

INDIAN GEOSPATIAL DATA ECOSYSTEM



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भारत का राजपत्र

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विज्ञान और प्रौद्योगिकी मंत्रालय
(विज्ञान और प्रौद्योगिकी विभाग)
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नई दिल्ली, 28 दिसम्बर, 2022

का.आ. 6095(अ).—केंद्रीय मन्त्रीमंडल द्वारा दिनांक 16.12.2022 को आयोजित अपनी बैठक में राष्ट्रीय भू-स्थानिक नीति, 2022 (अनुलग्नक-क) को अनुमोदन प्रदान किया गया है।

2. तदनुसार, तत्काल प्रभाव से कार्यान्वयन हेतु राष्ट्रीय भू-स्थानिक नीति, 2022 को एतद द्वारा अधिसूचित किया जाता है।

[फा. सं. एसएम/25/07/2021 (ई-33381)]

सुनिल कुमार, संयुक्त सचिव

अनुलग्नक-क

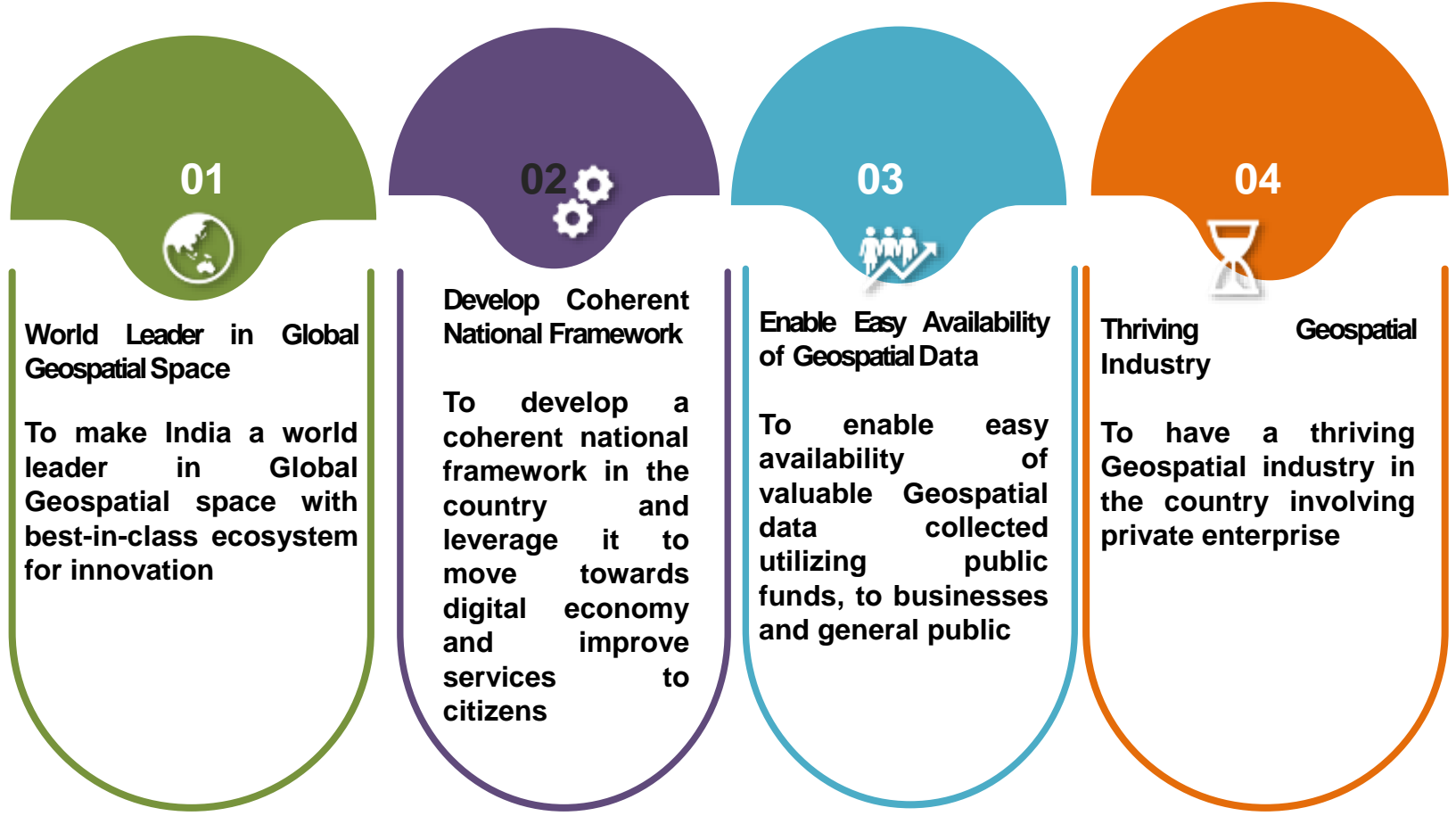
राष्ट्रीय भू-स्थानिक नीति, 2022

1. आमुख

1.1. भू-स्थानिक प्रौद्योगिकी के कृषि से उद्योगों, शहरी या ग्रामीण अवसंरचना विकास, भू प्रशासन, बैंकिंग और वित्तीय आर्थिक गतिविधियों, संसाधनों, खनन, जल, आपदा प्रबंधन, सामाजिक योजना, आपूर्ति सेवाओं आदि तक अर्थव्यवस्था के लगभग प्रत्येक क्षेत्र में अनुप्रयोग हैं। भू-स्थानिक आंकड़ों को अब व्यापकतः सिद्ध सामाजिक, आर्थिक और पर्यावरणीय मूल्य, जो सरकारी प्रणालियों और सेवाओं और सतत राष्ट्रीय विकास पहलों को सामान्य और आधारभूत संदर्भ फ्रेम के रूप में 'स्थान' का उपयोग करके एकीकृत करने में सक्षम बनाता है, सहित महत्वपूर्ण राष्ट्रीय बुनियादी ढांचे और सूचना संसाधन के

National Geospatial Policy 2022

Vision and Goals



National Geospatial Data Themes

01

GDPDC will adopt & develop Fundamental Data Themes as recognized by UNGGIM as National Fundamental Geospatial Data Themes in line with National priorities.

02

Concerted efforts by all the Partnering Agencies would be the underpinning premise for availability of Geospatial data for its use and access by decision makers and content developers.

03

The nodal Ministries/Departments will be responsible for for creation and maintenance of each of the National Fundamental Geospatial Data Themes

04

They must explore procurement of Geospatial services on their own rather than use Sol as an intermediary. Ministries /Deptt would increasingly engage with private sector to meet their requirements

05

The Nodal Ministries/Departments will bear the cost for the creation & development of Geospatial Data required by them

06

Sol will act as facilitator in harmonization of the data sets to ensure that data generated from various mapping activities by various stakeholders get seamlessly integrated into Geodetic Reference Framework

07

Sol to develop a mechanism to facilitate consolidation of the data sets into the national topographic template to meet the demand of periodically updated, high-resolution & accurate topographic data for the country

National Geospatial Data Registry (NGDR)

01

Provisions for efficient access to the National Fundamental and Sectoral Geospatial Data by all stakeholders in the country will be made through operationalization of a National Geospatial Data Registry (NGDR)

02

Unified Geospatial Interface (UGI), an electronic data querying and processing service, will be operationalized for provision of consumer-oriented products, applications, services and solutions using the Geospatial data and metadata contained in the NGDR and utilizing the data supply chains from the Central and State Level Partnering Agency Data Nodes

03

Survey of India shall be the agency responsible for developing and operating the NGDR and the UGI in collaboration with BISAG-N, other institutions and the private sector, under the guidance and supervision of GDPDC in relation to the scope, functionality, and performance of the NGDR and the UGI

STANDARDS

Standards related to National Fundamental and Sectoral Geospatial Data Themes would be developed and promulgated after consultation with a broad range of data users and providers

National Data Registry (NDR) Dynamic Query Module

The screenshot displays the National Data Registry (NDR) Dynamic Query Module interface. The top navigation bar includes the 'nsdi' logo, the title 'National Data Registry', and a 'MOSPI' indicator. The main content area is divided into a left sidebar and a right map area.

Dynamic Query Module Interface:

- Navigation:** Metadata Search (selected), Datasets (1), Spatial Query, Query Results, My Queries.
- Search:** Search term: **broadactivity**. Below the search bar is the prompt 'Enter Search Keywords'.
- BBOX:** DRAW BBOX button.
- Dataset List:**

Title	Agency	Type	Theme	Action
> tripura_tehsilwise_broadactivity	Ministry of Statistics and Programme Implementation MOSPI	Vector	Statistics	+ ADD
> statewise_broadactivity	Ministry of Statistics and Programme Implementation MOSPI	Vector	Statistics	+ ADD
> Karnataka_tehsilwise_broadactivity	Ministry of Statistics and Programme Implementation MOSPI	Vector	Statistics	- REMOVE
> districtwise_broadactivity	Ministry of Statistics and Programme Implementation MOSPI	Vector	Statistics	+ ADD

Records per page: 5 | 1 - 4 of 4 records

Map Area:

- Layers Panel:**

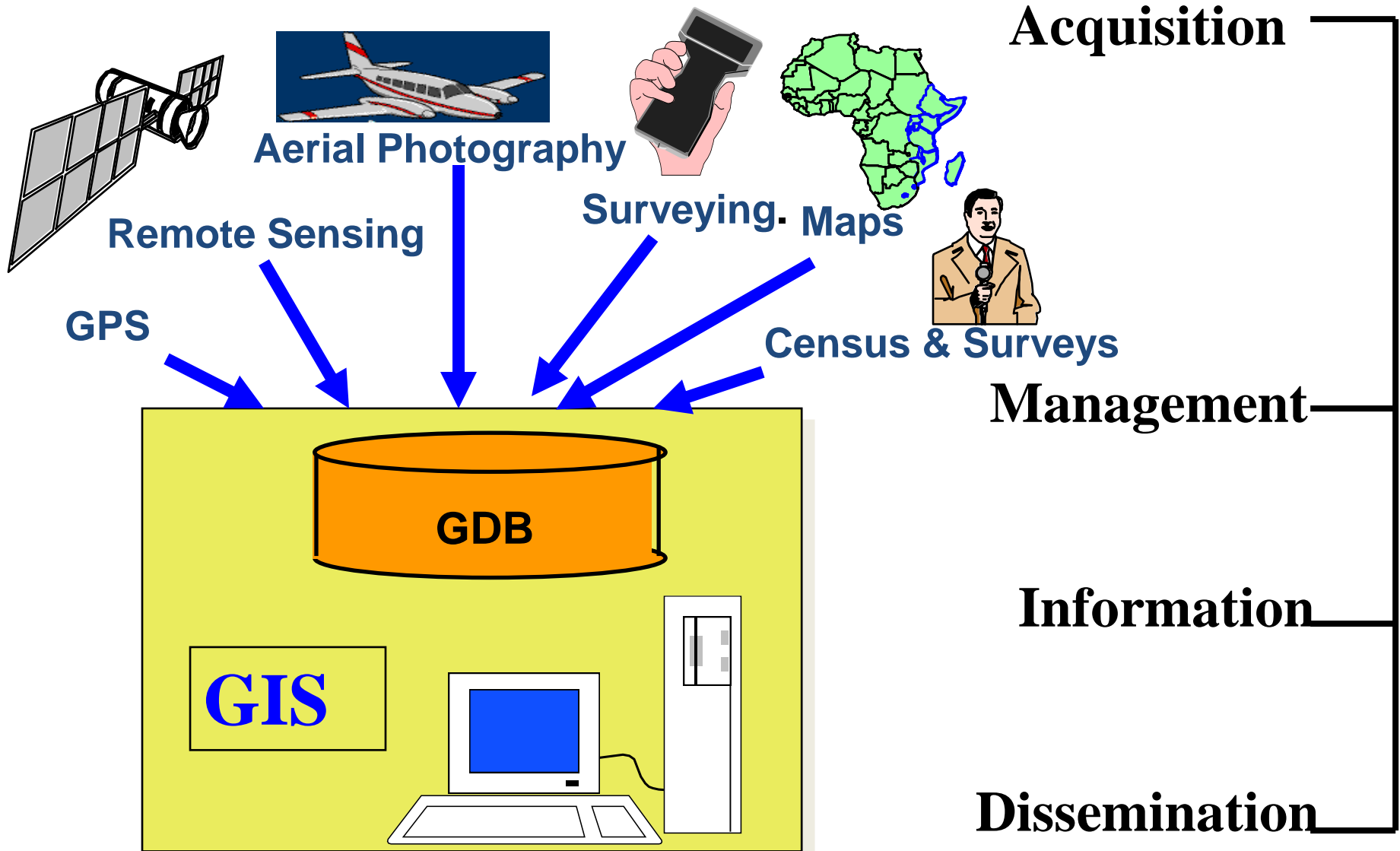
- Karnataka_tehsilwise_broadactivity (MOSPI)
- India - State Names
- India - States
- India - Boundary
- Base Map

Map Labels: PUDUCHERRY, TAMIL NADU

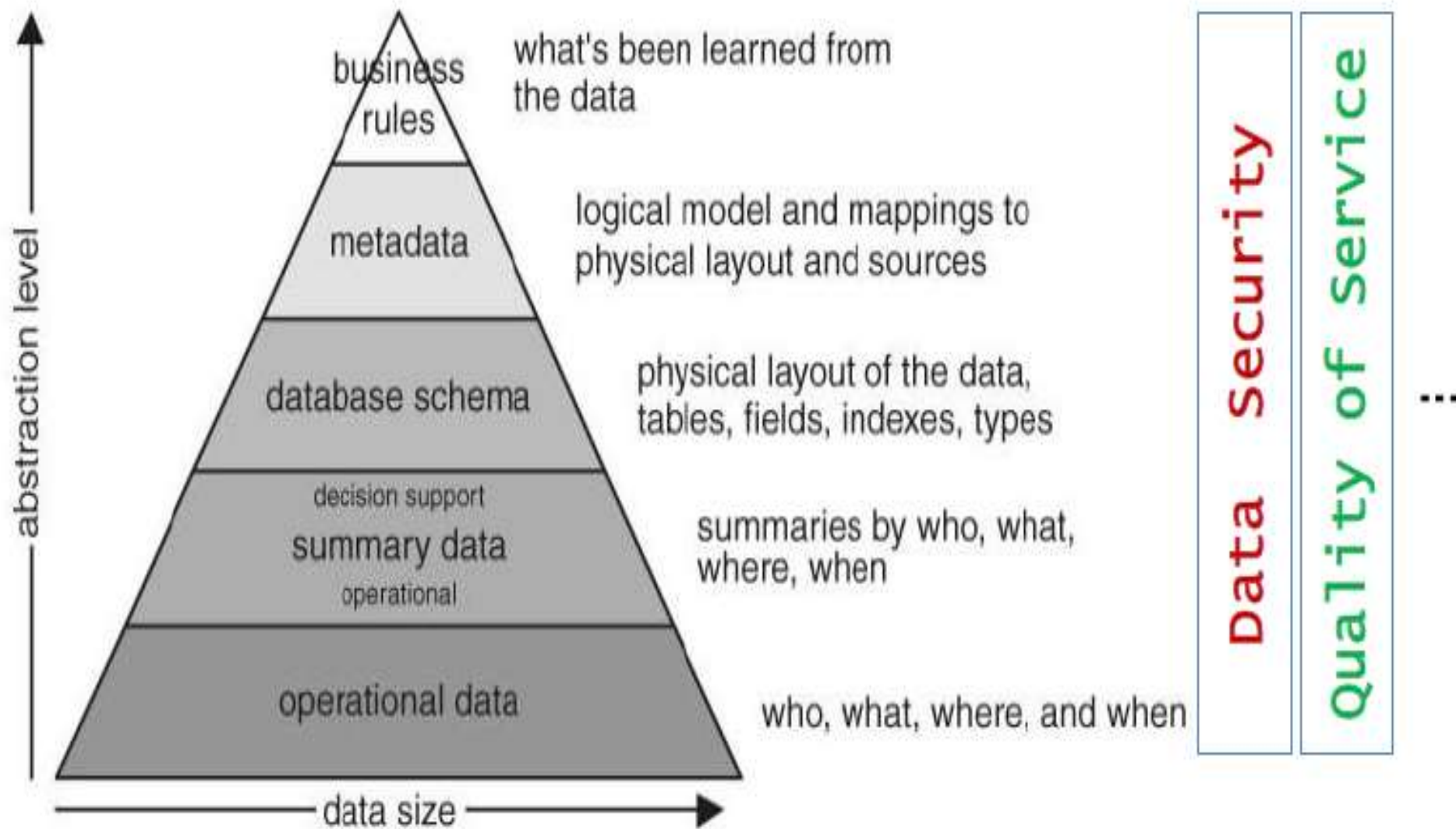
Scale: 1:4,640,282. Scale bar shows 0, 100 km, 200 km.

Geographic Information Process

(illustration)

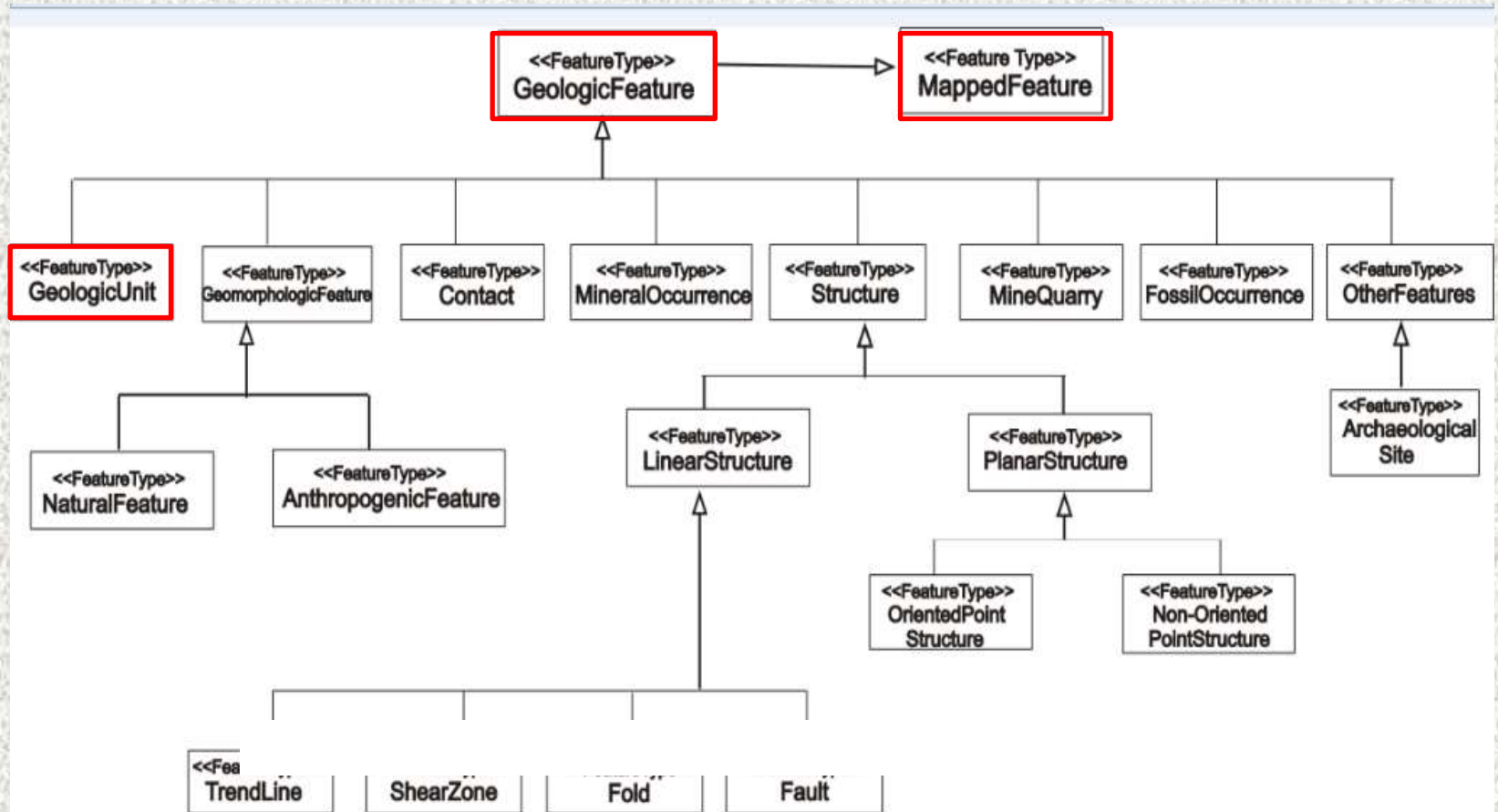


Generic Architecture of Data

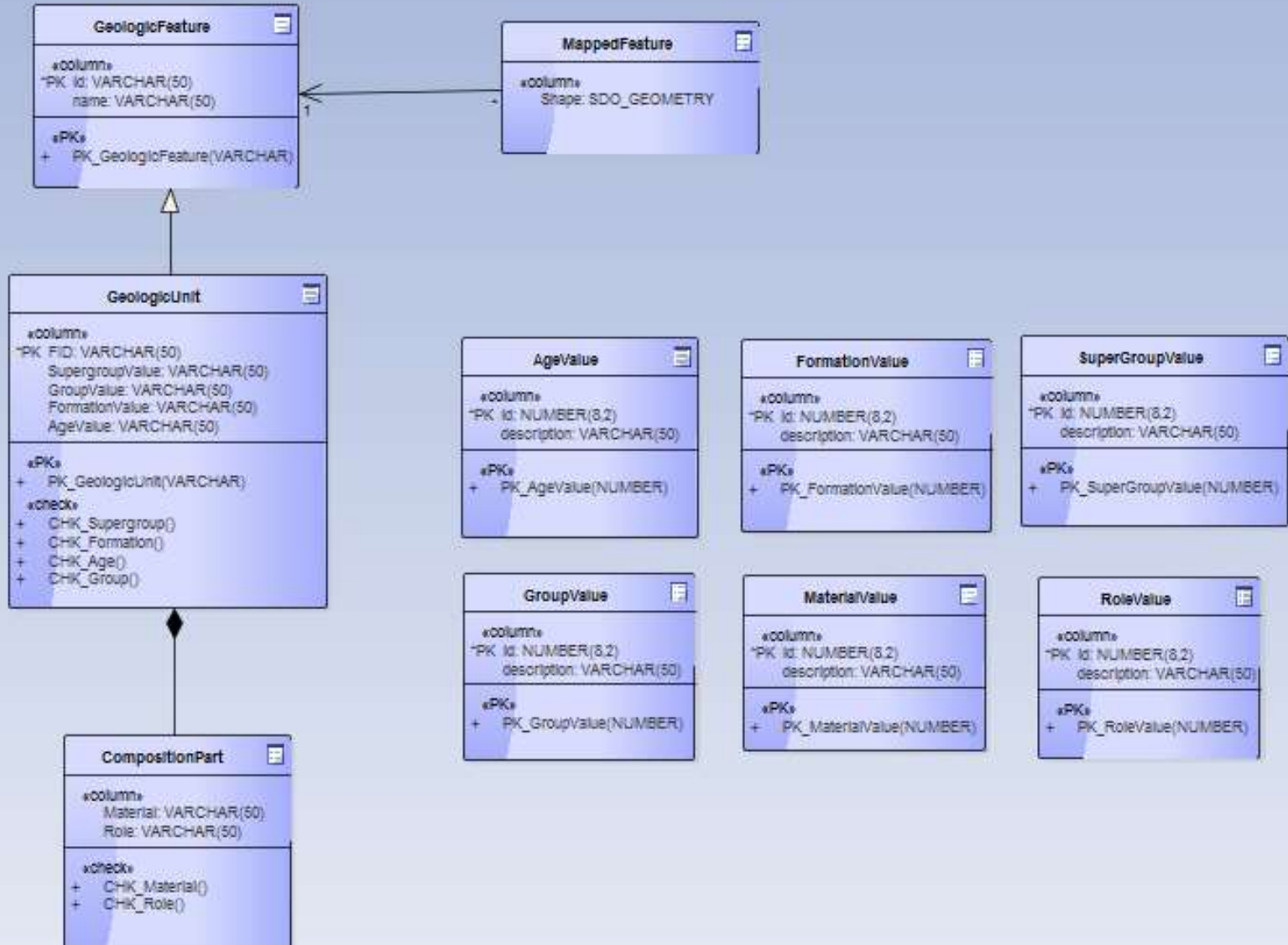


Data Management and Information Generation

Conceptual data model

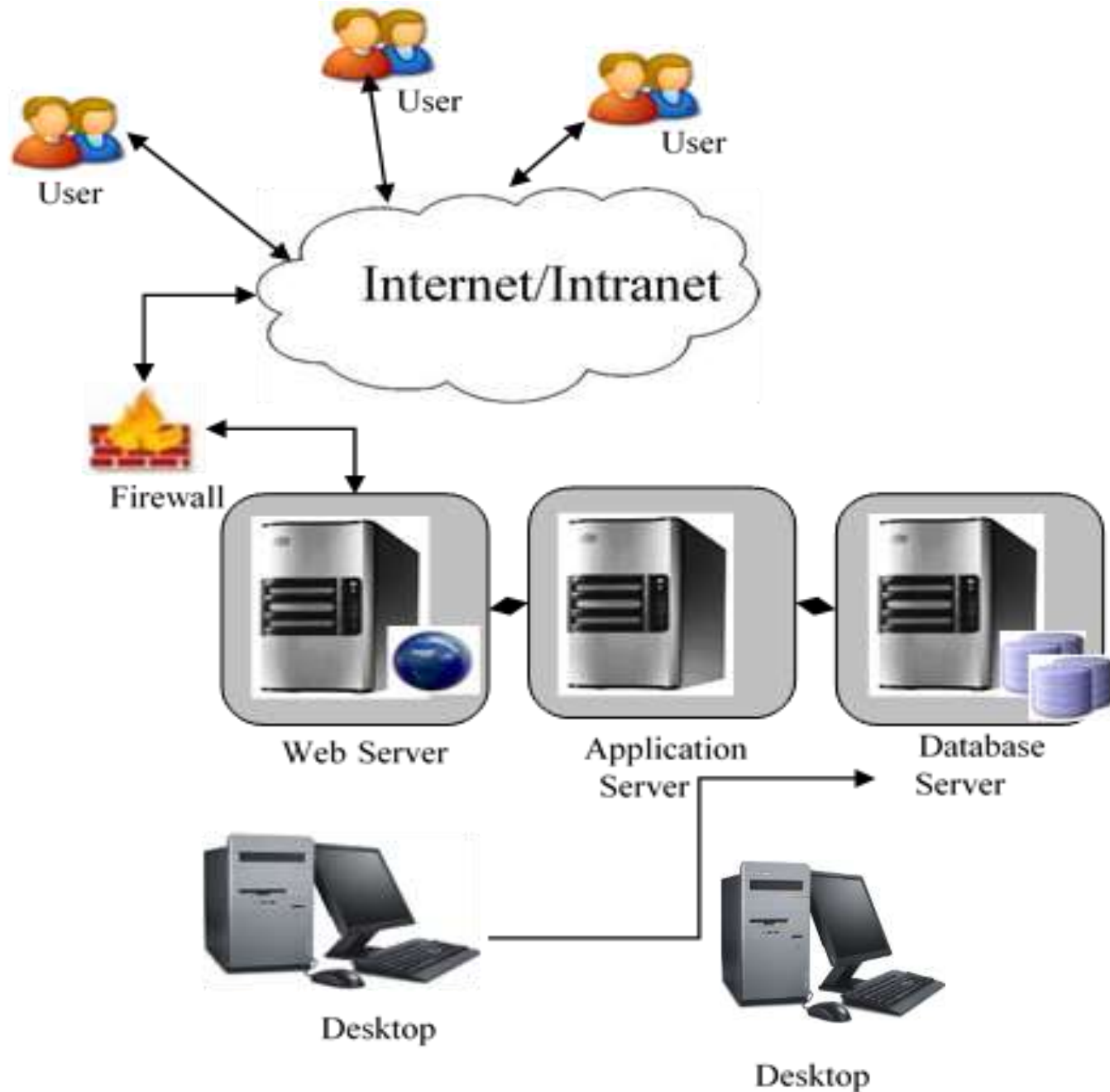


Logical data model



Data Availability and accessibility

System Architecture of a Spatial Database Infrastructure



Data Interoperability and Standard Requirements

- Many Data types
- Different Velocities – especially during a disaster
- Many Sources – distributed locally to globally
- Systems must talk to Systems (e.g. Technology GEOSS)
- Organisations must talk to Organisations (i.e. Policy)
- OGC and other Standards enable better discovery, access, fusion, processing and distribution of data and information products – (i.e. Interoperability and data sharing)
- Implementation enables open data policy

Geospatial Information Standard LITD 22

Twin Purposes:

- a) To formulate National Standards in the field of Geospatial Information
- b) National Mirror Committee for ISO/TC 211

GEOSPATIAL INFORMATION STANDARDS

At National Level (BIS):

- a) Standards formulated : 12
- b) Standards in formulation : 03

At International Level (ISO):

- a) Standards formulated : 89
- b) Standards in formulation : 23 (Some are Revision)

Indian Standards framed/ co-branded by BIS(LITD-22)

Sr.No.	Standard No.	Year	Title
1	IS 13393	2017	Standard Representation of Geographic Point Location by Coordinates
2	IS 16439	2016	Metadata Standard for Geospatial Information
3	IS 16554	2017	Data Exchange Standard for Geospatial Information
4	IS 16626	2017	Geographic Information - Geography Markup Language (GML)
5	IS 16626 : Part 2	2018	Geographic Information - Geography Markup Language (GML) Part 2 Extended Schemas and Encoding Rules
6	IS 16699	2018	Geographic Information -Web Map Server Interface
7	IS 16967	2018	Geographic Information - Location-Based Services – Tracking and Navigation
8	IS 16968	2018	Geographic Information - Location-Based Services - Multimodal Routing and Navigation
9	IS 16970	2018	Geographic Information – Rules for Applications Schema
10	IS 17007	2018	Geographic Information - Conceptual Schema Language

CURRENT PROJECTS IN LITD 22

- a) Data Content Standard for Geospatial Information – Soils
- b) Cadastral Data Content standard for Geospatial Information
- c) Revision of IS 16439 'Metadata Standard for Geospatial Information
- d) Standards on LIDAR
- e) NAVIC RECEIVERS

Future Roadmap of Geospatial Data

- **New Techniques to handle Geospatial Data Streams**
- **Developing approaches for Knowledge Representation of Geospatial Information**
- **Linked Geospatial Data**
- **Spatial Data Fusion**
- **Big data analytics and Geo-Computational Systems**

THANK YOU!

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