NSDI Initiative – Policies and Data Standards

PS Acharya, CEO, NSDI
NRDMS-NSDI Division, DST, New Delhi

NeGD, DeitY organized Thematic Workshop on
"Use of GIS in Informed Planning And Decision Making“
Indian Habitat Centre, Lodi Road, New Delhi
29 March 2016

NSDI Vision and objectives

Vision

- National infrastructure for the availability of and access to organized spatial data
- Use of the infrastructure at Community, Local, State, Regional and National levels for sustainable development

Objectives

- Develop and maintain standard digital collection of data
- Develop common solutions for Discovery, Access and Use of spatial data in response to the needs of diverse user groups
- Increase the awareness & understanding of the vision, concepts and benefits of the NSDI

Current Problems

- Sheetwise storage of metadata as against feature data

- No service metadata accessible (e.g. WMS/ WFS etc.)

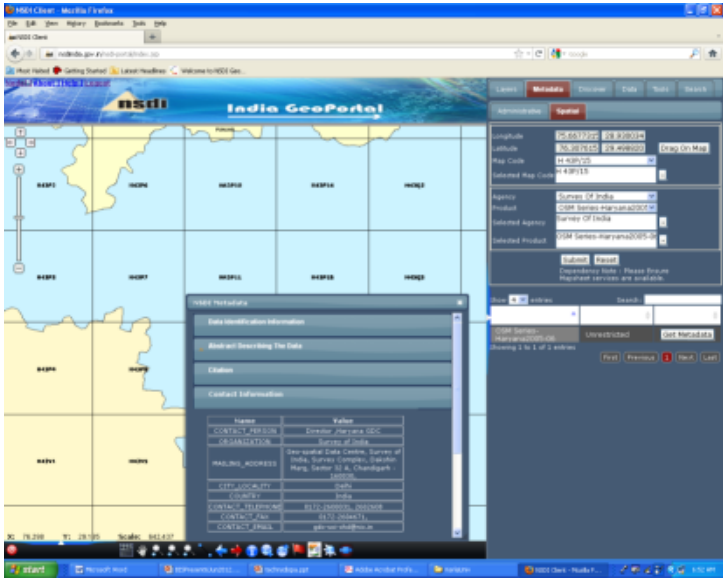
- Catalogue service unavailable

- Querying on visualisation/ web map service absent

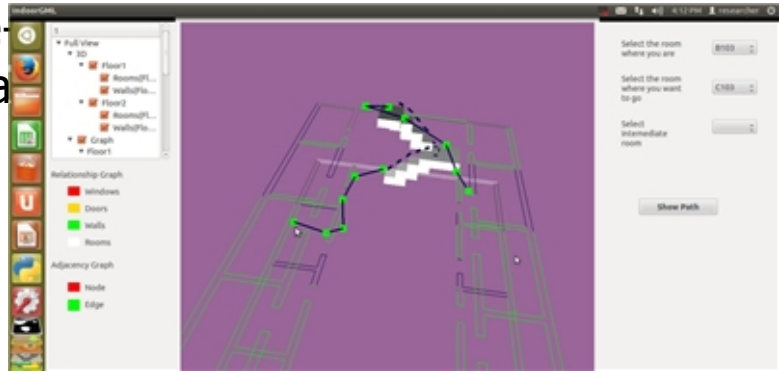
- Content standard for 'soil' is available or getting developed on other themes but not in a machine-readable standard form (GML Application schema

- Metadata not accessible in machine readable form (XML)

- Nodes for GIS Data Assets from providing agencies not operational



(metadata search display)



(Display of result of navigation query Using IndoorGML)

Recent Progress Outline as of March 2016

- National Geospatial Policy, National Survey Act, State SDI Policies, Empowered SOI Committee, Technical Committee on NATMO

- Co-branded BIS standards, Geology/ Forest/ Soil Data Specifications

- National Foundation Spatial Data WFS and 1:50K countrywide WMS through National Data Portal (data.gov.in)

- Admin. Boundary data harmonization Committee – SOI, Census, NRSC, NIC, MoSPI, HARSAC

- Smart City Data by NATMO as WMS/ WFS, Mahakashi Data (1:5K, 1:10K), CityGML/ IndoorGML

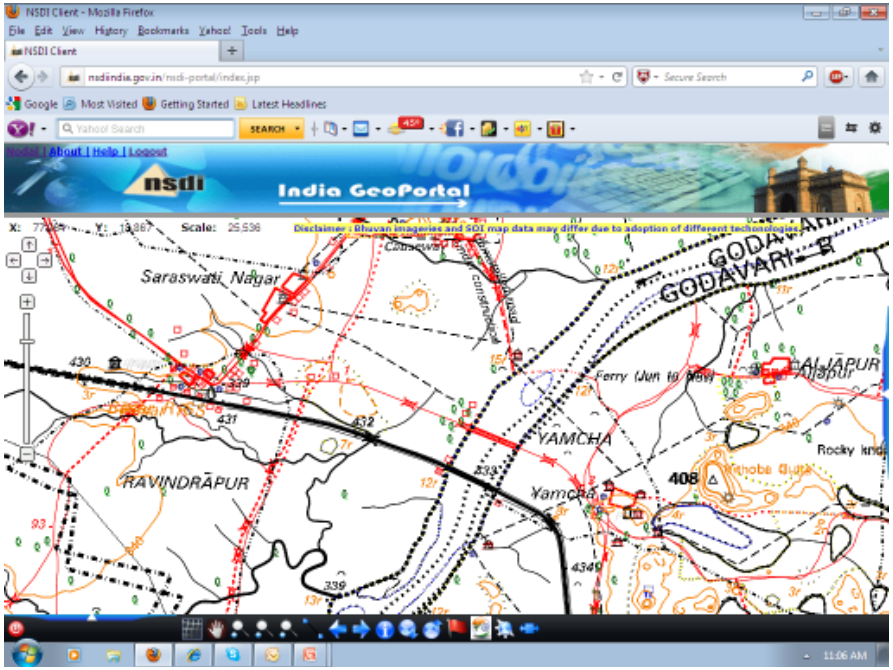
- UniqueIDs for parcels and flat properties for DoLR

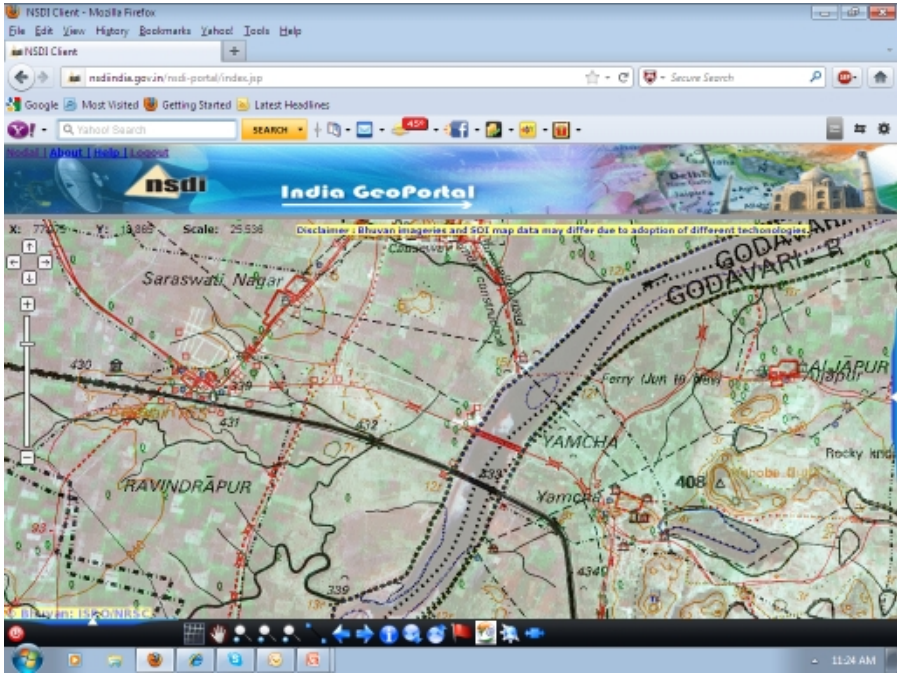
- Data Registry Prototype

- NSDI Road Map – NGIS Deliverables

Policies/ Important Decisions

- National Map Policy, 2005
- NSDI Resolution, 2006
- State Chief Secretaries Conference, Feb 2011
- National Remote Sensing Policy, 2011
- National Mirror Committee for ISO TC 211 by BIS
- National Data Sharing & Accessibility Policy, 2012
- State Data Sharing Policies (Delhi, MP, Odisha)
- National Geo-spatial Information Policy (being drafted)





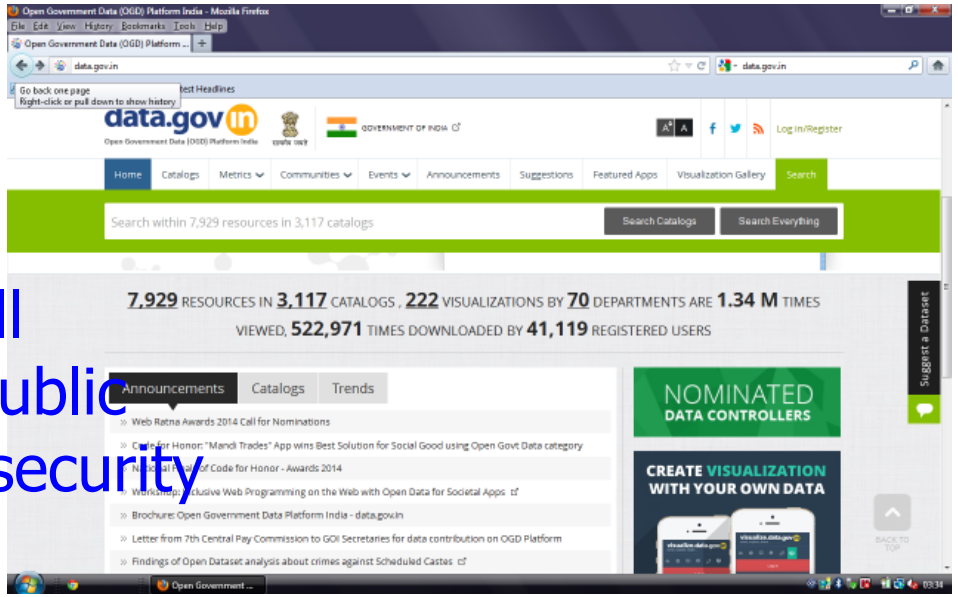
NDSAP - Highlights

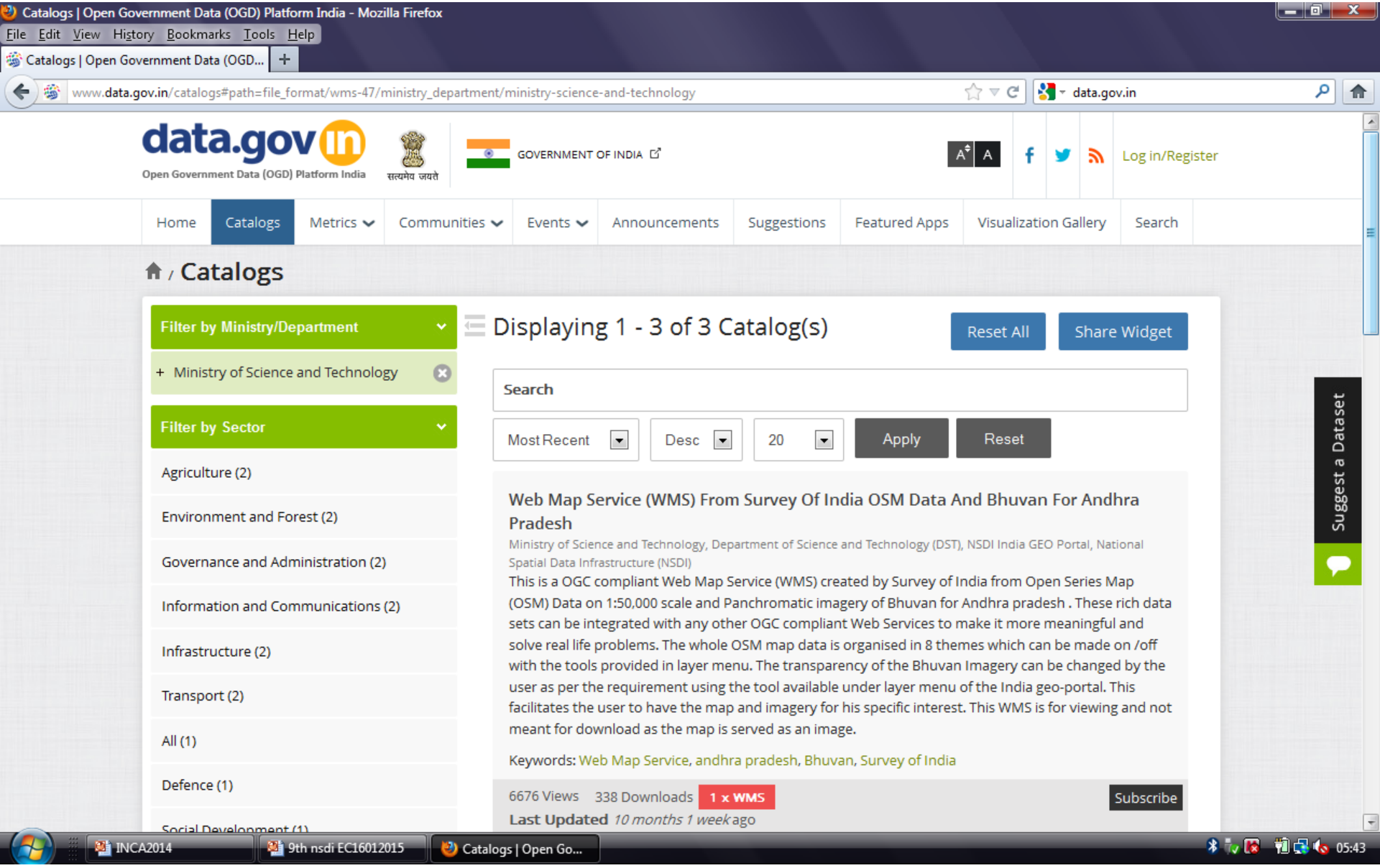
- 'Proactive' instead of 'reactive' sharing

- Mandatory sharing of all data generated through public funds except on national security considerations

- Publication of 'Exclusion or Negative List'

- Four Types of Accesses (open, automatic registered, authorised registered, restricted e.g. G2G)

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Environment and Forest (2)
Governance and Administration (2)
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Infrastructure (2)
Transport (2)
All (1)
Defence (1)
Social Development (1)
Displaying 1 - 3 of 3 Catalog(s)
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Web Map Service (WMS) From Survey Of India OSM Data And Bhuvan For Andhra Pradesh
Ministry of Science and Technology, Department of Science and Technology (DST), NSDI India GEO Portal, National Spatial Data Infrastructure (NSDI)
This is a OGC compliant Web Map Service (WMS) created by Survey of India from Open Series Map (OSM) Data on 1:50,000 scale and Panchromatic imagery of Bhuvan for Andhra pradesh . These rich data sets can be integrated with any other OGC compliant Web Services to make it more meaningful and solve real life problems. The whole OSM map data is organised in 8 themes which can be made on /off with the tools provided in layer menu. The transparency of the Bhuvan Imagery can be changed by the user as per the requirement using the tool available under layer menu of the India geo-portal. This facilitates the user to have the map and imagery for his specific interest. This WMS is for viewing and not meant for download as the map is served as an image.
Keywords: Web Map Service, andhra pradesh, Bhuvan, Survey of India
6676 Views
338 Downloads
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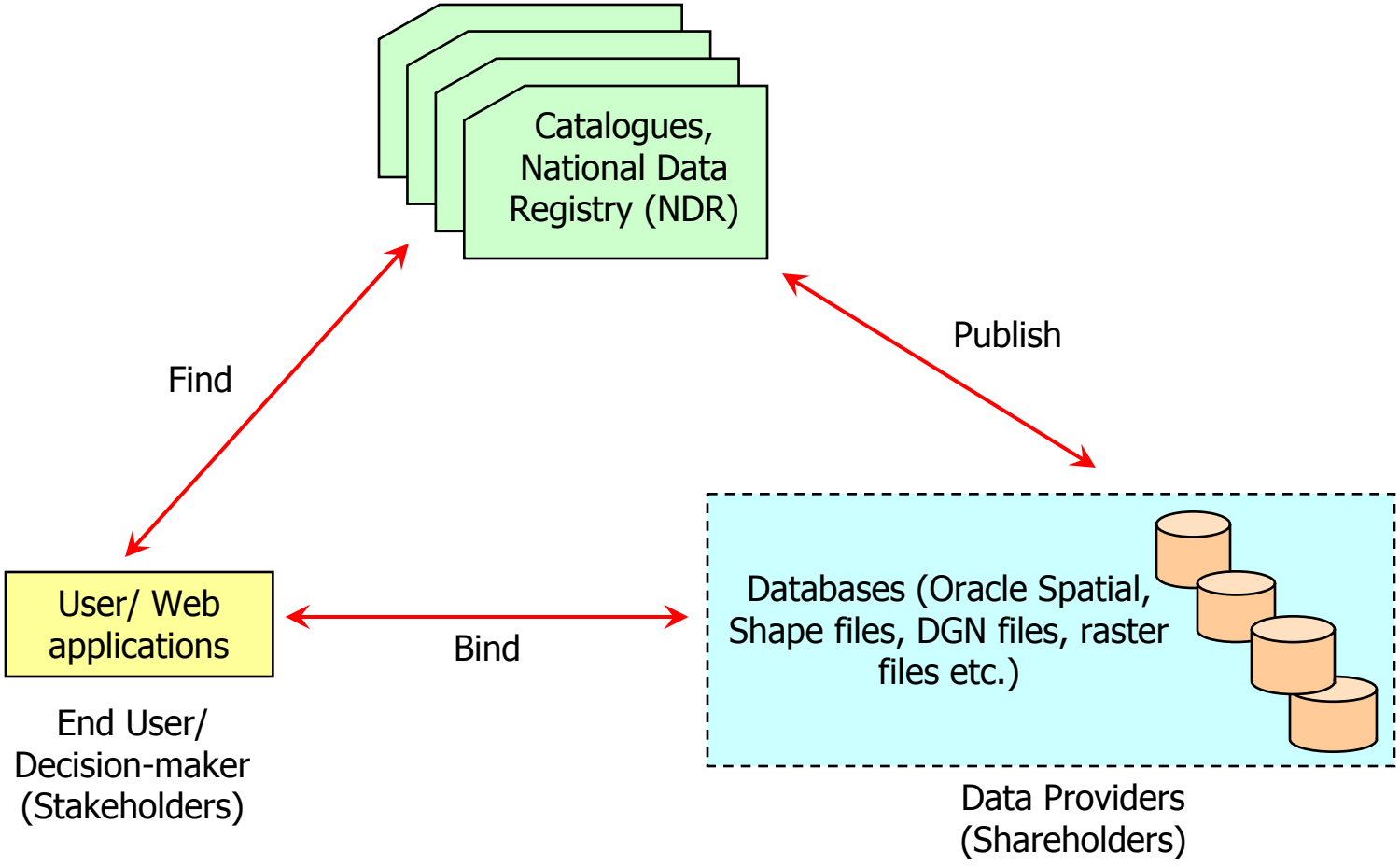
Service-oriented Architecture



Difficulties in sharing data between databases

- Different rules for object's categorization and definition (semantic heterogeneity)
- Different data models and data structures (schematic heterogeneity)
- Data collection, processing, presentation in different standards/ methods, different GIS platforms (syntactic heterogeneity)
- Different institutional constraints (data access, rights of use, costs etc.)

Approved ISO/ OGC Specifications deployed (Indicative)

- Data Metadata (ISO 19115) (NSDI Metadata version 2.0)
- Geography Markup Language (GML) (ISO 19136)
- Web Feature Service (WFS) (ISO 19142)
- Web Map Service (WMS) (ISO 19128)
- Conceptual Schema Language (ISO 19103)
- Rules for application schema (ISO 19109)
- Catalogue Service on Web (CSW)
- Style Layer Descriptor (SLD)

भारतीय मानक
Indian Standard

IS 16439 : 2016

भू-स्थानिक सूचना के लिए मेटाडेटा मानक

Metadata Standard for Geospatial Information

ICS 35.240.70

8.26 X 11.69 inch

Geospatial Information Sectional Committee, LITD 22

FOREWORD

This Indian Standard was adopted by the Bureau of Indian Standards, after the draft finalized by the Geospatial Information Sectional Committee had been approved by the Electronics and Information Technology Division Council.

India has a vast amount of map information generated through systematic topographic, geological, soil, cadastral surveys and various natural resources information generated with the use of the remote sensing data. Spatial information is expected to play a pivotal role in the sustainable development of natural resources. It is desirable to have a common set of data standards and metadata definitions for sharing the data and information transparently among government and non-government organizations, academia, industry and citizens.

Metadata serves two major purposes — both for the spatial data generator and for the spatial data user. For the generator, the metadata provides a framework to document the spatial data and declare its content for users. For the user, metadata serves many important purposes, including finding the spatial data as per need; browsing spatial data; deciding on whether the spatial data will meet the application need; finding how the spatial data can be accessed and processing of geo-spatial information for various data generating agencies.

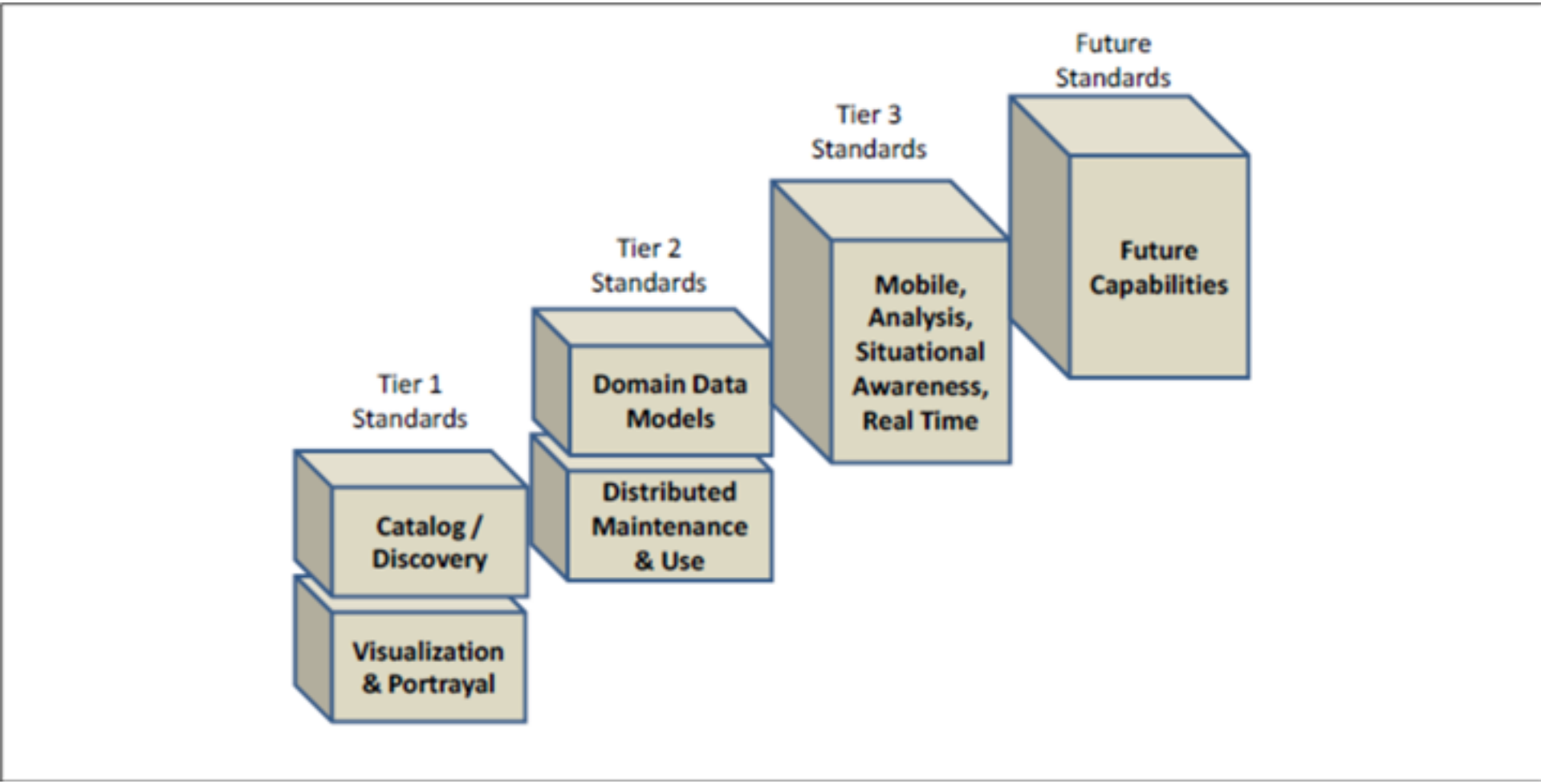
The Committee responsible for the formulation of this standard has reviewed the provisions of the international publications listed in Annex A and has decided that these may be used in conjunction with this standard till Indian Standards on these subjects are published.

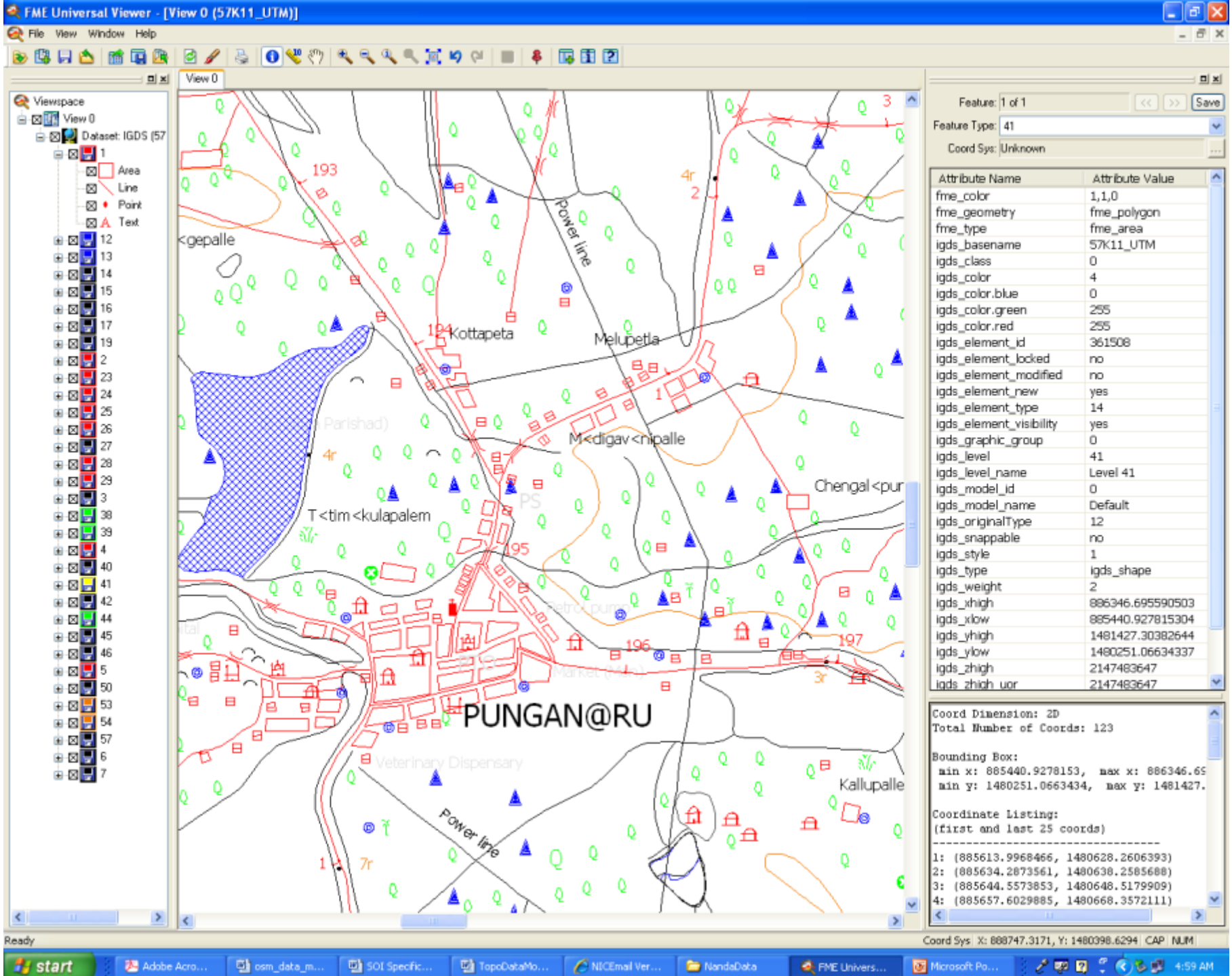
Assistance has been drawn from ISO 19115 : 2003 'Geographic information — Metadata, National Natural Resources Management System (NNRMS)/Natural Resources Database (NRDB) Standards and National Spatial Data Infrastructure (NSDI) Metadata standard Version 2.0' while formulating this standard.

The composition of the Committee responsible for the formulation of this standard is given in Annex C.

Different Tiers of Standards for GI Management

(Source: UNGGIM Draft prepared by ISO, OGC, and IHO)

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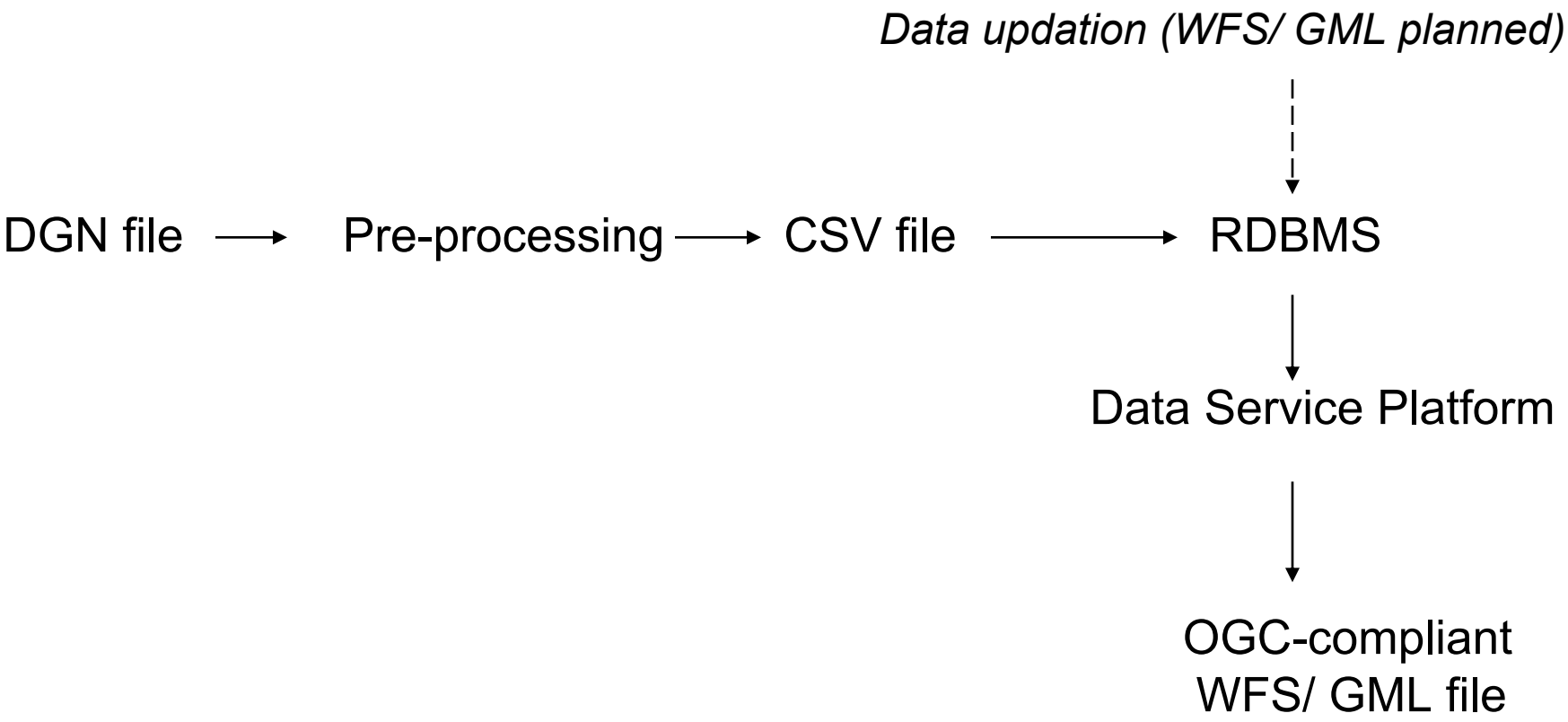

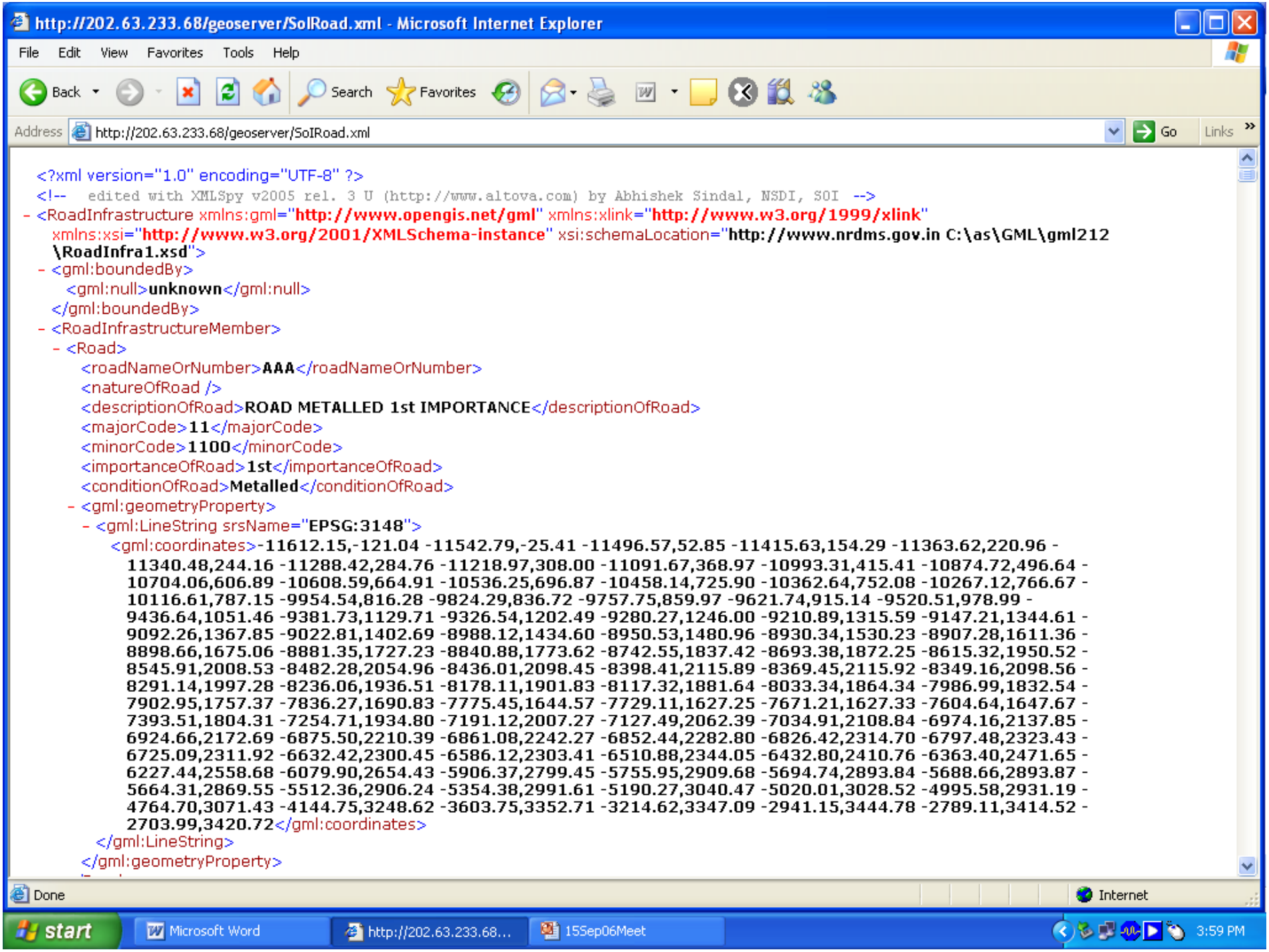
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UML Class Diagram from Data Content on Surface Geology

Document on Data Content Standard.pdf - Adobe Reader

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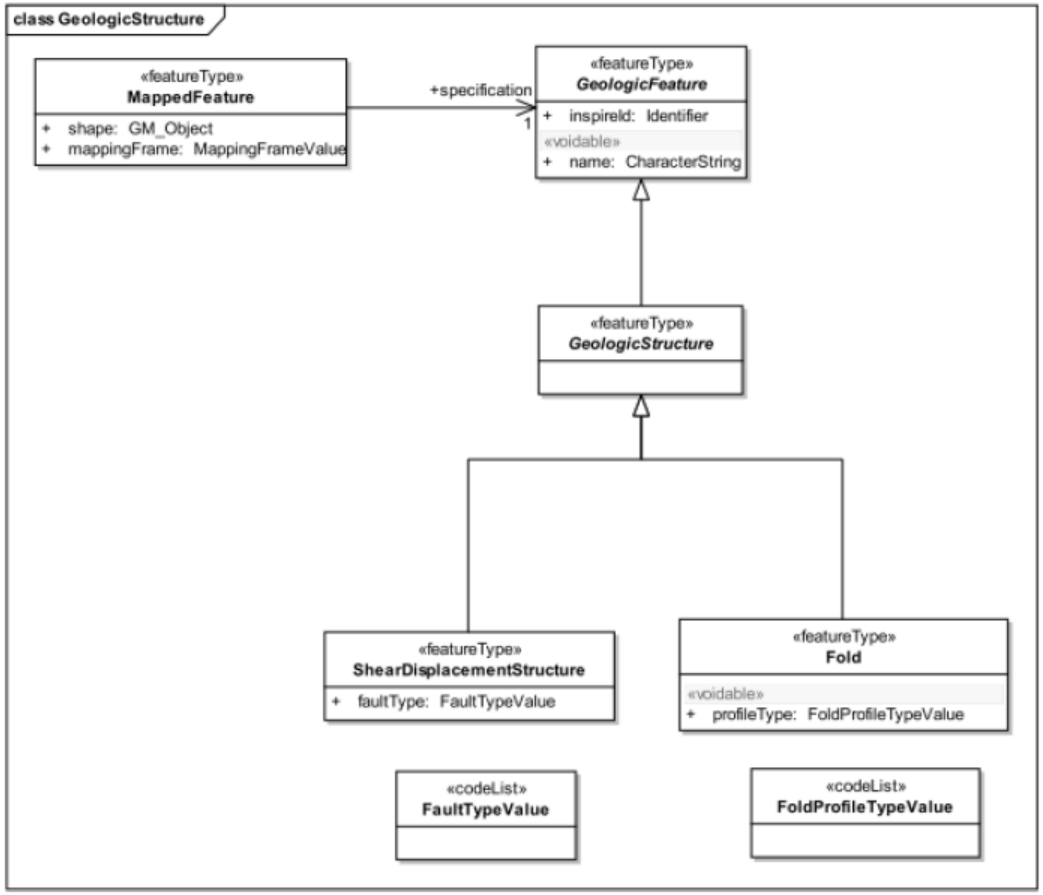

UML class diagram: Geologic Structure

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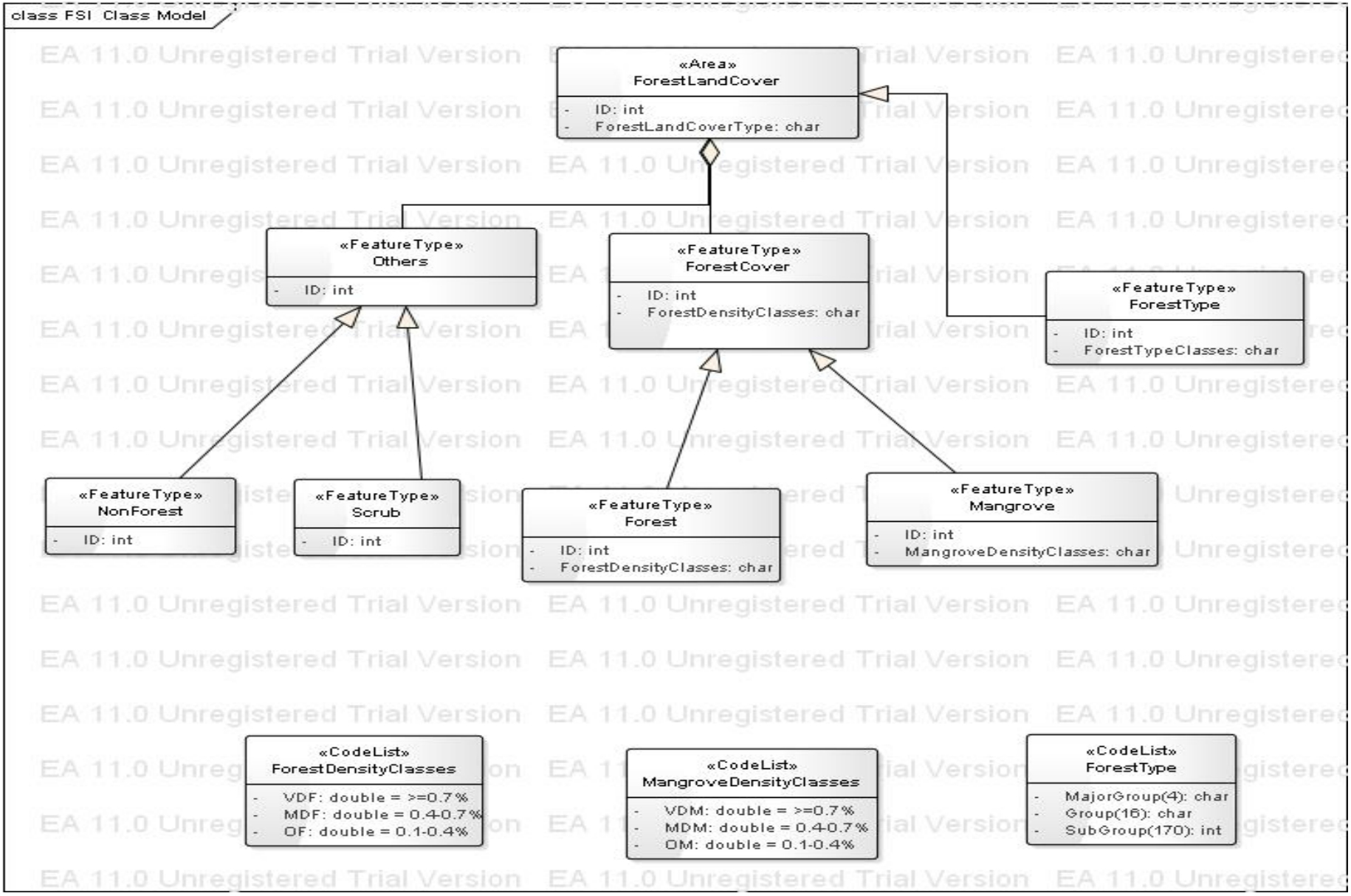
Source: GSI

UML Class Diagram from Data Content on Forest



Source: FSI

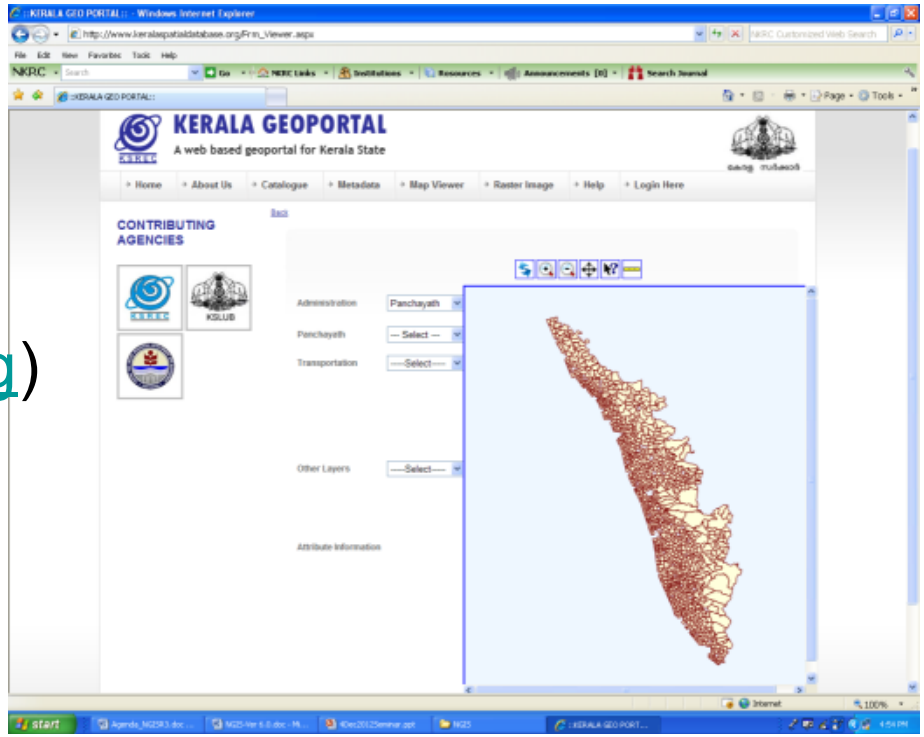
State SDI Initiative

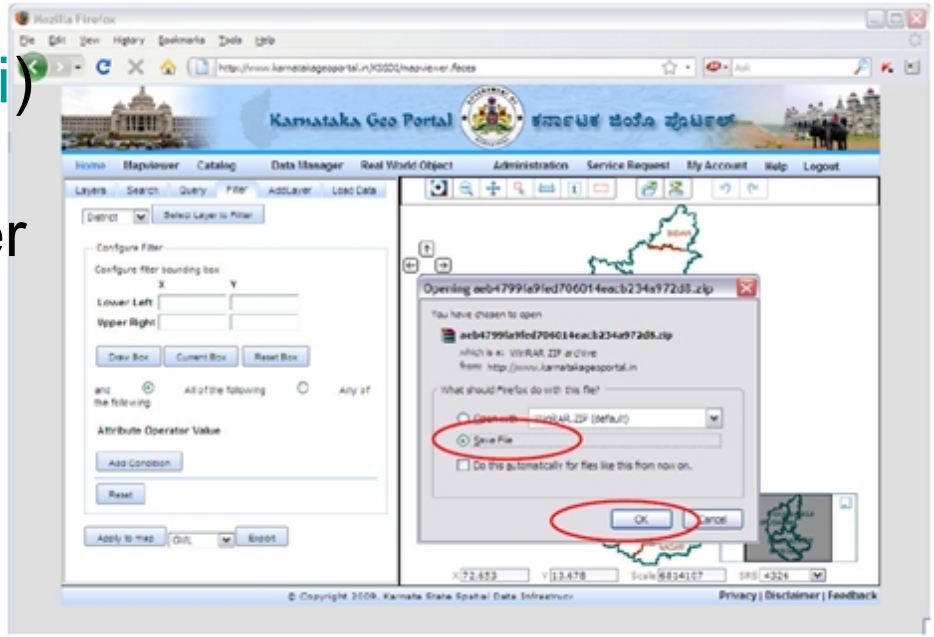
- Kerala Geoportal (www.keralaspatialdatabase.org)

- Karnataka Geoportal (www.karanatakageoportal.in)

- North East SDI Geoportal (agnee.tezu.ernet.in:8004/nesdi)

- Other State SDI projects under implementation (West Bengal, Haryana, Uttarakhand, J & K, Odisha)





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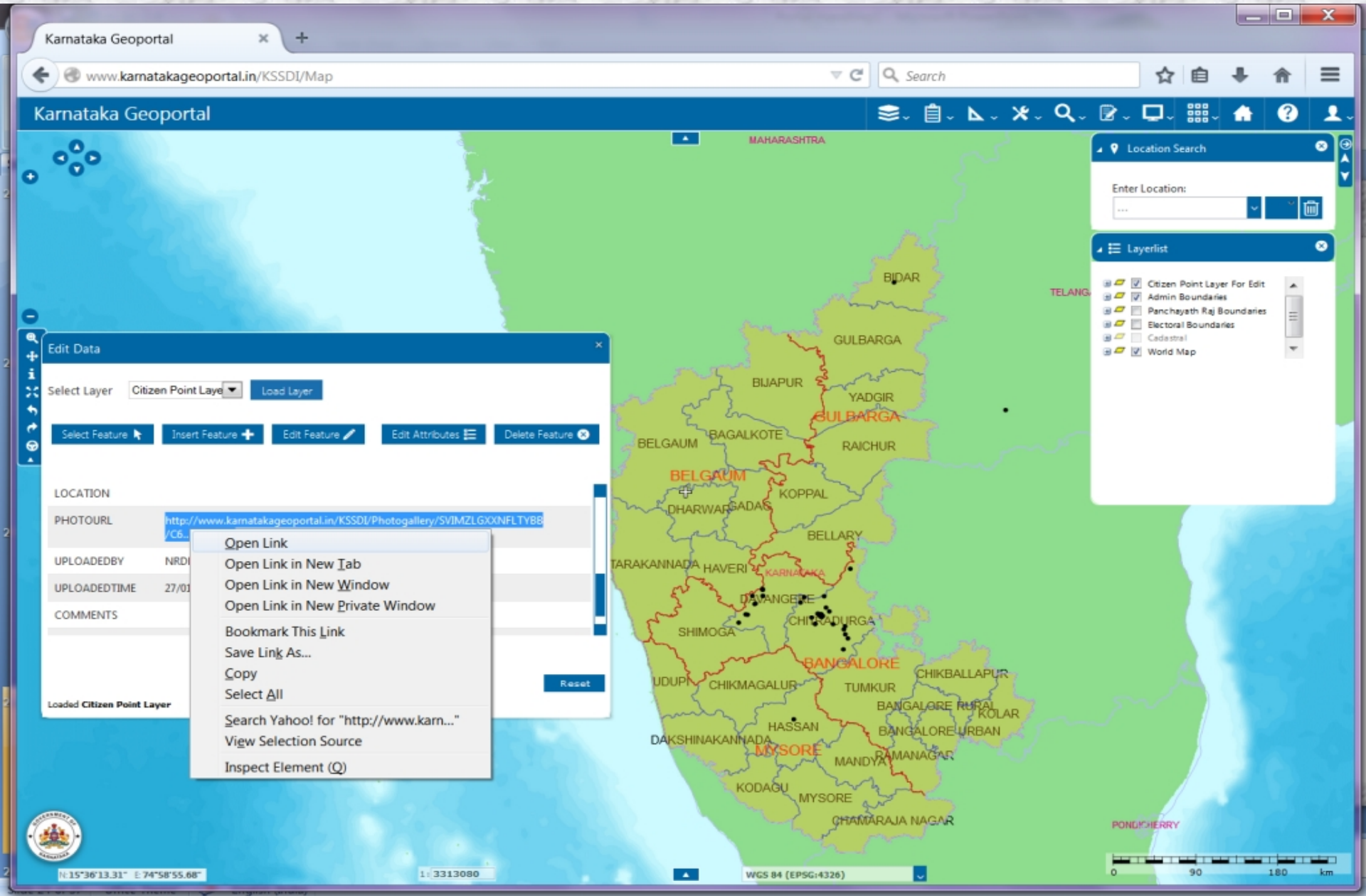

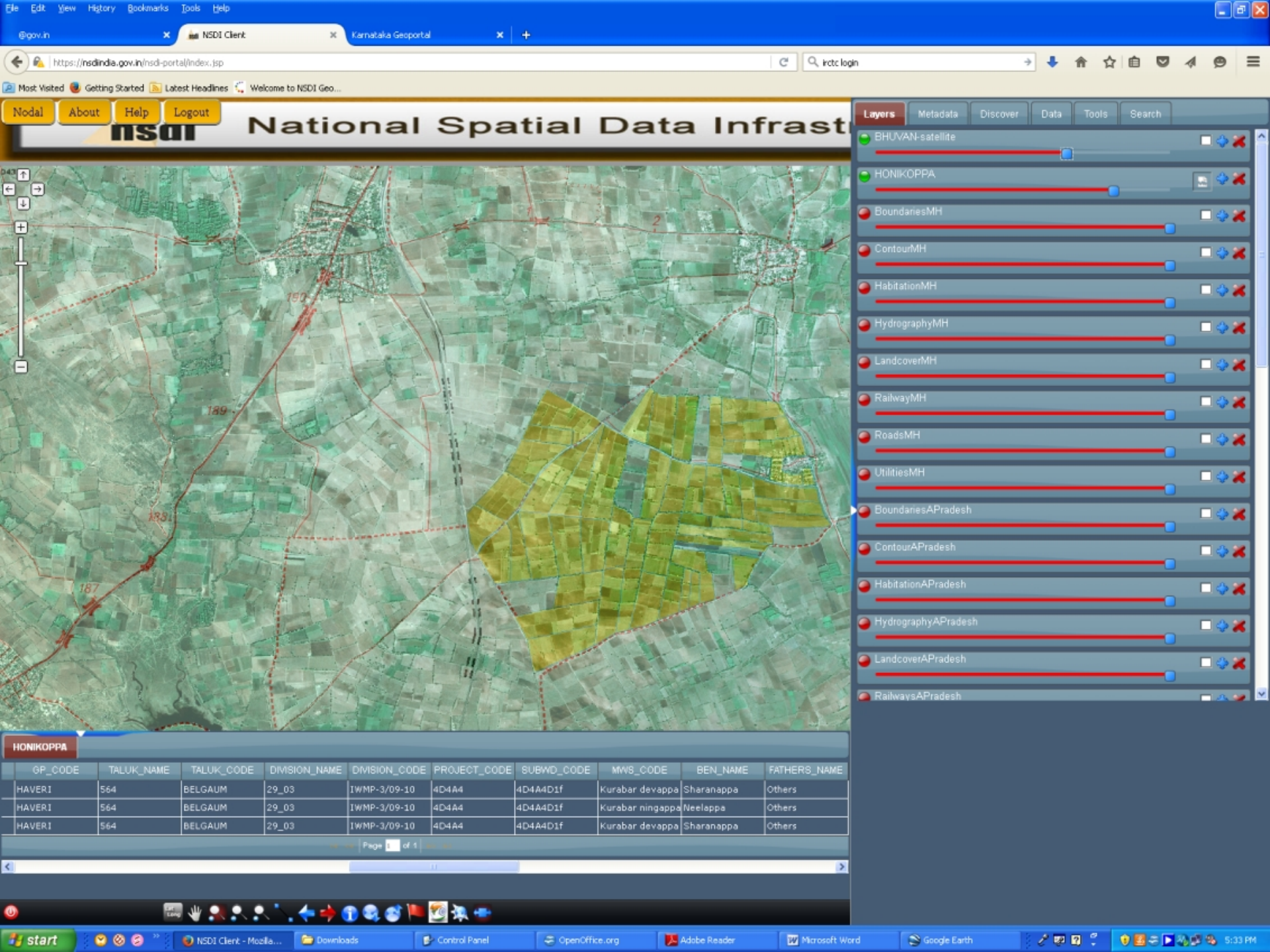
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Logout
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Layers
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HONIKOPPA
BoundariesMH
ContourMH
HabitationMH
HydrographyMH
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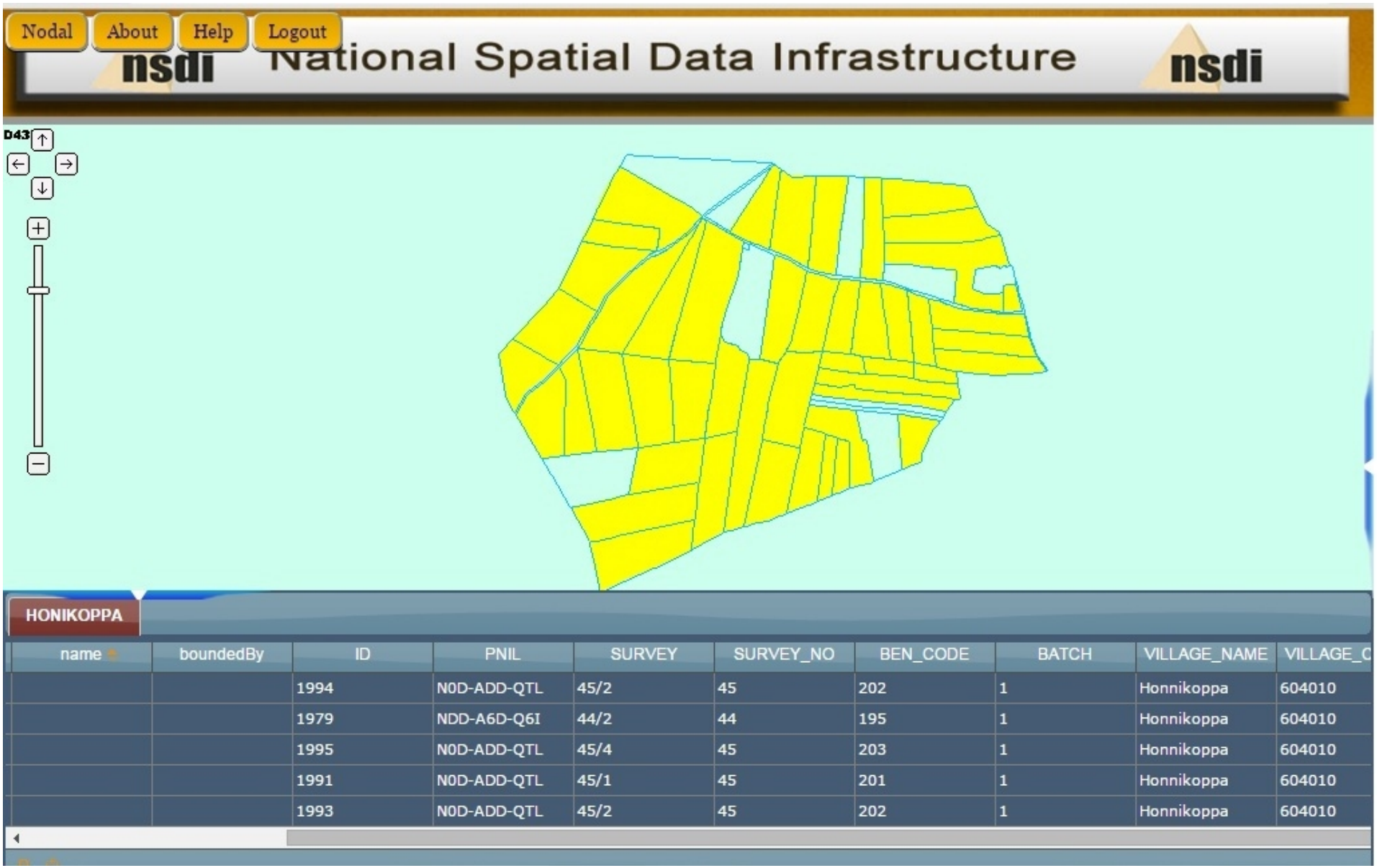
Parcel Natural Identifiers for LIS



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		1991	N0D-ADD-QTL	45/1	45	201	1	Honnikoppa	604010
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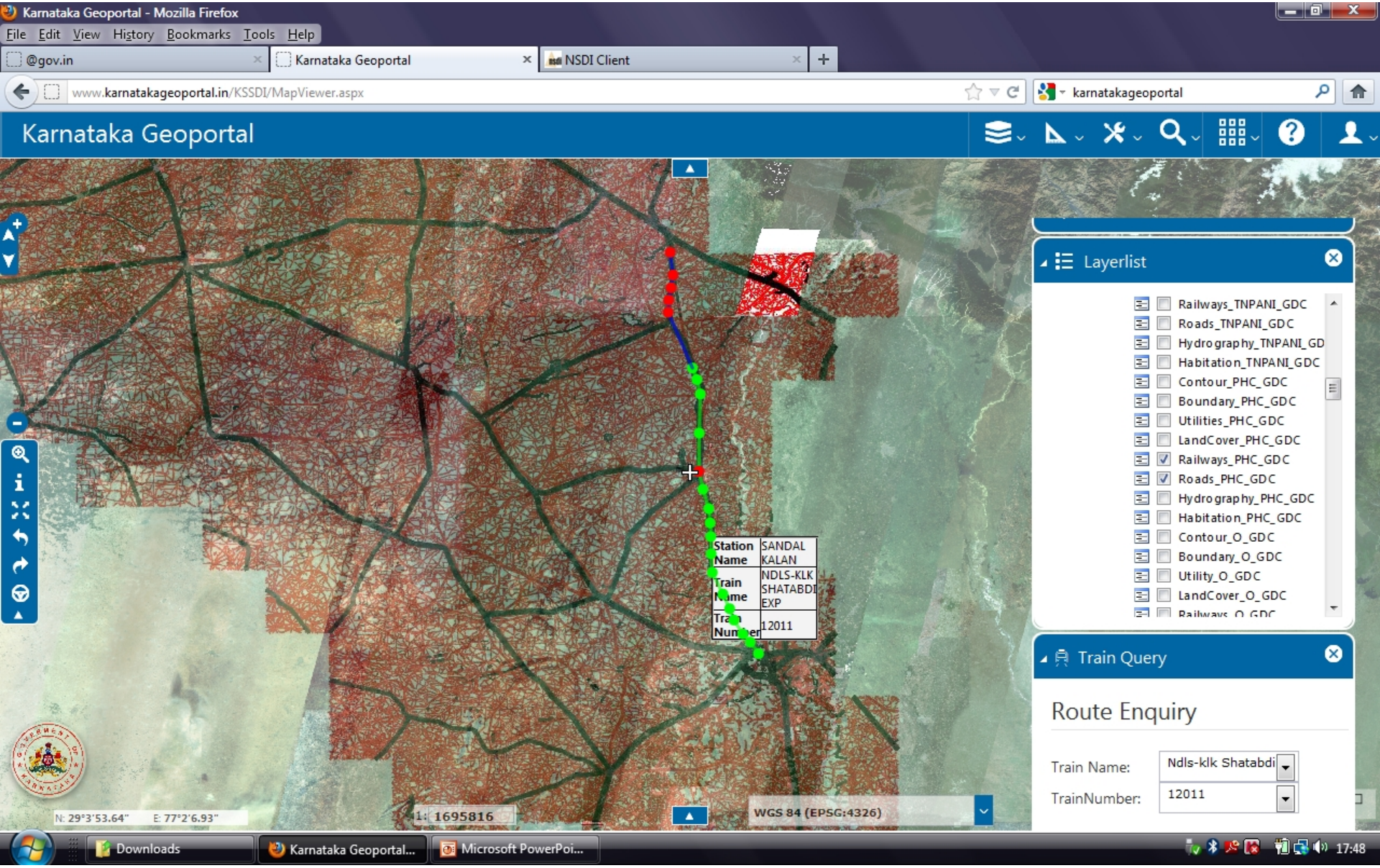
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Layerlist
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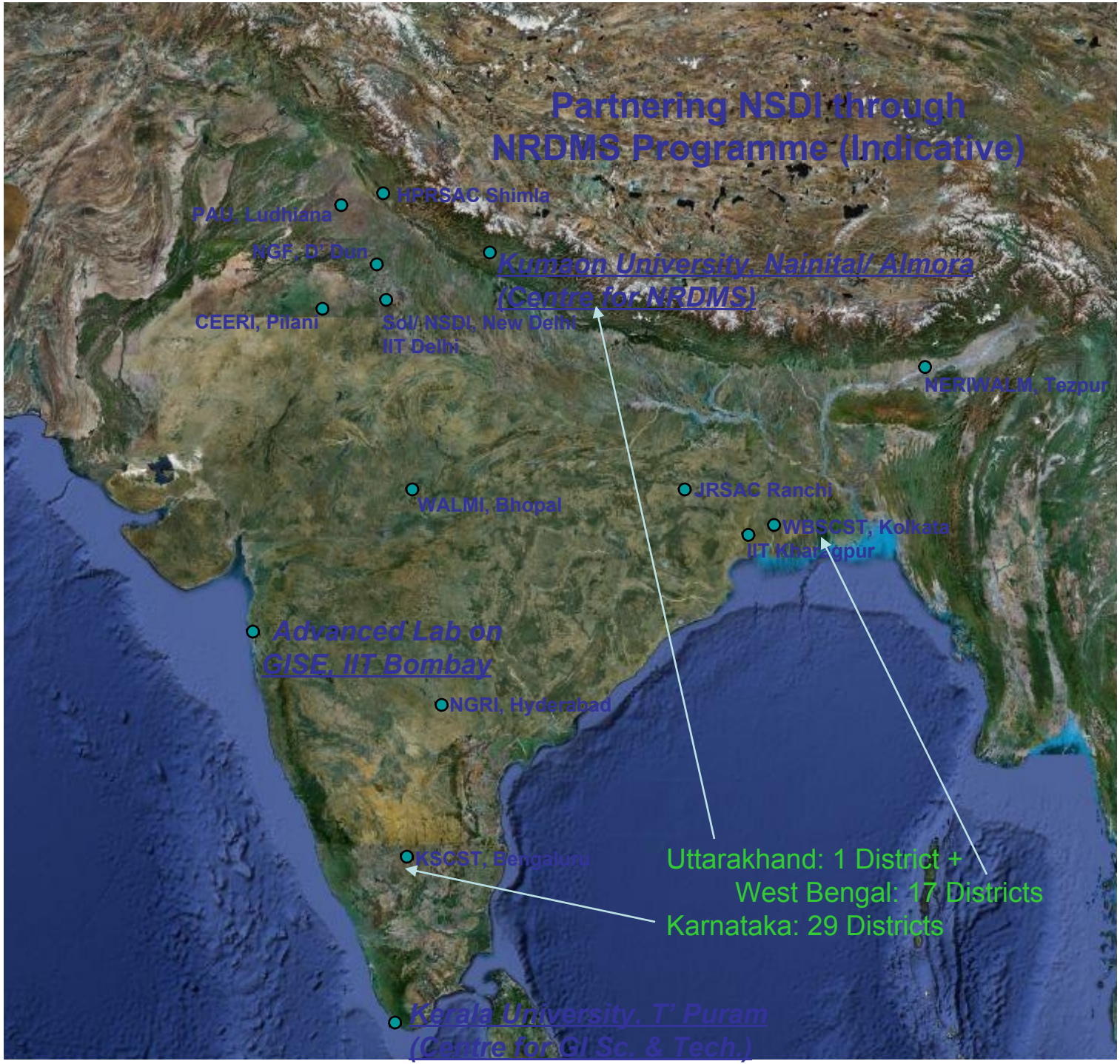


State Geo Portal prototypes

- Karnataka
- West Bengal
- Uttarakhand
- Kerala
- The North East
- Kerala
- Haryana
- J & K
- NCT of Delhi

R & D Centers

- Kumaon Univ.
- Kerala Univ.
- Advanced Lab on GISE, IITB

NSDI's Present Focus

- Creation/ provision of GIS Assets/ WFS for applications

- Publication of foundation data layers - DEM, Ortho-image, Positioning Network, Transport Network, Place names

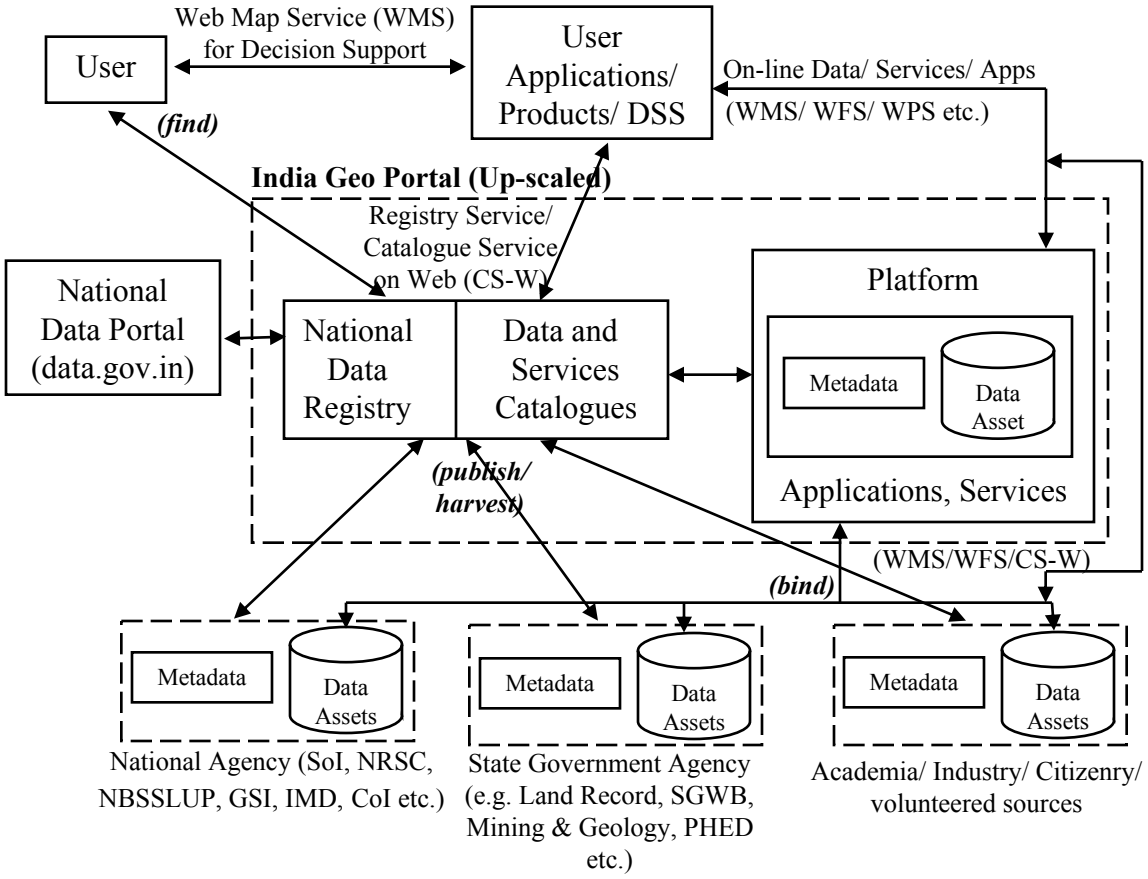
- Development/ Implementation of NDR

- Integration of geo-referenced and statistical data

- Application Domain Working Groups (Railways, CAMPA, Oil & Natural Gas, Disaster Management)

- Experimental NSDI Application Services from NIC Cloud (Megharaj)

NSDI Technical Architecture with NDR



Thank you!!!!

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