



# National Geospatial Policy 2022

*Collaborative Development of Integrated National Strategy and Policy Frameworks for Knowledge-centric Infrastructure*

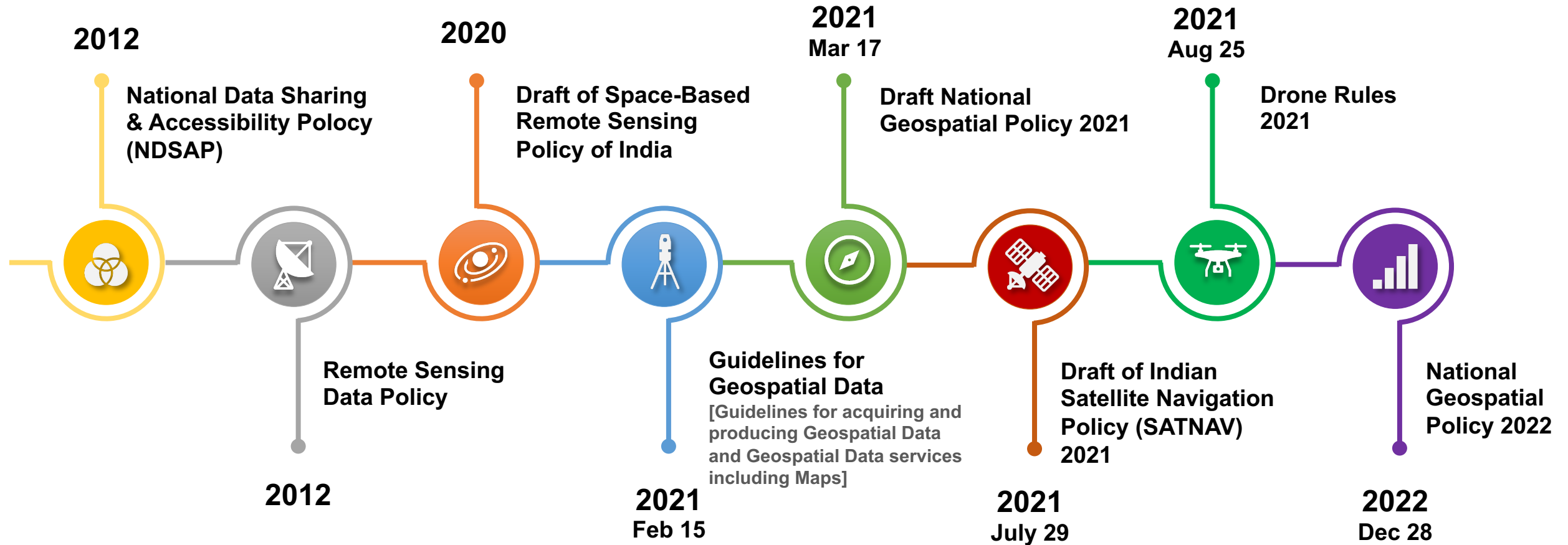
*GKI Summit, Rotterdam, Netherlands*

05<sup>th</sup> May 2023

Sunil Kumar, Surveyor General of India  
Joint Secretary – Department of Science & Technology, India

# Background

## Policy Landscape for Evolving Geospatial Ecosystem in the Country



# National Geospatial Policy 2022

## Salient Features

- Citizen-centric policy to improve the quality of life, address needs and aspirations of people
- Seeks to strengthen the Geospatial sector to support National Development
- Aims to create a thriving information powered economy
- Builds on the conducive environment generated by the Geospatial Data Guidelines
- Lays down on overarching framework for holistic development of the Geospatial ecosystem
- Vision and Goal for improving the Geospatial sector with strategies for achieving them

# Vision & Goals of NGP 2022

01



**World Leader in Global Geospatial Space**

To make India a world leader in Global Geospatial space with best-in-class ecosystem for innovation

02



**Develop Coherent National Framework**

To develop a coherent national framework in the country and leverage it to move towards digital economy and improve services to citizens

03



**Enable Availability of Geospatial Data**

To enable easy availability of valuable Geospatial data collected utilizing public funds, to businesses and general public

04



**Thriving Geospatial Industry**

To have a thriving Geospatial industry in the country involving private enterprise

# Milestones Envisaged

01

## 2025 (Infrastructure)

Enabling Policy and Legal Framework

Improving availability and access to Geospatial data

Establishing an integrative interface for all Geospatial data for easy access and open sharing

Redefinition of National Geodetic Framework

Develop a High Accuracy Geoid for the entire country

Strengthen National and Sub-national Arrangements in Geospatial Information Management

03

## 2035 (Application)

High resolution Bathymetric Geospatial Data of inland waters and sea surface to support Blue Economy.

Mapping of sub-surface infrastructure & creation of National Digital twin for major cities and towns

02

## 2030 (Strengthening)

High Resolution Topographical Survey & Mapping

High Accuracy Digital Elevation Model (DEM) for the entire country

Develop a Geospatial Knowledge Infrastructure (GKI)

Enhance capabilities, skills and awareness to meet future needs of the country

# Strategy & Approach

To make Geospatial Data & Technology as agents of transformation to achieve SDG's

To bring efficiency in all sectors of economic activity

Instilling transparency & accountability at all levels of Governance



# Fit for Future Infrastructure

## Geospatial Data Infrastructure

- Policy mandates development of National Fundamental and Sectoral Geospatial Data Themes for various sectors
- NGDR and UGI will be two key pillars of India's Geospatial Data Infrastructure

## Mapping Infrastructure

- Map making has been deregulated to spur innovation in the country
- Encourage creation of quality maps and enable Indian companies to compete in the global mapping ecosystem



## Geospatial Knowledge Infrastructure

GKI will be the fulcrum encompassing Governance, Technology, Data and People with the fusion of Geospatial, 4IR and digital to deliver value

## Subsurface Infrastructure

- Clear plan on collecting and updating data to map the underlying infrastructure of cities in 3D mode.
- To include essential infrastructure water supply, energy and communication networks, sewerage and drainage networks

## National Digital Twin

- Geospatially aware Digital Twins will be built using precise positioning information and dynamic Geospatial Infrastructure
- Effective network of Global Navigation Satellite System (GNSS) systems or Positioning, Navigation and Timing (PNT) systems, Ground based CORS and Internet of Things (IoT) sensors will be developed.

# Geospatial Data Themes

01

Fundamental Data Themes as recognized by UN-GGIM are considered as National Fundamental Data Themes

02

Concerted effort by all agencies to increase improve availability and use of Geospatial data at all levels

03

Nodal Ministries / Departments to act as Lead agencies in creation and maintenance of Data Themes

04

Nodal Ministries / Departments to increasingly engage with private sector to meet requirements

05

Nodal Ministries / Departments to bear the cost for creation and development of Geospatial data relative to Themes

06

Data from various sources to be harmonized to seamlessly integrate with Geodetic Reference Framework

07

Consolidation of datasets into a National Topographic Template to meet the demand of updated, high resolution, accurate topographic data



# National Geospatial Data Registry (NGDR)

01

Efficient access to the National Fundamental and Sectoral Geospatial Data will be provided via a National Geospatial Data Registry (NGDR) acting as central repository

02

Unified Geospatial Interface (UGI) to provide a data querying and processing service for consumer-oriented products, applications, services & solutions utilizing data contained in the NGDR via structured data supply chains from partnering agencies

03

Survey of India in collaboration with BISAG-N and others shall develop and operate the NGDR and the UGI. Support from educational institutes and private sector will be taken under guidance from the apex body GDPDC

## 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.

# Institutional Framework

**Geospatial Data Promotion and  
Development Committee (GDPDC)**  
**Apex body** at the National level

***Department of Science & Technology (DST)***  
***Nodal Agency under guidance from GDPDC***

**GDPDC is the apex body for formulating and implementing  
guidelines, strategies and programs for promotion &  
development of Geospatial sector**

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**GDPDC to appropriately modify the concept and functioning of  
National Spatial Data Infrastructure to make it more robust,  
efficient and effective**

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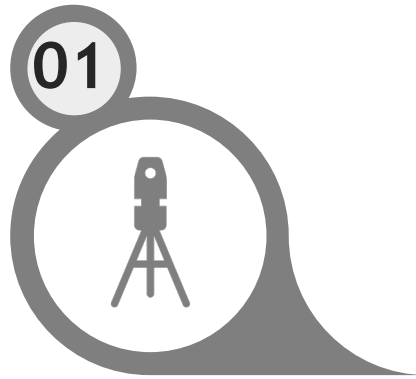
**DST to be the nodal Department for enacting the policy  
DST to constitute Sub-Committees and/or Working Groups  
to aid and support GDPDC in its objectives**

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**The Sub-committees/Working Groups to have appropriate  
representation from industry, academia and  
communities of interest**

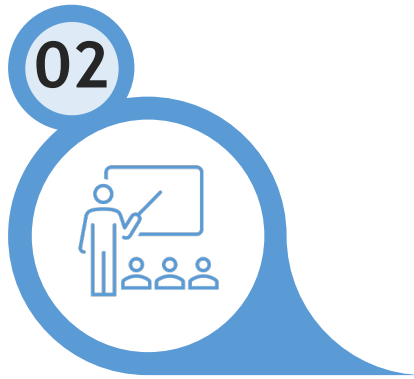


# Focus on Education, Skill & Capacity Building



## Geospatial Skill Council

Creation of Geospatial Skill Council in conjunction with National Skill Development Council (NSDC) to fill resource gap



## Geospatial Education

Development of quality Geospatial Science programs at all levels from schools to universities



## Centres of Excellence

Centres of Excellence to be developed with support from NIGST and IIRS providing highly specialized education in Geospatial Domain



## Capacity Training

Online courses to be provided via platforms like iGOT-Karmayogi and other learning platforms. Tie-ups with industry will be encouraged



## Surveyors' Certification

Surveyor Certification to be based on industry benchmarks and in-line with global practices

# Impetus towards Geospatial Enterprise

**Promoting Technology Innovation & Adoption**

**Geospatial Industrial Development Board**

**GDPDC Participation & Involvement**

**Incubation Centers/ Industry Accelerators**

**Geospatial Technology Parks**

**Opening up of the Domestic Geospatial Market**

National Fundamental Geospatial Themes – Responsibility Matrix		
S.No.	Responsibility	Nodal Ministry/Department (Organizations)
1	Geodetic Reference Frame	DST(Survey of India)
2	Orthoimagery	DST (Survey of India), DoS (space-based technology) (National Remote Sensing Centre)
3	Functional Areas (Administrative boundaries)	DST (Survey of India)
4	Geographical Names (Toponymy)	
5a	Elevation	
5b	Depth	Ministry of Ports, Shipping & Waterways (Inland Water), Ministry of Earth Science (Ocean & Sea)
6	Water	DoWR, RD, GR
7	Transport Networks	MoRTH, Ministry of Railwys, Ministry of Ports, Shipping & Waterways, MoCA
8	Buildings and Settlements	Ministry of Housing and Urban Affairs (Urban), Ministry of Panchayati Raj (Rural)
9	Land Cover and Land Use	DoS (National Remote Sending Centre), MoEFCCC (Forests) (Forest Survey of India)
10	Physical Infrastructure	MoHUA (Urban), MoPR (Rural)
11	Land Parcels	DoLR (Rural), MoHUA(Urban)
12	Addresses	MoHUA (Urban), MoPR (Rural)
13a	Geology	Ministry of Mines (Geological Survey of India)
13b	Soils	Department of Agricultural Research and Education (National Bureau of Soil Survey & Land Use Planning)
14	Population Distribution	Ministry of Home Affairs (Office of the Registrar General & Census Commissioner, India)

# Other Key Components – Responsibility Matrix

S.No.	Responsibility	Nodal Ministry/Department (Organizations)
1	Innovation	DST
2	NGDR & UGI	DST (Survey of India), MeitY (BISAG-N)
3	Satellite-related Earth Observation Infrastructure	DoS
4	Sub-Surface Infrastructure	MoHUA
5	National Digital Twin	MoHUA
6	PNT Infrastructure	DoS (IRNSS), DST (CORS, Survey of India)
7	Geospatial Education & Skill Development	Ministry of Skill Development and Entrepreneurship
8	Geospatial Enterprise	DPIIT

# Thank You

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In India, Technology is not an agent of exclusion.  
It is an agent of inclusion.

- PM Modi @ The UN World Geospatial  
International Congress 2022, India