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Golden Jubilee
1974 - 2024

bhuvan nextgen
Indian Geo-Platform of ISRO

भुवन अगलीपीढ़ी
Bhuvan *NextGen*
https://bhuvanmaps.nrsc.gov.in

Bhuvan NextGen Landing Page

Bhuvan – 15 Years of Journey

Bhuvan, which started in 2009 with a humble beginning as a visualization platform showcasing IRS imagery, has emerged as a national g-Governance platform supporting 40 ministries and state departments.

As of today, Bhuvan hosts more than 190 geospatial applications, 75 mobile apps, 60 TB of satellite data, thematic data as OGC web services, over 12 crore crowdsourced PoIs, and serves 1.5 lakh users daily.
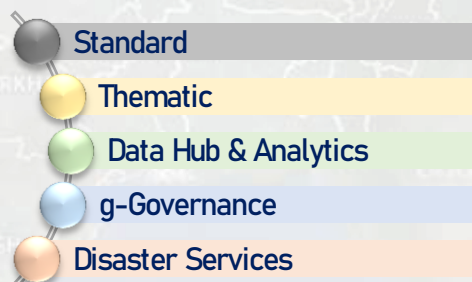
New Beginning in transforming Bhuvan

With the advent of geospatial technologies and data availability, user demands have increased significantly. As a pivotal geospatial hub committed to fulfilling national responsibilities, Bhuvan is revamped with an enhanced version with a host of new features.

Bhuvan NextGen Inception

Bhuvan NextGen is a cutting-edge geoportal that seamlessly integrates a comprehensive suite of tools, data and services. Prioritizing user-centric design, it effectively meets the specific needs and preferences of its users. This unified platform offers rich visualizations of satellite, thematic data, analytical tools, along with access to value-added services.
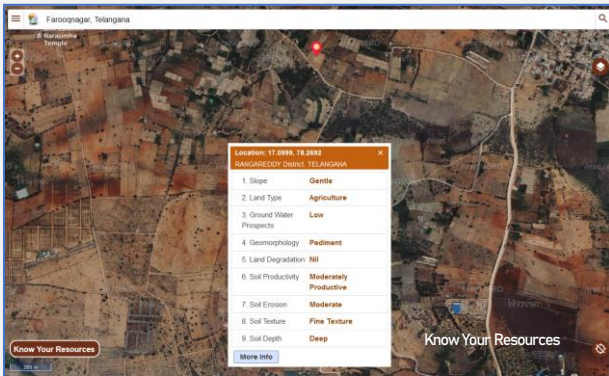
5 modes for User Centric Experience

- Standard
- Thematic
- Data Hub & Analytics
- g-Governance
- Disaster Services

Major Highlights

- Enriched user interface with latest libraries.
- Improved Search for PoI, Thematic Data.
- Voice enabled search supporting 4 languages.
- Submeter Satellite data for entire India
- Seamless radiometry for varied resolutions.
- Enriched thematic mode with statistics, trends.
- Natural resources information for 10 themes.
- Vector tiles for thematic data filtering.
- AI/ML driven value added services.
- Immersive 3D view with fly-through features.
- Gateway to navigate all Bhuvan applications.
- Free Data Downloads as per NGP 2022.

One stop versatile platform for geospatial queries and advisory

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Standard Mode

Know Your Resources

3D view

- Visualization of Base layers, Administrative boundaries, Infrastructure & PoI data.
- Enriched search, sub meter satellite data, layer selections, location based services, add layers.
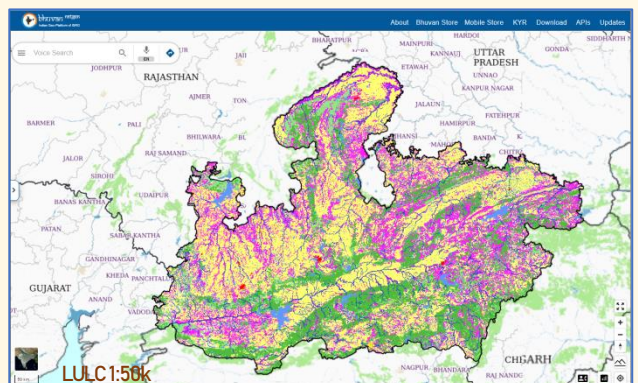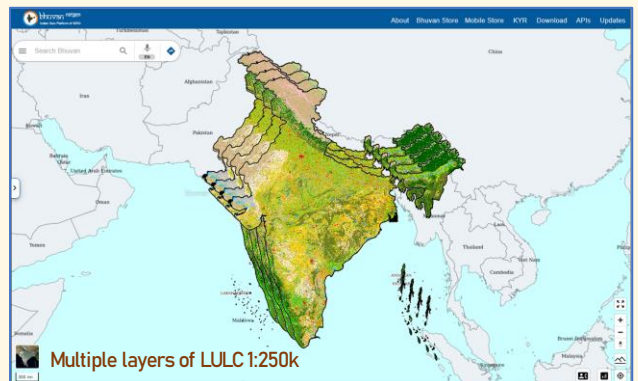- Target Users: General Public, Mobile Users.

Major Features:

- Natural Language Processing based search for PoI, Thematic Data, Web applications.
- Support for Voice search in 4 Languages – English, Hindi, Telugu , Tamil.
- Progressive Web App, Responsive across devices.
- Seamless radiometry Satellite Base Layer.
- Natural Resources information about 10 themes for searched location (Know Your Resources).
- Switch 2D to 3D for a more comprehensive view.
- Seamlessly toggle between different map views.
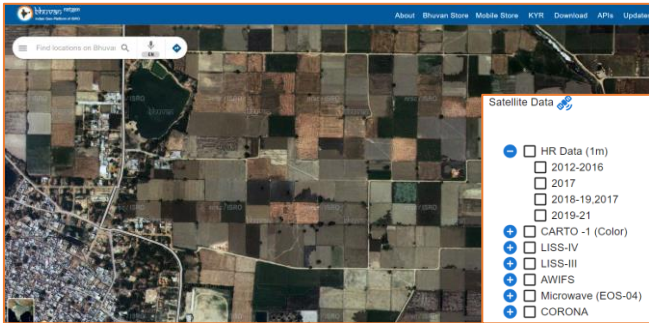- Effortlessly combine layers for a detailed analysis.

Thematic Services

- Visualisation, statistics, and download of various thematic datasets.
- Provides datasets prepared by NRSC and its partner institutes.
- Achieves key objective of NGP 2022.
- Target Users: RS and GIS enthusiasts, Planners, Administrators and Researchers.

Major Features:

- Explore 15 themes for detailed insights.
- Tools for comprehensive detailed analysis.
- Interactive views with step & swipe mode.
- Tabular, graphical representations of changes.
- Download LULC 1:10k, 1:50k, 1:250k data.
- All layers as OGC–compliant WMS services.
- Get detailed information on each map layer.
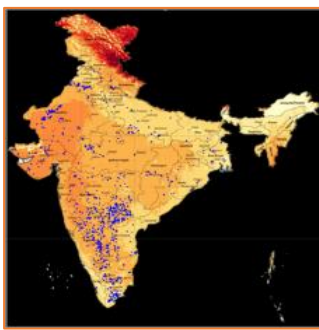- Dynamic styling using Mapbox vector tiles.

Multiple layers of LULC 1:250k

LULC 1:50k

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Data Hub & Analytics

Multi-sensor multi-temporal Satellite data

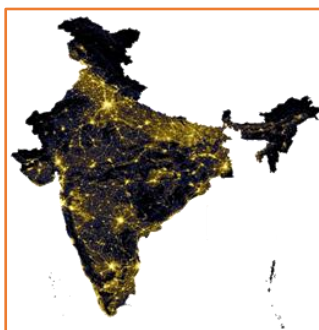Solar Farms

Night Time Lights

- Access multi-sensor, multi-temporal, multi-resolution satellite data at one place.
- Platform to disseminate various value added services generated.
- Target Users: Data science enthusiasts, application scientists, and administrators.

Major Features:

- Explore over 100+ IRS satellite mosaics for extensive country-wide data for visualization.
- Specialized value-added services like Night Time Lights (NTL), Agricultural Hotspots, Solar Farms, Trees Outside Forest.
- Time series visualization, image comparison and historic data analysis.
- Interactive visualization with powerful tools for filtering and swipe mode.
- On-demand APIs to seamlessly integrate satellite-derived products into your workflows.

g-Governance

- Bhuvan hosts more than 190 Geospatial applications for asset mapping, planning, monitoring, decision making.
- Gateway to all g-Governance applications, and Citizens to access public view of Applications.
- Target Users: Central Ministries, State Department officials and for Citizens.

Major Features:

- Geospatial applications segregated into 12 Sectors for easy navigation.
- Find applications using search feature – redirect to required governance application.
- Unified gateway for administrators, officials and citizens to know about flagship programs, get g-Governance support from ISRO.
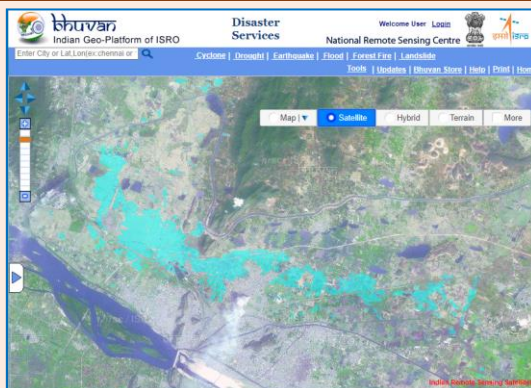

G.R.O.W. application with NITI Aayog

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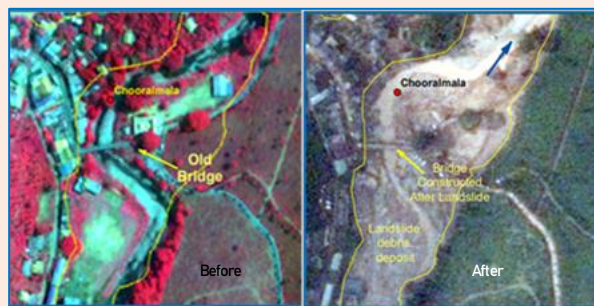
Disaster Services

- Disaster support services catered through Bhuvan.
- It covers Flood, Cyclone, Landslide, Earthquake, Forest fire and Drought.
- Target Users: Disaster Relief Authorities, Administrators, scientists and researchers.

Major Features:

- Get redirected to specialized disaster services portals for detailed information.
- Visualization of pre and post disasters with satellite datasets and other spatial data sets supporting disaster relief activities.
- Utilize 6+ specific services for disaster management.

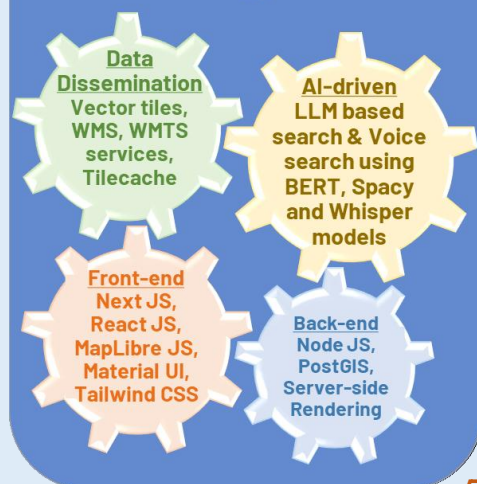
Vijayawada Flood Inundation (on 13th Sep 2024)

Chooramala, Wayanad, Kerala Landslide Inventory (on 04th July 2024)

Way Forward – Envisioning Self Reliant Spatial Platform

Bhuvan NextGen
Technology Stack

Data Dissemination Vector tiles, WMS, WMTS services, Tilecache

AI-driven LLM based search & Voice search using BERT, Spacy and Whisper models

Front-end Next JS, React JS, MapLibre JS, Material UI, Tailwind CSS

Back-end Node JS, PostGIS, Server-side Rendering

- ✓ Support to Digital India
- ✓ Open Data Ecosystem
- ✓ Bhuvan for Every Indian
- ✓ Socio–Economic Spatial Framework
- ✓ Developing Citizen Centric Applications
- ✓ Continuous update of Submetre Satellite Data
- ✓ Citizen Engagement – Mapathons and Hackathons
- ✓ Enhancing Collaboration with Ministries/Institutions
- ✓ Exploring Commercial Potential of Bhuvan
- ✓ Advanced AIML Based Solutions

Data Dissemination and Analytics Platform – Bhuvan

Contact Us:

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