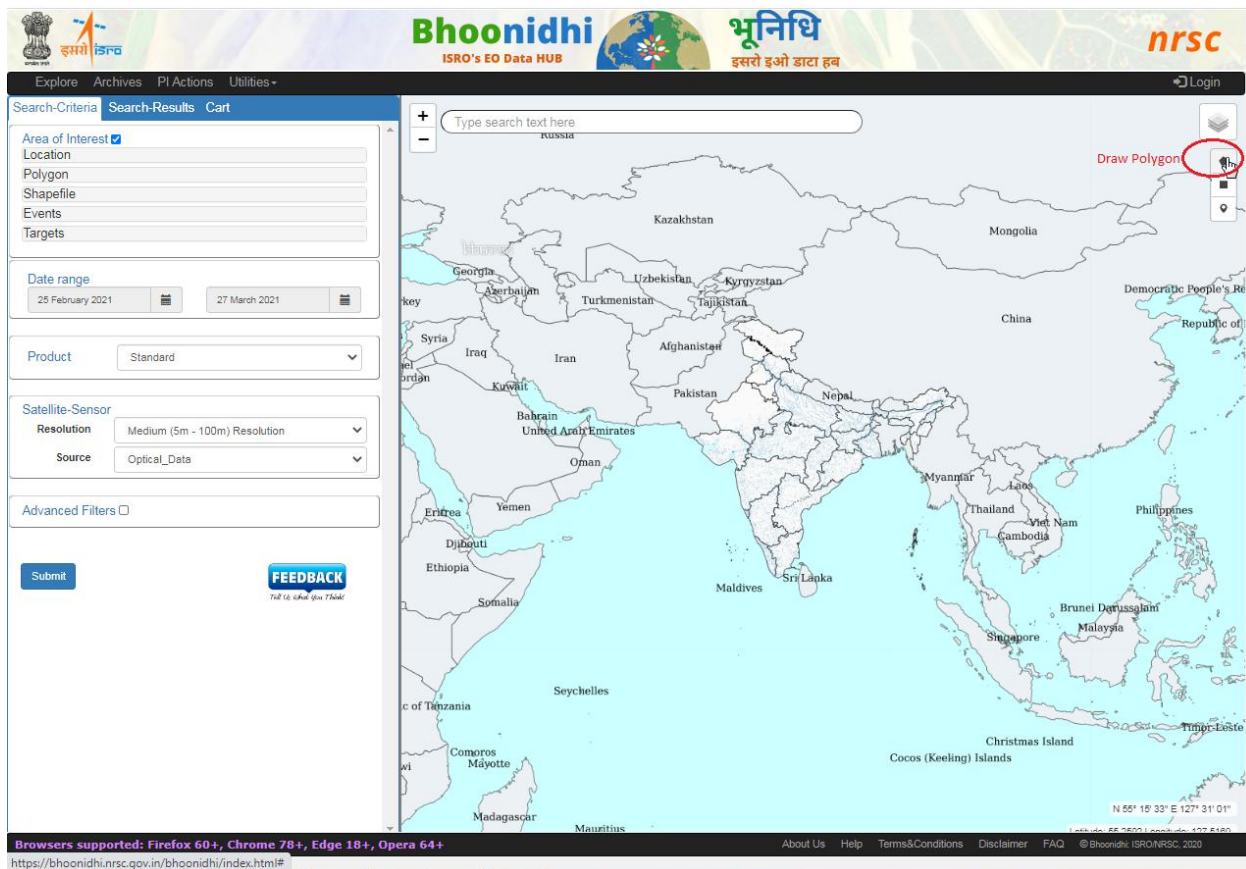


Window 9 : Layer Selection Tool

3.2 Drawing Tools

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

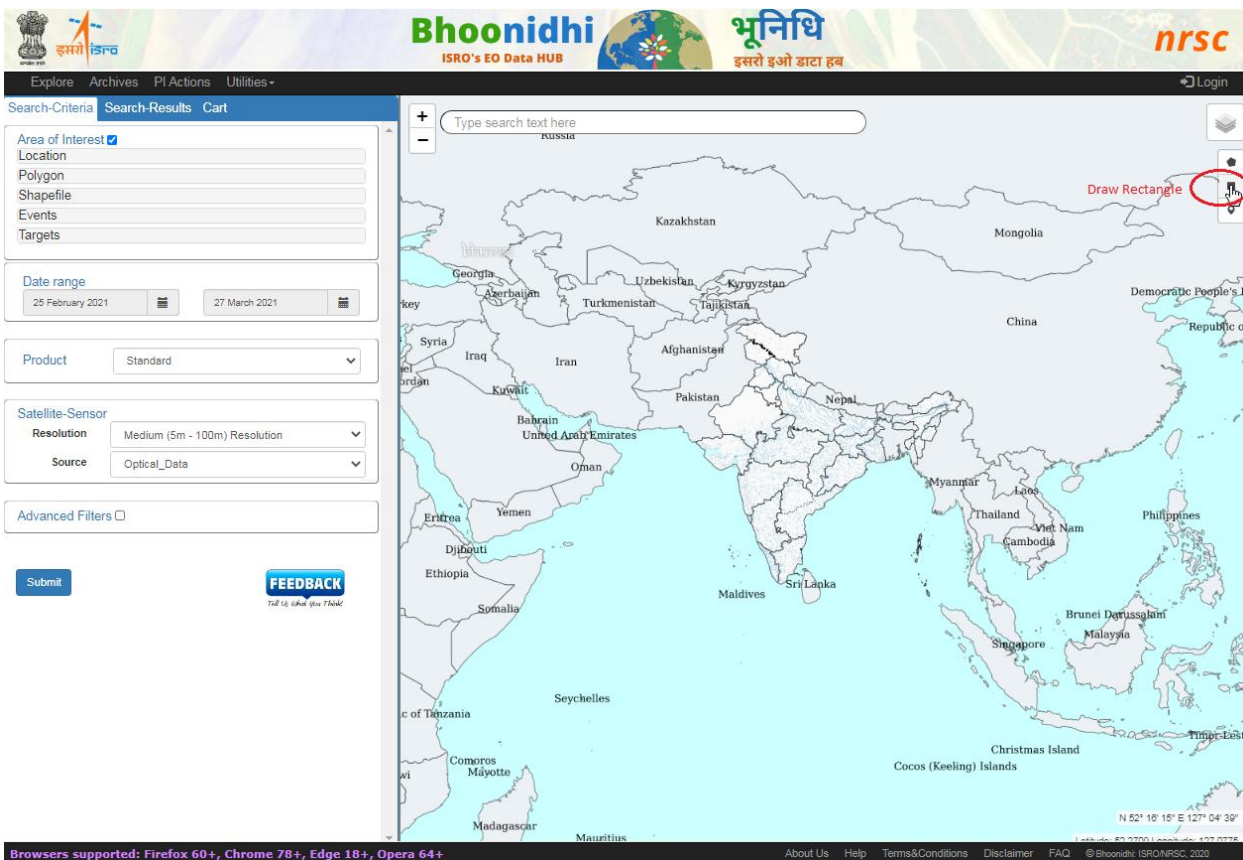
- **Draw Polygon:** Users can select AOI by clicking polygon option and click multiple points to draw a desired polygon shape and click the first point again to close the polygon on the appropriate location on the map. As soon as a polygon is drawn, data search is triggered to fetch the datasets intersecting the AOI.



Window 10 : Draw Polygon

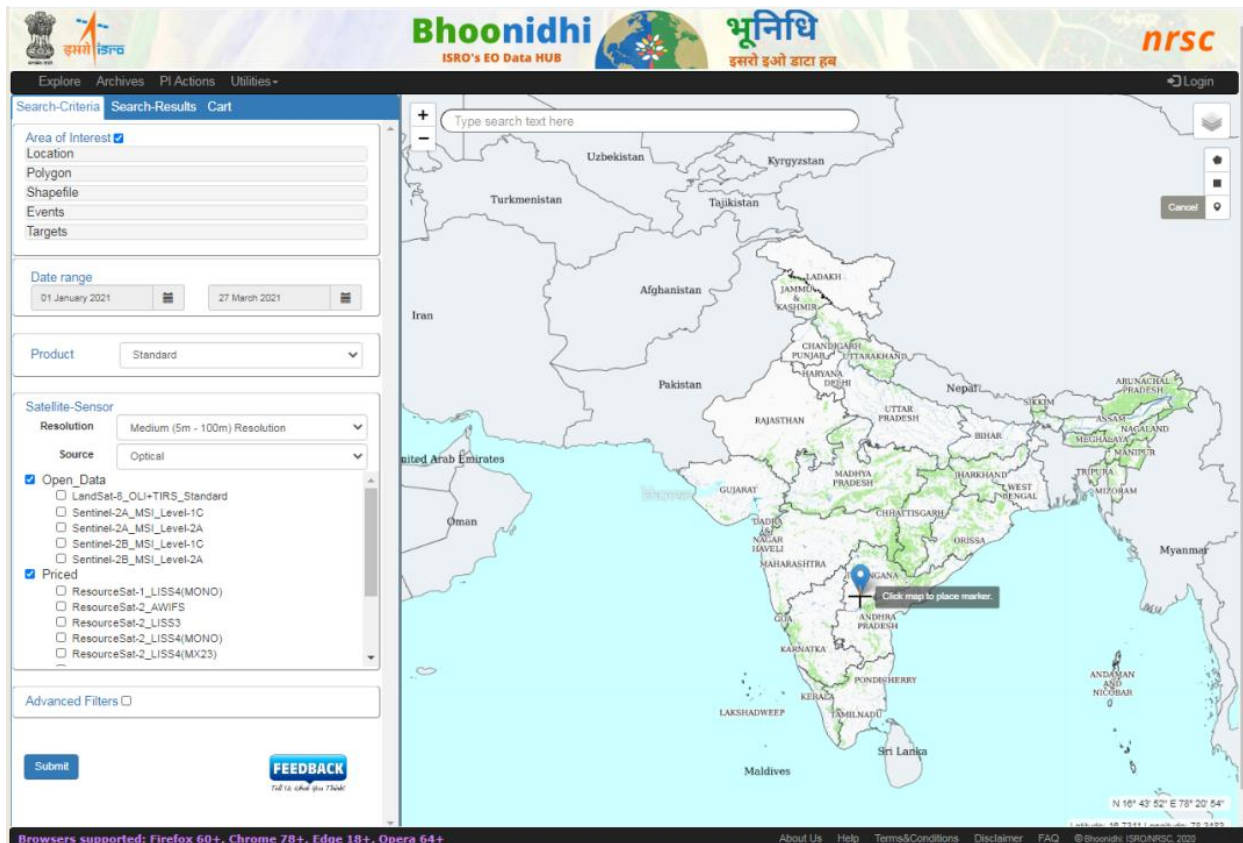
- **Draw Rectangle:** Users can select the draw rectangle option and drag the mouse on the appropriate location on the map to draw a rectangular AOI. As soon as rectangle is drawn, data search is triggered to fetch the datasets intersecting the AOI.

Users can draw a maximum rectangular AOI of 8 degrees by 8 degrees.



Window 11: Draw Rectangle

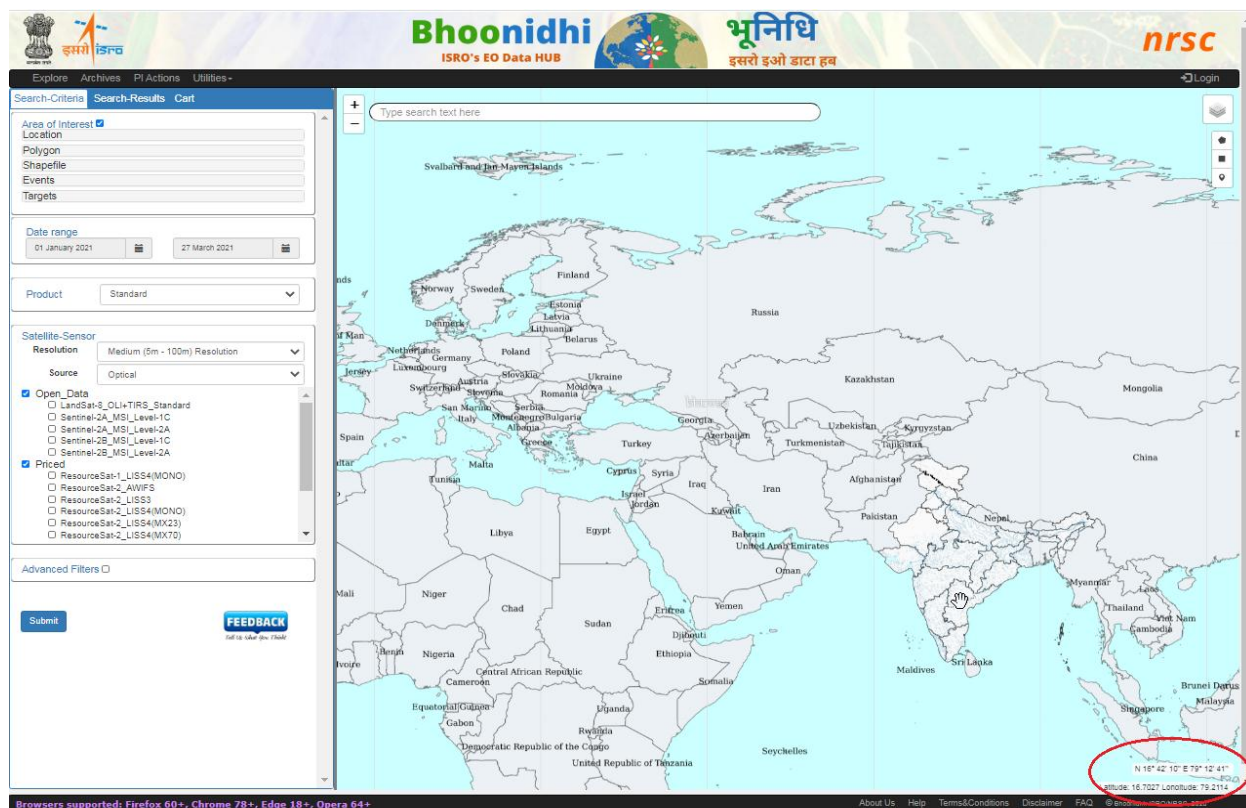
- Draw Marker:** Users can select the draw marker option and drop the marker at the appropriate location on the map. As soon as marker is drawn, data search is triggered to fetch the datasets intersecting the marker location.



Window 12: Draw Marker

3.3 Latitude-Longitude Display Tool

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.



Window 13 : Latitude Longitude Display Tool

3.4 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.

The screenshot shows the Bhoonidhi ISRO's EO Data Hub interface. At the top, there are logos for ISRO, Bhoonidhi, and nrsc. The main navigation bar includes 'Explore', 'Archives', 'PI Actions', and 'Utilities'. Below this is a search bar with a red circle around the search icon. The sidebar on the left contains several filter sections: 'Area of Interest' (Location, Polygon, Shapefile, Events, Targets), 'Date range' (01 January 2021 to 27 March 2021), 'Product' (Standard), 'Satellite-Sensor' (Resolution: Medium (5m - 100m), Source: Optical), 'Open_Data' (LandSat-8_OLI+TIRS_Standard, Sentinel-2A_MS_Level-1C, Sentinel-2A_MS_Level-2A, Sentinel-2B_MS_Level-1C, Sentinel-2B_MS_Level-2A), 'Priced' (ResourceSat-1_LISS4(MONO), ResourceSat-2_AWIFS, ResourceSat-2_LISS3, ResourceSat-2_LISS4(MONO), ResourceSat-2_LISS4(MX23), ResourceSat-2_LISS4(MX72)), and 'Advanced Filters'. The main map area shows a satellite image of India with a 'Zoom Tool' label. The footer includes browser support information (Firefox 60+, Chrome 78+, Edge 18+, Opera 64+) and navigation links (About Us, Help, Terms&Conditions, Disclaimer, FAQ, © Bhoonidhi- ISRO/nrsc, 2022).

Window 14: Zoom Tool

4 PRODUCT DOWNLOAD

The products are either available directly for download or with delayed download. For every option the user is informed. The products are to be first added to the CART. Once the selections in the CART are confirmed, the products can be downloaded online by the user.

Always the product will not be available for direct download. Some products will be copied from the production archive for the online download. The automatic workflow takes care of making the product available for online download but with a slight delay. The user is intimated once the products are made available for online download through email and SMS. Then the download link also to be enabled. The user can download the product from the CART.

4.1 Rules for Download

- Once a product confirmed in the CART and is available for online download, user has to download the product within 'N' days else the product is marked as INVALIDATED and it cannot be downloaded then as it is flushed.

- Selected products are to be added to the CART and only after CART confirmation products can be downloaded.
- On a given day only 'N' products can be downloaded. But the selections in the CART are stored which can be anytime retrieved and downloaded till the product availability time range is valid.

4.2 CART Processing

The products are to be added to the cart for download. If the product is readily available for online download, the download option in the CART will be enabled else it will be disabled. Once the product is available for online download, intimation will be sent to the user via email and SMS and then the download link also will be enabled in the CART.

Following are the assumption and conditions while handling CART:

- Any number of products can be added in the CART but Only MAX "N" items can be added to the CART for a given day
- Once the product is sent to the production chain for making it available for online download, it cannot be deleted from CART
- Products will be available in the CART only for fixed "N" days for online download.
- DOWNLOAD option is available only once the product is available for online download.

Following are the operations available at CART:

4.2.1 CART Option1: Add to CART

- If not logged in , ask for login with registered user Id
- If not registered, alert to register with registration option available.

The screenshot displays the Bhoonidhi ISRO's EO Data Hub interface. At the top, there are logos for ISRO, Bhoonidhi (ISRO's EO Data HUB), and nrscc. Below the logos, there are navigation tabs: Explore, Archives, PI Actions, and Utilities. A search bar is present with the text "Type search text here".

The left sidebar contains a "Search-Criteria" section with "Search-Results" and "Cart" tabs. Under "Search-Results", there is a "Footprints" section with a button "Add these products to Cart". Below this, "Search Details" are shown: Search: Landsat-8_OLI_TIRS_Standard, Date Range: 01 January 2021 to 27 March 2021, AOI Type: polygon User's AOI is represented in red, and Search ID (SID): 20210327_00000482. A "Show 50" dropdown and a search input field are also visible.

The main area shows a satellite footprint map of the Indian subcontinent. A red polygon represents the user's AOI, and several yellow rectangles represent satellite footprints. A red arrow points to the "Add to Cart" button in the sidebar.

At the bottom, there is a "Welcome TEST" message and a footer with links for About Us, Help, Terms&Conditions, Disclaimer, and FAQ, along with the copyright notice © Bhoonidhi | ISRO/nrscc, 2020. The current location is Latitude: 13.6569 Longitude: 80.0922.

Window 15 : Add to Cart

4.2.2 CART Option2: View in CART

The screenshot displays the 'Cart' tab of the ISRO EO Data Hub interface. The interface includes a navigation bar with 'Archives', 'Explore', and 'Utilities' options. Below this, there are tabs for 'Search-Criteria', 'Search-Results', and 'Cart'. The main content area shows a list of satellite products. Each product entry consists of a thumbnail image, a set of metadata, and a vertical toolbar with four icons: a download arrow, an information 'i' icon, a location pin icon, and a shopping cart icon. A green arrow points from a callout box labeled 'Available for download' to the download icon of the first product in the list.

| Thumbnail | Satellite | Scene | Date | Cloud | SID | Download Icon | Info Icon | Location Icon | Cart Icon |
|-----------|------------------|----------------|------------------|---------------|--------------------------------|------------------------|-----------|---------------|-----------|
| | Sat: L8 Sen: OLI | Scene: 130_046 | Dop: 25-JAN-2020 | Cloud: 3.75% | SID: 202001D08XZF72FM000000325 | Available for download | | | |
| | Sat: L8 Sen: OLI | Scene: 130_047 | Dop: 25-JAN-2020 | Cloud: 1.22% | SID: 202001D08XZF72FM000000325 | | | | |
| | Sat: L8 Sen: OLI | Scene: 130_048 | Dop: 25-JAN-2020 | Cloud: 3.60% | SID: 202001D08XZF72FM000000325 | | | | |
| | Sat: L8 Sen: OLI | Scene: 130_051 | Dop: 25-JAN-2020 | Cloud: 16.13% | SID: 202001D08XZF72FM000000325 | | | | |
| | Sat: L8 Sen: OLI | Scene: 130_052 | Dop: 25-JAN-2020 | Cloud: 12.74% | SID: 202001D08XZF72FM000000325 | | | | |
| | Sat: L8 Sen: OLI | Scene: 130_053 | Dop: 25-JAN-2020 | Cloud: 6.22% | SID: 202001D08XZF72FM000000325 | | | | |
| | Sat: L8 Sen: OLI | Scene: 130_054 | Dop: 25-JAN-2020 | Cloud: 0.64% | SID: 202001D08XZF72FM000000325 | | | | |
| | Sat: L8 Sen: OLI | Scene: 130_055 | Dop: 25-JAN-2020 | Cloud: 0.04% | SID: 202001D08XZF72FM000000325 | | | | |
| | Sat: L8 Sen: OLI | Scene: 135_041 | Dop: 28-JAN-2020 | Cloud: 14.35% | SID: 2020011J2ZMB80KJ000000308 | | | | |

Window 16 : View in Cart/ Products available for download

- Display the list of items in cart for today by default

- Option to select CART date range and then see the items date-wise.
- Color coded display of items
 - Not available for download yet






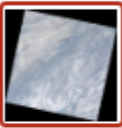
























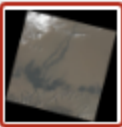




Archives Explore Utilities ▾

Search-Criteria Search-Results Cart

Cart Date 13 February 2020

Show 20 ▾
Search:

Product

| | | |
|---|---|---|
|  | Sat: L8 Sen: OLI Scene: 155_036 Dop: 01-AUG-2019 Cloud: 0.00% SID: 202001WNSTYSSNCH000000323 |     |
|  | Sat: L8 Sen: OLI Scene: 155_037 Dop: 01-AUG-2019 Cloud: 0.02% SID: 202001WNSTYSSNCH000000323 |     |
|  | Sat: L8 Sen: OLI Scene: 155_038 Dop: 01-AUG-2019 Cloud: 0.00% SID: 202001WNSTYSSNCH000000323 |     |
|  | Sat: L8 Sen: OLI Scene: 155_039 Dop: 01-AUG-2019 Cloud: 0.00% SID: 202001WNSTYSSNCH000000323 |     |
|  | Sat: L8 Sen: OLI Scene: 155_040 Dop: 01-AUG-2019 Cloud: 0.25% SID: 202001WNSTYSSNCH000000323 |     |
|  | Sat: L8 Sen: OLI Scene: 155_041 Dop: 01-AUG-2019 Cloud: 7.08% SID: 202001WNSTYSSNCH000000323 |     |
|  | Sat: L8 Sen: OLI Scene: 146_034 Dop: 02-AUG-2019 Cloud: 17.07% SID: 202001WNSTYSSNCH000000323 |     |

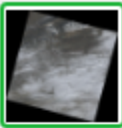




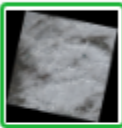




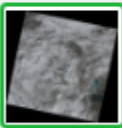




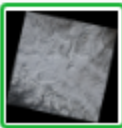




Not Available
for download

Window 17 : Products not available for download

- Available for download
- Already downloaded – still can be downloaded if MAX_CART_VALIDITY is still valid.
- INVALIDATED - MAX_CART_VALIDITY is not valid and hence the product cannot be downloaded.
- For selected product, details about the product are also shown

4.2.3 CART Option3: Delete from CART

Delete from CART is available only before the CART is confirmed. Once confirmed CART values cannot be deleted.

| | | |
|---|--|--|
|  | Sat: L8 Sen: OLI Scene: 143_035 Dop: 20-JAN-2020 Cloud: 7.87% SID: 202001H8CLRJ1NN1000000362 |     |
|  | Sat: L8 Sen: OLI Scene: 143_037 Dop: 20-JAN-2020 Cloud: 4.25% SID: 202001H8CLRJ1NN1000000362 |     |
|  | Sat: L8 Sen: OLI Scene: 143_038 Dop: 20-JAN-2020 Cloud: 6.22% SID: 202001H8CLRJ1NN1000000362 |     |
|  | Sat: L8 Sen: OLI Scene: 143_039 Dop: 20-JAN-2020 Cloud: 0.74% SID: 202001H8CLRJ1NN1000000362 |     |

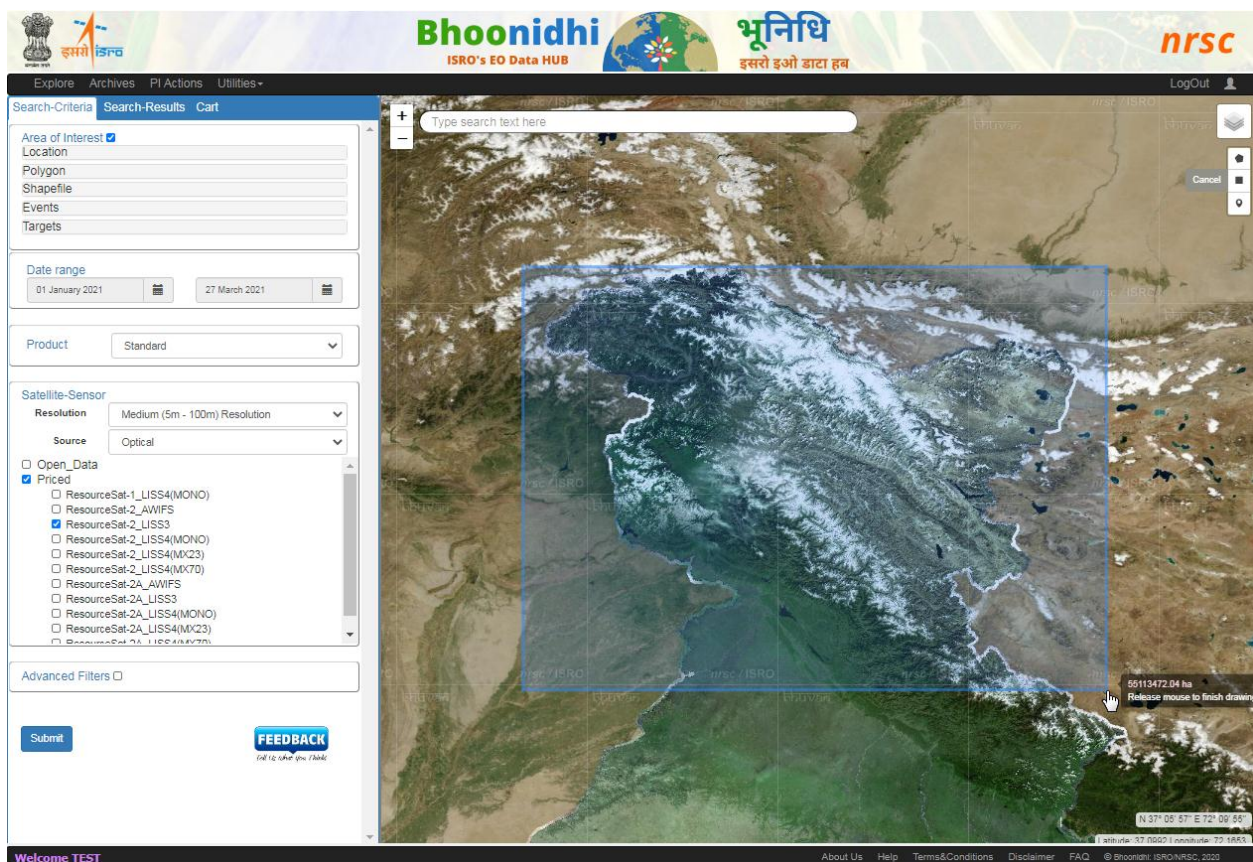
Window 18 : Delete from Cart

Delete from cart

5 Priced Data Ordering

Priced data search criteria

1. Check Area of interest by mentioning either location/polygon/shapefile/Free draw on map
2. Specify date range
3. Select Product type
4. Choose Resolution and Source
5. Click the check box Priced
6. Select the Satellite, Sensor
7. Select Advanced Filters if required
8. Click Submit



Window 19: Priced data search criteria

Priced data search results & Add to Cart

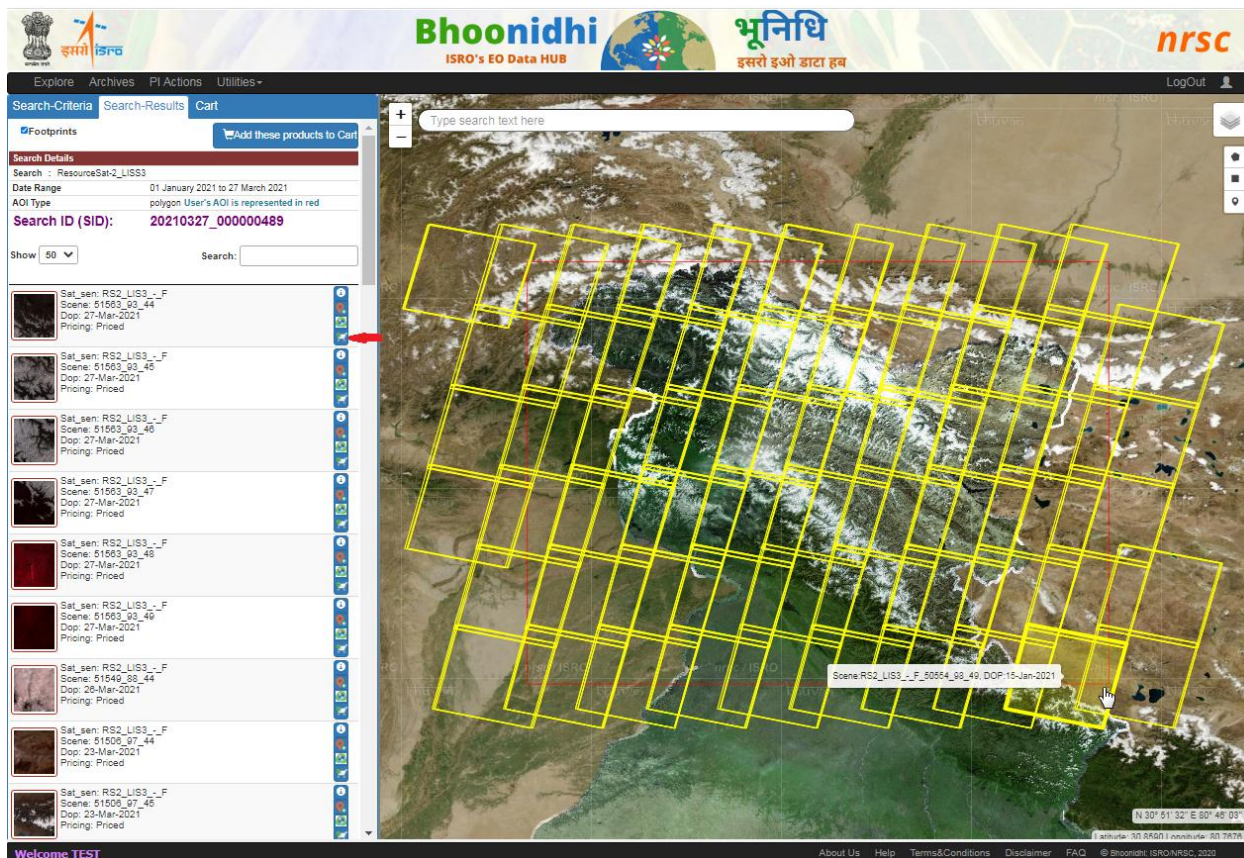
This tab displays all the scenes which are found for the search filters provided by user under “Search-Criteria” tab. A Search ID is generated as per the search inputs. The fetched scenes are displayed on the map and the AOI is shown in red color on the map. Against each scene there are following options available:

- View and Download Metadata
- Image Extents
- Publish on Map
- Add to cart

The “Search” 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” check box can be used to either show or remove footprints of the selected products from on the map.

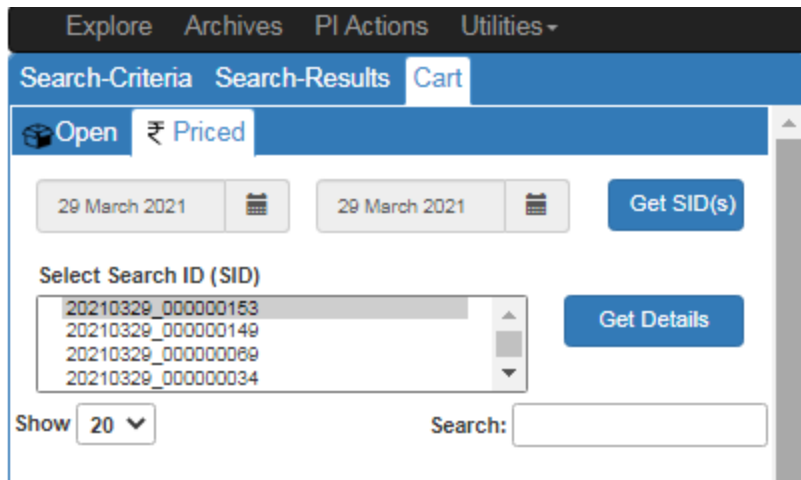
9. In order to browse through the products catalogue no login is required. But open data product downloading / ordering of priced data can be done only by registered users after login. Option for registration by new user is also available.
10. Pagination is enabled for 50 products (out of 500) at one fetch.
11. Each item can be added to the CART but clicking Add to Cart option in this view.
12. If you want to add all the 50 items to cart click ‘Add these products to cart’ at the bottom of the window.
13. You will be prompted to enter the login credentials.
14. Please note that to order the data, an Account is to be
15. After login, feedback is to be selected.



Window 20: Priced data search results & Add to Cart

Select Product Specification & Generate Proforma Invoice

- 16. After login, user has to add the products to the cart.
- 17. Under cart two tabs are available a) Open b) Priced
- 18. For priced products priced cart is to be selected.
- 19. The list of SearchIDs will be shown to the user. Select the latest search Id and click and click Get Details button.
- 20. The list of scenes added to the cart will be shown to the user.



Window 21: Select Cart->Priced

21. Scroll to the bottom of the window and click Select Product Specification.



Window 22: Select Product Specification

- 22. Select Product details; check the cost, number of scenes, Add Product Specification.
- 23. Enter user reference, select date, click Generate Proforma Invoice button to generate PI.
- 24. Please make a note of the PI number for your reference.

Explore Archives PI Actions Utilities - LogOut

Search-Criteria Search-Results Cart

Sat_sen: RS2_LIS3_-_F
Scene: 51350_90_45
Dop: 12-Mar-2021
SID: 20210327_000000489

Sat_sen: RS2_LIS3_-_F
Scene: 51350_90_46
Dop: 12-Mar-2021
SID: 20210327_000000489

Sat_sen: RS2_LIS3_-_F
Scene: 51350_90_47
Dop: 12-Mar-2021
SID: 20210327_000000489

Sat_sen: RS2_LIS3_-_F
Scene: 51350_90_48
Dop: 12-Mar-2021
SID: 20210327_000000489

Sat_sen: RS2_LIS3_-_F
Scene: 51350_90_49
Dop: 12-Mar-2021
SID: 20210327_000000489

Sat_sen: RS2_LIS3_-_F
Scene: 51364_95_44
Dop: 13-Mar-2021
SID: 20210327_000000489

Sat_sen: RS2_LIS3_-_F
Scene: 51364_95_45
Dop: 13-Mar-2021
SID: 20210327_000000489

Sat_sen: RS2_LIS3_-_F
Scene: 51364_95_46
Dop: 13-Mar-2021
SID: 20210327_000000489

Sat_sen: RS2_LIS3_-_F
Scene: 51364_95_47
Dop: 13-Mar-2021
SID: 20210327_000000489

Sat_sen: RS2_LIS3_-_F
Scene: 51364_95_48
Dop: 13-Mar-2021
SID: 20210327_000000489

Sat_sen: RS2_LIS3_-_F
Scene: 51364_95_49
Dop: 13-Mar-2021
SID: 20210327_000000489

Product Details for RS2_LIS3_-_F Pricing Indian

Product Type: ST_Standard | Dispatch Mode: FTP

Processing Level: 1_Radiometric | 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: O_Orthokit | Quality: Quality Check

Cost

Cost type: scene (Rs)

| | | | |
|------------------|------|--------------------|-----------------|
| No of scenes | 50 | Unit Rate | 980.00 |
| Priority Charges | 0.00 | IGST / CGST / SGST | 0.0 / 0.0 / 0.0 |
| Discounts | 0.00 | Final | 49000.00 |

[Add Product Specifications](#)

Selected Products

| Satellite-sensor | Product code | Dispatch mode | Datum | Product res | Priority | Copies | Quality | No of scenes | Cost | Other Params | Action |
|------------------|--------------|---------------|--------|-------------|----------|--------|---------|--------------|----------|--------------|--------|
| RS2_LIS3_-_F | ST000010D | FTP | WGS 84 | 24.0 | Normal | 1 | NA | 50 | 49000.00 | - | |

Total Cost : Rs 49000

User Ref: demo

Ref Date: 02 March 2021

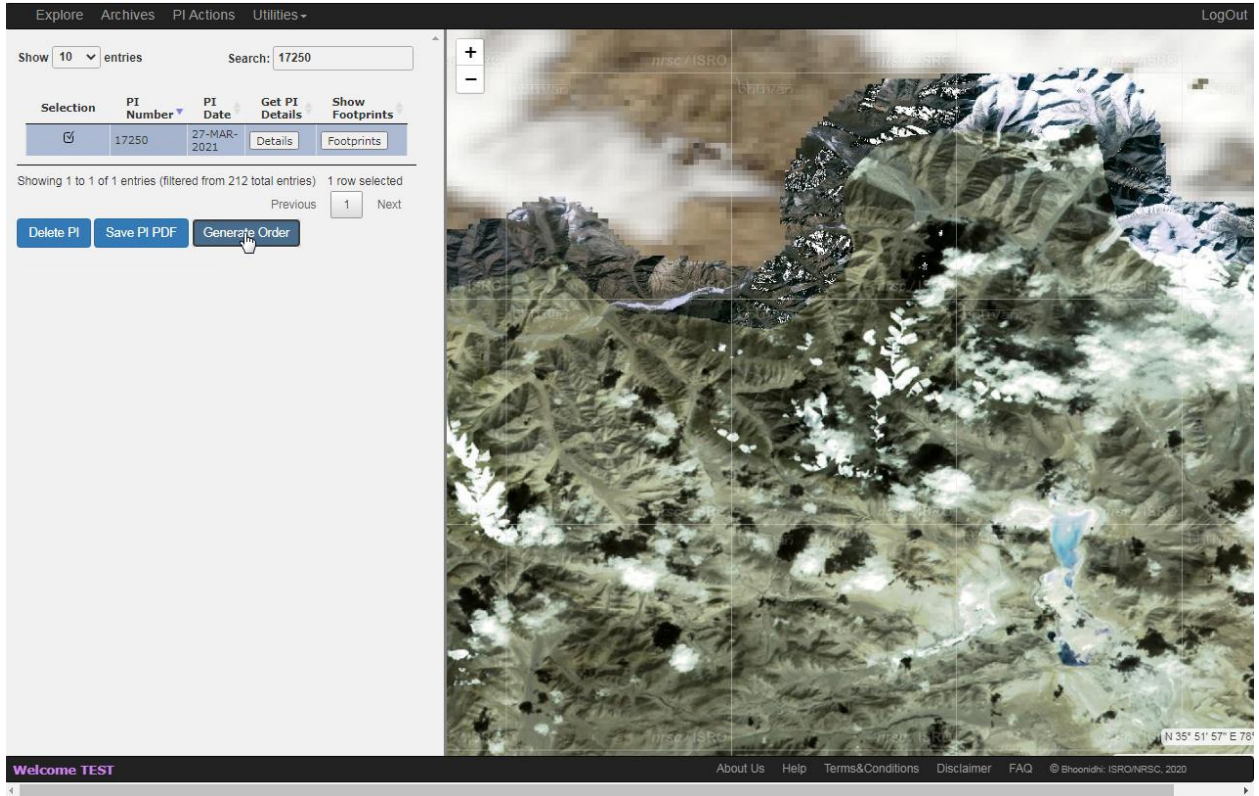
[Generate Pro-forma Invoice \(PI\)](#)

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Window 23: Select Product Specification

Generate Order

25. To generate order go to PI Actions tab, select your PI number and Click Generate Order button.
26. The shipping address details will be shown to you. Check the address and make changes if required.



Window 24: Generate Order

Confirm Order

27. Click Confirm button to confirm the shipping address, then order number will be generated.

Explore Archives PI Actions Utilities - LogOut

Show **10** entries Search: 17250

| Selection | PI Number | PI Date | Get PI Details | Show Footprints |
|-------------------------------------|-----------|-------------|----------------|-----------------|
| <input checked="" type="checkbox"/> | 17250 | 27-MAR-2021 | Details | Footprints |

Showing 1 to 1 of 1 entries (filtered from 212 total entries) 1 row selected
Previous **1** Next

Delete PI Save PI PDF Generate Order

Account Number 0100700

Shipping Address

Full Name: Designation:

Department: Company Name:

Address Line 1: Address Line 2:

City: State:

Country: Zip Code:

Email: GSTIN:

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Window 25: Confirm Order

6 Search Id /Order Status Monitoring

6.1 Search Id Monitor

To monitor the Search Ids select a date range and click Get SID button. The list of SIDs will be displayed. Select a Search Id and click Submit button to view the details.

29 March 2021

📅

30 March 2021

📅

Get SID

20210329_00000204
▼

Submit

Search Details

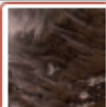
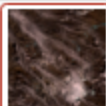
Search Criteria : date

Search : ResourceSat-2_LISS3

Date Range : 27-02-2021 to 29-03-2021

Show 20 ▼

Search:

| | | |
|---|--|---|
|  | Sat: RS2 Sen: LIS3 Scene: 51591_103_43 Dop: 29-Mar-2021 Pricing: Priced | i 📍 🌐 |
|  | Sat: RS2 Sen: LIS3 Scene: 51591_103_44 Dop: 29-Mar-2021 Pricing: Priced | i 📍 🌐 |

Showing 1 to 2 of 2 entries
Previous

1

Next

Window 26: Search Id Monitor

6.2 Order Status Monitoring

To monitor the status of the Orders placed, select a date range and click Get Orders button. The list of Order numbers will be displayed. Select an Order Number and click Submit button to view the order and status of the order.

29 March 2021

📅

30 March 2021

📅

Get Orders

16951

▼

Submit

Order Status

Cancelled

Order Confirmed

Pre Production

In Production

Ready for Delivery

Order Delivered

Show 20 ▼

Search:

| | SAT | SEN | DOP | Status | Orbit | Product Code | Priority |
|---|-----|------|------------|---------------|-------|--------------|----------|
| 1 | R2A | AWIF | 2021-03-28 | UNDER PROCESS | 22335 | ST00001OD | 6 |

Showing 1 to 1 of 1 entries
Previous 1 Next

Window 27: Order Status Monitor

7 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.

Window 28 : Feedback Form

8 GETTING STARTED

This section provides a general walkthrough of the system from initiation through exit. The logical arrangement of the information shall enable users to understand the sequence and flow of the system.

8.1 Data Availability

This is the first page displayed as you open the URL. This is the Data Availability link. This page shows the list of satellites, sensors and their available dates. This does not require login.

The legend shows the color code. Each color depicts the number of coverages on the map for the selected satellite sensor and date range. (Refer Window 1)

8.2 Search

This is Search function where you can search for the products. The search option does not require login. The different kinds of search available are

1. Resolution based (Standard Product)
 - a. Very High (0m-1m)
 - b. High (1m-5m)
 - c. Medium (5m-25m)
 - d. Low (25m-100m)
 - e. Coarse (100m-1000m)
2. Smart search / Text based search
3. Event based for selected satellite, sensor and date range.
4. Satellite based
5. AOI based
 - a. Specify Location

Location

| | |
|------------|---|
| Place Name | <input type="text"/> |
| Latitude | <input type="text" value="eg 17.75, -18.98"/> |
| Longitude | <input type="text" value="eg 78.75, -78.98"/> |
| Area(km) | <input type="text" value="10"/> |

Window 29 : Specify AOI :Location

- b. Specify Polygon

Do you want to specify AOI

Location

Polygon

TopLeft Latitude 37

TopLeft Longitude 69

BotRight latitude 30

BotRight longitude 77

Shapefile

Submit

Window 30 : Specify AOI :Polygon

c. Specify Shapefile

Shapefile

Select

Submit

Window 31 : Specify AOI: Shapefile

8.3 Logging in

A user ID and password is required to download a product from Bhoonidhi web application. Existing users of User Order Processing System (UOPS) can continue to use same login. New users can use the New User link to get registered.



The image shows a login window titled "Login". It features a blue background with an illustration of two people (a man and a woman) looking at each other, a key icon, and an hourglass. Below the illustration are two input fields: "Username" with the placeholder text "Enter Username" and "Password" with the placeholder text "Enter Password". At the bottom, there is a blue "Login" button, a "New User" link, and a "Forgot Password" link.

Window 32 : Login

8.4 New User Registration

BHOONIDHI REGISTRATION FORM

| Personal Info | Address | Contact Details | Submit Registration |
|---------------|---|-----------------|---------------------|
| Salutation * | <input type="text" value="Mr"/> | | |
| Full name * | <input type="text" value="full name"/> | | |
| Gender | <input type="text" value="male"/> | | |
| Login Id * | <input type="text" value="naseeb"/> | | |
| password * | <input type="password" value="....."/> | | |
| User Type * | <input type="text" value="Central Government"/> | | |

Window 33 a) : Personal Info

| Personal Info | Address | Contact Details | Submit Registration |
|---------------------------|--|-----------------|---------------------|
| Designation | <input type="text" value="designation"/> | | |
| Department | <input type="text" value="department"/> | | |
| Company name (FULL) * | <input type="text" value="companyname"/> | | |
| Company name (ACCRONYM) * | <input type="text" value="companyname acronym"/> | | |
| country * | <input type="text" value="Afghanistan"/> | | |
| Address Line (1) * | <input type="text" value="addressline1"/> | | |
| Address Line (2) * | <input type="text" value="addressline2"/> | | |
| State * | <input type="text" value="state"/> | | |
| City * | <input type="text" value="city"/> | | |
| pin code * | <input type="text" value="pincode"/> | | |

Window 33 b) : Personal Info

| Personal Info | Address | Contact Details | Submit Registration |
|--|---------------------------------------|-----------------|---------------------|
| Phone * (Countrycode-std-Landline) | <input type="text" value="phone"/> | | |
| Additional Phone (Countrycode-std-Landline) | <input type="text" value="addphone"/> | | |
| Mobile Number * | <input type="text" value="mobile"/> | | |
| Email * | <input type="text" value="email"/> | | |
| Fax | <input type="text" value="fax"/> | | |

Window 33 c) : Contact Details

Personal Info Address Contact Details Submit Registration

Captcha text 

Window 33 d): Submit Registration

8.5 Forgot Password

For retrieving the password, click Forgot Password link. Enter User Id, Email and click Submit. The new password will be sent to your email id.

FORGOT PASSWORD

Login ID *

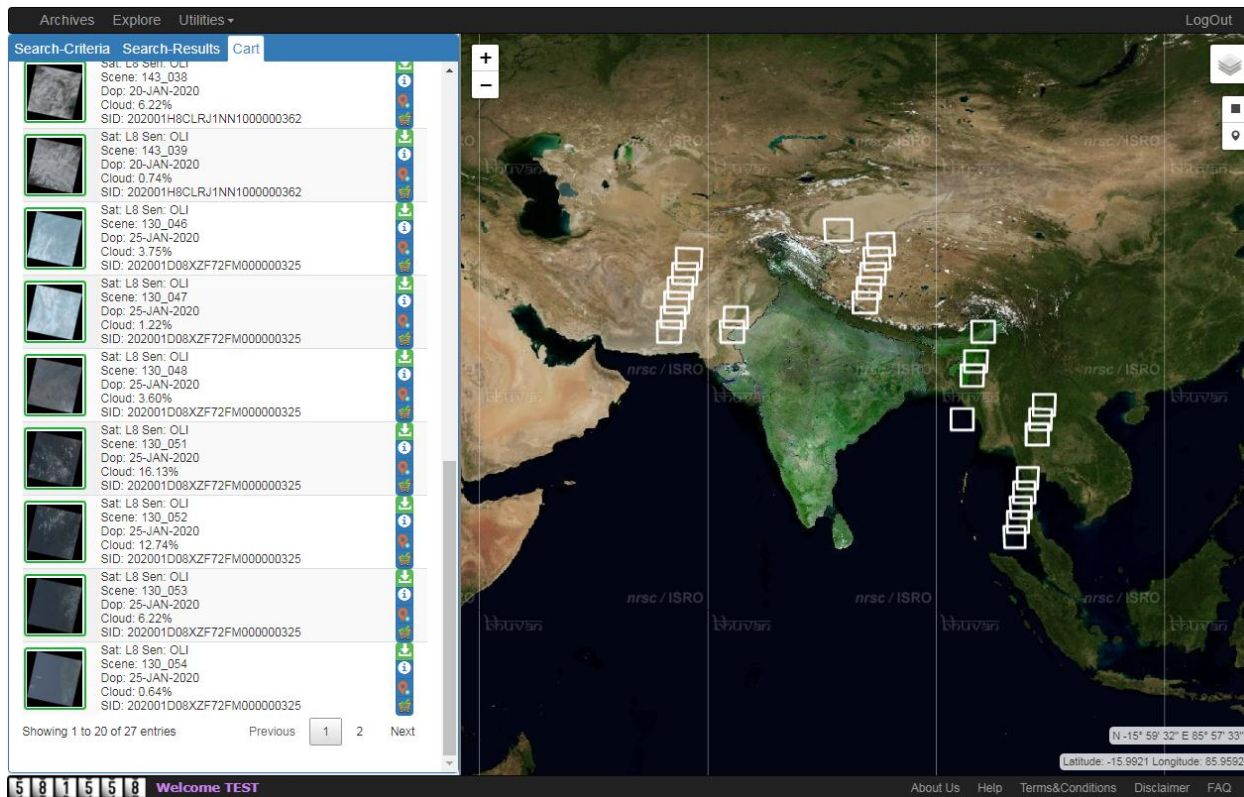
Registered Email ID *

 [Reset](#)

Window 34 : Forgot Password





8.6 Product Download

Based on the search inputs the list of products is shown. Per page 5 records are shown. More records can be shown by clicking next page.



Window 35: Product Download

Description of icons against each product

-  Meta data
-  Foot print on map
-  Publish image on map
-  Add to Cart

8.7 Cart

After adding products to the cart to the cart the items in the cart can be viewed by clicking the Cart. The products can be downloaded from the cart as well.

To download the product, click **Confirm** button. A feedback form is displayed. After submitting the feedback an alert message is shown.













8.8 System Menu

Feedback

This is a feedback form. Please give the details of your Name and Email and submit the feedback.

Bhoonidhi Survey

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

| | |
|--|---|
| <p><input type="checkbox"/> Environment Security and Bio-Resources</p> <p> Forest cover and type mapping Desertification status mapping Coastal, mangroves, Coral Related Snow and glacier studies Wetland inventory and conservation plans</p> <p><input type="checkbox"/> Cartography</p> <p> Satellite based topo-map updation Digital Elevation Model Large scale mapping Digital Elevation Model Cadastral level mapping</p> <p><input type="checkbox"/> Geology and Mineral Resources</p> <p> Landslide hazard zonation Mineral /oil exploration, mining areas Seismo-tectonic studies</p> <p><input type="checkbox"/> Ocean and Meteorology</p> <p> Ocean status forecast Storm surge modelling Tropical cyclone and mesoscale studies Ocean primary productivity Extended range monsoon prediction</p> <p><input type="checkbox"/> Rural Development</p> <p> Drinking Water mission Wasteland mapping/updates watershed development and monitoring Land records modernization plan</p> <p><input type="checkbox"/> Urban Development</p> <p> Urban sprawl mapping of major cities Master / structure plans Comprehensive development plans of selectec Base map generation for towns National urban information system</p> | <p><input type="checkbox"/> Water Security</p> <p> Irrigation infrastructure assessment Water resource information system Snow melt run-off estimation Reservoir capacity evaluation Site selection for hydro-power</p> <p><input type="checkbox"/> Disaster Management Support</p> <p> Floods, cyclone, drought, landslide, earthquake Early warning systems and decision support to</p> <p><input type="checkbox"/> Climate Change Studies</p> <p> Mapping the indications, monitoring the agents Characterization of climate variables Methane emission and Timberline study Atmosphere studies</p> <p><input type="checkbox"/> Image processing Algorithms</p> <p> Data mining algorithms Time series analysis Radiometric anomaly characterization Geometric Data quality characterization Image Enhancements</p> <p><input type="checkbox"/> Interested in collaborative project</p> <p> Multi-spectral data compression Spatial database management and data mining Design and development of Calibration site (op Automated Data Quality Assessment technique Information fusion methods for multi-sensor da</p> <p><input type="checkbox"/> Food Security</p> <p> Saline/sodic soils mapping Crop production Monitoring and forecast Agro-Met services surveillance Horticulture development</p> |
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Window 36 : Feedback Form

8.9 Logout

Click on Logout and close the browser to logout of the system.