

Draft National Geospatial Policy

1. Title

Government of India hereby promulgates a comprehensive National Geospatial Policy [NGP, or the Policy] to nurture and develop the geospatial ecosystem of the country to encourage spatial thinking, generate geospatial knowledge, strengthen geospatial infrastructure, promote use of Geospatial Data, Products, Solutions and Services [GDPSS] and boost geospatial entrepreneurship for socio-economic development of the nation.

2. Preamble

2.1 The Policy seeks to empower citizens and enterprises to create, access and use of geospatial data and information for addressing developmental needs of the country while also safeguarding its security interests. It provides for augmenting the geospatial ecosystem in the country, as well as globally, by encouraging geospatial knowledge generation, skill sets and expertise, strengthening of geospatial infrastructure, use of GDPSS and advancement of geospatial entrepreneurship for socio-economic development of the nation. In the process, the potential role of Geospatial Technology, Innovation and Information at every stage of Nation-building from education, skill development, incubation of ideas, investment and wealth creation would be unleashed. The Policy will support wider democratization of Geospatial data for enhanced commercialization with Value Added Services [VAS].

3. Need for the Policy

3.1 The regulatory paradigm in the Government through various acts, rules, policies and guidelines did not keep pace with the changing realities and rendered the geospatial sector in the country stifled. As a result, ingenuity and enterprise by individuals, industry, academia and research have not been able to realize their potential at various stages from education and expertise, innovation and ideas, investment and wealth creation. There is duplication of efforts and wastage of resources in the absence of availability of reliable geospatial data to access and use by various agencies, government and private. Though Geospatial sector in the country has been completely deregulated vide Department of Science and Technology [DST] guidelines dated 15.02.2021 (Annexure I), a comprehensive policy framework for the advancement of the sector is the need of the hour.

3.2 Geospatial sector in the country has the potential to contribute substantially to generation of employment, creation of knowledge, development of industry and overall socio-economic progress of the nation. Private ventures and enterprises have inherent ability to innovate when provided with an enabling environment. Hence, there is a need to develop a policy regime that enhances creation, access and use of Geospatial information and applications by Government, Citizens, Businesses, Non-Governmental

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Organizations [NGOs], Academia and Research for facilitating and catalyzing socio-economic development of the country without compromising its safety and security and that of its people.

3.3 The geospatial sector is increasingly being recognized as the technology platform to integrate across spatial and non-spatial technologies. When location is added to a data it unleashes its economic value manifold and when used in decision-making, the return multiplies several folds. Geospatial information needs to become a live and integral part of a project from initiation to planning, design, implementation, operations and maintenance. Innovative application of geospatial technology can be found in vast number of areas viz. land administration, urban development, utilities, disaster management, mining, water resources, banking and finance, etc. Geospatial world is moving from being data-centric to knowledge creation in a collaborative manner thus necessitating policy framework for standards and platform for accessing GDPSS and developing partnerships in a dynamic, user-friendly and real-time manner.

4. Principles

4.1 The Policy is guided by the following underlying principles in its intent and scope:

- Recognizing the potential of Geospatial Sector in knowledge and wealth creation and providing for an enabling environment
- Augment Geospatial education in the country by 'catching them young' and igniting geospatial spark in young minds from school level onwards
- Standardization and certification of courses and skill sets
- Policies and guidelines to be aligned with emerging technologies and ground realities
- Level playing field for Government and non- Government sectors
- Ease of doing business
- Encourage creation and incubation of ideas and start-ups
- Availability of real and near real time data and information
- Reduce duplication and wastage of efforts in producing Geospatial data
- Promote collaboration, including Public Private Partnerships, between various agencies in production and use of Geospatial data
- Survey of India [SoI] topographic data to be treated as common good and made easily available
- Geospatial data and information produced using public fund to be shared as per National Data Sharing and Accessibility Policy 2012 [NDSAP]
- Standardization of formats so that Geospatial data is available in an interoperable machine-readable form
- Assessment of sensitivity of Geospatial data and information for sharing to be done weighing security/strategic considerations against potential contribution to socio-economic development

- Moving away from the regime of prior security-vetting of Geospatial data and information to trusting businesses and individuals and their responsibility/accountability under various laws, rules and guidelines

5. Vision of the Policy

5.1 Location data is expected to play an ever-increasing role with more and more information likely to have a spatial component. Fourth Industrial Revolution advances in Machine Learning, Building Information Modelling [BIM], Digital twins, Internet of Things [IoT], 5G, Edge Computing, etc are transitioning hitherto data-centric infrastructure to knowledge-based network with emphasis on machine-readable real time data and analytics.

The vision of this Policy is to increase the availability of high-quality, timely and reliable data and information to address the National priorities and UN-Sustainable Development Goals. It is to address economic, social and environmental factors which depend on location information in a continually changing world and provide a basis and guide for developing, integrating, strengthening and maximizing geospatial information management and related resources. Holistic approach to development of entire geospatial ecosystem from skill building to capacity development, igniting geospatial spark in young minds, encouraging Research & Development [R&D], nurturing enterprise, enabling and empowering policy regime and laying of interoperable standards would lead to spatial thinking for effective and efficient governance interventions, flourishing industry and socio-economic progress.

6.1 Geospatial Education and Skill Development

6.1.1 India has a very good indigenous remote sensing program. Geospatial education is provided in around 200 universities/institutions. There are various courses being offered at graduate and post graduate levels by different colleges and universities. Industrial Training Institutes and National Skill Training Institutes offer certificate courses of varying duration ranging from weeks to over one year. Government realizes the importance of Geospatial Science in governance, planning and decision-making processes. However, there is lack of standardization of Geospatial curriculum with less emphasis on fundamentals of Geospatial Science. Geospatial data for R&D is not easily accessible. Geospatial thinking is not integrated in innovation system and absorption capacity for Geospatial knowledge is low.

6.1.2 National Task Force on Geospatial Education, constituted by Ministry of Human Resources Development (now Ministry of Education), in their 2013 report determined that Geospatial professionals are required in the country at three levels based on the

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depth of knowledge required, type of knowledge imparted and intended professional level of the students:

- Geospatial skilled workforce – a category of large number of human resources required to form the “pyramid-base” and who will be the large work-force for survey/mapping/GIS operators etc. This requirement should be met through special training programmes in Industrial Training Institutes [ITIs], polytechnics, technical institutions and the private industry.
- Technical Geospatial Professionals – are a large number of geospatial professionals who have specific training and knowledge for specific tasks – these form the “pyramid middle”. These are graduates with a specific 9-12 months’ training in Geospatial Technology for Geospatial Data Acquisition, Processing, Dissemination and Analysis and so on. This requirement should be met through specialised training courses by private industry and technical institutions in the country, like Indian Institute of Remote Sensing [IIRS] and National Institute for Geo-Informatics Science & Technology (NIGST) (formerly Indian Institute of Survey and Mapping [IISM]).
- A good number of geospatial experts, with a graduate/master’s degree in Geospatial Technology/Science and/or experts having adequate on-the-job experience in geo-spatial domain, form the “pyramid top” of the workforce. These would be the project managers/experts who are capable of handling geospatial projects independently and contributing to its success.

6.1.3 Expert Committee on Skill Council for Geospatial Sector constituted by Ministry of Skill Development and Entrepreneurship in their 2019 report observed that the major sectors using Geospatial Technology in India are agriculture, telecommunications, oil & gas, environmental management, forestry, public safety, infrastructure, logistics etc. It was also seen that the Geospatial activities cannot be confined to any particular sector and its scope goes far beyond the surveys sector relevant to the sectors like constructions, mining, IT, etc. The committee stated that though geospatial data is the foundation data for all the developmental activities, many times, the actual scope of the geospatial sector is not realised due to lack of awareness. The Committee also stated that as the stakeholders across sectors realise the utility and long-term cost effectiveness of using Geospatial tools and technologies, the geospatial industry is bound to expand by leaps and bounds in the coming years. Hence, considering all this and the fact that the use of geospatial data is across multiple sectors, the best option would be to have a separate Skill Council for Geospatial Sector in the long run. However, in the interim, till such time as the skill ecosystem for the sector actually attains a size worthy of a separate Sector Skill Council, it will be best to treat it as an independent awarding and certifying body as of now. Accordingly, the geospatial industry will directly connect with the National Skill Development Agency [NSDA] for National Skills Qualifications

Framework [NSQF] as a starting point. This system will be gradually developed to a stage where a separate Geospatial Sector Skill Council will be created.

6.1.4 Strong industry linkages will be used for both, providing training inputs and placement activities to complete the training lifecycle. Through active and intrinsic industry partnership a sustainable model will be developed. This aspect will enhance the credibility of the training programme and provide an avenue for greater industry exposure. Tie-ups with allied industries will be done to increase the placement spectrum of the trained youth. It will address the needs of both the job-seekers and job-providers.

6.1.5 The Policy will encourage development of international standard Geospatial Science education program from School till University level. Cutting-edge research in Geospatial Science and Technology for indigenous capacity building and identification of new areas of application and solution will be promoted. Research in emerging technologies involving not just sight but also other senses, such as hearing, touch, gestures, gaze, and other body movements that would allow humans to interact with geospatial information in more immediate and "natural" ways will be encouraged. The true value of geospatial technology, data and information would be unleashed when geospatial thinking could be inculcated among citizens, especially the students. Thus, geospatial thinking will be inculcated across the value chain of geospatial knowledge generation.

6.2 Surveyors' registration

6.2.1 Surveying is a highly technical job requiring knowledge as well as skill. However, at present there is no mechanism in the country to certify these kinds of skill sets. As a result, any person with limited knowledge or skill gets involved in the survey operations. This results in low quality output or even failure of projects. Mechanisms are in place to maintain the quality of other professions through various acts like Advocates Act, Indian Medical Council Act and Chartered Accountant Act. The country needs a similar mechanism to maintain the quality of survey professionals. Such mechanism will ensure the quality of training, competitiveness, updating the knowledge and skills of the survey professionals. Therefore, an Act will be legislated for registration of land surveyors.

7. Strengthening Geospatial Infrastructure

7.1 Mapping Infrastructure

7.1.1 There is an urgent need to augment the mechanism for completing and up-date of largescale maps for entire country. National Map Policy 2005 [NMP] envisioned making maps created by SoI, the National Mapping Agency, available to end-users by way of Open Series Maps. However, the situation could not really progress because of various restrictions which also did not allow private sector to grow and participate in map-making for the country. Given the magnitude of the task and ever decreasing period of update cycle required and to capitalize on resources from various sources in terms of

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manpower, knowhow and innovation, and to avoid duplication, it is imperative to synergize the efforts of various agencies, government or private and collaborate wherever possible. Now with the issue of DST guidelines dated 15.02.2021, map-making in the country has been completely deregulated and an enabling atmosphere has been created for different agencies to contribute towards development of high accuracy maps for the country. NMP has outlived its utility and the new framework of self-certification for acquisition and production of Geospatial data and services including map-making in place of security vetting, prior approvals and licenses brought out by DST guidelines is the way forward. DST guidelines issued from time to time shall be the single point reference for Geospatial data and services including map-making. DST shall take all measures to remove bottlenecks in the way of the growth and advancement of Geospatial data and services including map-making in the country.

7.1.2 SoI shall prepare the High Resolution National Topographic Database for the entire country and update it from time to time under the supervision of the Geospatial Data Promotion and Development Committee [GDPDC] (Annexure II). Database so prepared/updated shall be the Foundational data and shall be made available for general and specific use by citizens, businesses, academia, research, NGOs and Government. Any other Geospatial data, product, applications, solutions and services produced or developed by SoI shall also be made available for general and specific use by citizens, businesses, academia, research, NGOs and Government.

7.1.3 All agencies and individuals, within Government or non-government, producing Geospatial data and information will be encouraged to collaborate in mutually beneficial manner.

7.2 Positioning Infrastructure

7.2.1 Given the growing importance of precise location in data economy, there is an urgent requirement to establish nationwide Global Navigation Satellite Systems [GNSS] and Continuously Operating Reference Stations [CORS] infrastructure network. It will fulfil the need for instantaneous and reliable access to position and timing information that will enable a variety of scientific, civil, defense and commercial applications across the Indian landscape. In order to encourage the penetration of Indian Remote Navigation Satellite System [IRNSS] and Indian Space Based Augmentation Service, the implementation and usage of IRNSS and GAGAN in the larger domain of public services will be encouraged. Such measures will be key to support the users at reasonable cost and in achieving volumes for manufacturers and service providers.

7.3 Earth Observation Infrastructure

7.3.1 A plan will be formulated for building high-resolution satellite constellations to provide data with high revisit, establishing ground infrastructure for data acquisition, processing, generation of data products and reliable dissemination mechanism, constellation of microwave Synthetic Aperture Radar [SAR] satellite, high resolution

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panchromatic and multispectral remote sensing data with quick turn-around-time. Production and dissemination of such data sets will be harmonized with the Remote Sensing Data Policy.

7.4 National Foundation and Thematic Geospatial Data Themes

7.4.1 GDPDC will designate National Foundation Geospatial Data Asset data themes (Annexure III) or National Thematic Geospatial Data Asset data themes (Annexure IV) the primary topics and subjects for which the coordinated development, maintenance, and dissemination of geospatial data will benefit the Central and State Governments and other stakeholders which shall (1) be representations of conceptual topics describing digital spatial information for the Nation; and (2) contain associated datasets (with attribute records and coordinates) that are documented, verifiable, and officially designated to meet recognized standards; that may be used in common; and from which various geospatial data, information, products, services, applications, and solutions may be derived.

7.4.2 For each National Geospatial Foundational or Thematic Data Asset data theme, GDPDC will designate one or more Central or State Level Partnering Agencies as Lead Agencies with the following responsibilities:

7.4.2.1 The Lead Partnering Agency(ies) for a National Geospatial Foundation or Thematic Data Asset data theme will be responsible for ensuring the coordinated management of the data, supporting resources (including technology and personnel), and related services and products of the National Foundation or Thematic Geospatial Data Asset data theme.

7.4.2.2 The Lead Agencies will assist in fulfilling the responsibilities under the Subsection 7.4.2.1 with respect to a National Foundation or Thematic Geospatial Data Asset data theme. They will provide leadership and facilitate the development and implementation of geospatial data standards for the National Foundation/ Thematic Geospatial Data Asset data theme, with a particular emphasis on a data content standard for the National Foundation/ Thematic Geospatial Data Asset data theme, including by (i) assessing existing standards; (ii) identifying anticipated or needed data standards; and (iii) developing a plan to originate and implement needed standards with relevant community and international practices.

7.4.2.3 The Lead Agencies will provide leadership and facilitate the development and implementation of a plan for nationwide population of the data theme, which shall (i) include developing partnership programs with State Governments, institutions of higher education, private sector entities, other Central Government Agencies, and local governments; (ii) meet the needs of users of geospatial data; (iii) address human and financial resource needs; (iv) identify needs relating to standards, metadata for geospatial data within the National Foundation/ Thematic Geospatial Data Asset data theme, registration unto the National Data Registry [NDR] and the Geo-Platform; and

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(v) expedite the development of necessary National Foundation/ Thematic Geospatial Data Asset data themes.

7.4.2.4 The Lead Agencies will establish goals that support the strategic plan for the National Geospatial Data Information frame work

7.4.2.5 The Lead Agencies will, as necessary, collect and analyze information from users of geospatial data within the National Foundation/ Thematic Geospatial Data Asset data theme regarding the needs of the users for geospatial data and incorporate the needs of users in strategies relating to the National Foundation/ Thematic Geospatial Data Asset data theme.

7.4.2.6 The Lead Agencies as part of administering the National Foundation/ Thematic Geospatial Data Asset data theme will (i) designate a point of contact within the Agencies who shall be responsible for developing, maintaining, coordination relating to, and disseminating data using the NDR and the Geo-Platform; (ii) submit to the GDPDC a performance report, at least annually, that documents the activities relating to and implementation of the data theme, including progress in achieving the requirements; and comments, as appropriate, regarding the summary and evaluation of the performance report provided by the GDPDC and (iii) publish maps or comparable graphics online (in accordance with the mapping conventions specified by the GDPDC showing the extent and status of the data themes for which the Partnering Agency is the Lead Agency; (iv) encourage individuals and entities that are a source of geospatial data or metadata for geospatial data for the data theme to provide access to such data through the NDR and the Geo-Platform; (v) coordinate with the managing Partnering Agency of the NDR and the Geo-Platform; and (vi) identify and publish proven practices for the use and application of geospatial data of the Lead Agency .

7.5 Standards

7.5.1 In accordance with the provisions of the NSDI Resolution, 2006 and NDSAP, GDPDC will establish standards through the Bureau of Indian Standards [BIS] for each data theme.

7.5.2 GDPDC will develop and promulgate standards after consultation with a broad range of data users and providers and, to the maximum extent possible, use national and international standards adopted by voluntary and open standards consensus bodies.

7.5.3 New standards will be established only to the extent that such standards do not exist for adoption and use by the stakeholder communities.

7.5.4 The standards should include the content standards for metadata for geospatial data and, to the maximum extent practicable, shall be consistent with international standards and protocols.

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7.5.5 The National Geospatial Frame [NGF] and National Image Frame [NIF] shall be provided by the SoI and the National Remote Sensing Centre [NRSC], respectively, to facilitate exchange of geospatial data amongst stakeholders.

7.5.6 GDPDC will periodically review and update as necessary for the standards to remain current, relevant, and effective in consultation with the BIS.

7.6 National Data Registry and Geo-platform

7.6.1 In order to facilitate efficient provision of quality Geospatial Data, Products, Services and Solutions to the stakeholders, GDPDC will operate a National Data Registry [NDR] in order to enhance accessibility to, manage effective use of, and avoid, if any, duplicated collection or purchase of data towards establishing data supply chains and streamlining curated data delivery. NDR will be a commonly accessible set of registers/ catalogue of data sets and services, metadata, feature definitions, application schemas, code lists and persistent identifiers (correct identification of data) for streamlining provision of data supply chains for governance, businesses, and communities.

7.6.2 Using the geospatial data and metadata contained in the NDR and utilizing the data supply chains from the Central and State Level Partnering Agency Data Nodes, GDPDC will operate an electronic data querying and processing service, to be known as the Geo-platform for provision of consumer-oriented products, applications, services and solutions. It shall include download access to all open geospatial data directly or indirectly collected by the Central and State Level Partnering Agencies free or on the basis of payment of fees as determined by the respective Partnering Agencies from time to time. It may include geospatial data from a source other than a Partnering Agency, if determined appropriate by GDPDC. It shall not store or serve any proprietary information or data/ metadata acquired under a license by any of the Central or State Government Partnering Agency, unless authorized by the data provider.

7.6.3 GDPDC will designate an agency to serve as the managing Partner Agency for developing and operating the NDR and the Geo-platform under the guidance and supervision of the GDPDC in relation to their scope, functionality, and performance.

7.6.4 Although the NDR and the Geo-platform are intended to include all National Geospatial Data Asset and other Central/State Government datasets, nothing in this Policy shall be construed to prevent any Partnering Agency from presenting, providing, or disseminating data that is specific to the functions of the Partnering Agency; or targeted to geo-information consumers that directly interface with the services, portals, or other mechanisms of the Partnering Agency. On the advice of the GDPDC, Chair GDPDC may withhold from public disclosure any information the disclosure of which reasonably could be expected to cause damage to the national interest, security, sovereignty of the country.

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7.7 Sectoral Geospatial Infrastructure and Partnering Agency Responsibilities

7.7.1 Each National and State Level Partnering Agency will prepare, maintain, publish, and implement a strategy for advancing geographic information and related geospatial data and activities appropriate to the mission of the agency in support of the activities and plans of GDPDC. They will collect, maintain, disseminate, and preserve geospatial data such that the resulting data, information, products, applications, services, and solutions can be readily shared with other Central and State Government users and other stakeholders. They will register or publish their standards-based data sets, metadata and services in the National Data Registry along with related metadata to facilitate quick identification, search, discovery, access and ensure supply and delivery through a supply chain mechanism. They will ensure/certify the shared thematic data quality.

7.7.2 They will coordinate and work in partnership with other Central/ State Government Agencies, Panchayati Raj Institutions, Urban Local Bodies, institutions of higher education and the private sector to efficiently and cost effectively collect Geospatial data. They will promote the integration of geospatial data from all sources and will allocate resources to fulfill the responsibilities of effective geospatial data collection, production, and stewardship with regard to related activities of the Partnering Agency, and as necessary to support the activities of GDPDC. They will integrate, maintain, disseminate and preserve geospatial data, building upon existing data sets to the extent possible. They will search all sources, including the NDR, to determine if existing Central/ State Government or private geospatial data meets the needs of the Agency before expending funds for geospatial data collection. They will use geospatial information to make Central/State Government Geospatial information and services more useful to the public, enhance operations, support decision making and enhance reporting to the public and to the Governments.

7.7.3 They will participate in determining, when applicable, the content of the Negative List as prescribed by the NDSAP and whether the sharable data by the Agency can contribute to and become a part of the NDR of GDPDC. They will protect personal privacy and maintain confidentiality in accordance with prevailing policies, acts, rules & regulations. They will appoint a Nodal Officer to coordinate with the lead Partnering Agencies for collection, acquisition, maintenance, and dissemination of the National Geospatial Data Asset data themes used by the Partnering Agency. They will, to the maximum extent practicable, ensure that a person receiving Central/ State Government funds for geospatial data collection provides high-quality data.

7.8 Subsurface and Hydrographic Infrastructure

7.8.1 The subsurface or underground is complex environment which holds the vital functions of water and energy supply, communication systems, sewers and drainage.

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With advancement in technologies, miniaturization of sensors and speed of urbanization and infrastructure in country, a concrete strategy for mapping the subsurface infrastructure in cities in 3D format and collating or updating data in cases where it has already been done once will be developed.

7.8.2 With the growing importance of the Inland Water Resources and the continued emphasis being laid on nurturing the Blue Economy for the exploitation of the marine resources, there is a need to provide the necessary data underpinnings for their sustainable management. Such resources in the streams, ponds, lakes, rivers, and seas on and around the shore-lines are required to be surveyed and mapped in addition to the bathymetry of the under-water surfaces. GDPDC will facilitate the identification of such features and strategies for the development and maintenance of a suitable hydrographic data infrastructure.

8. Use of Geospatial Data, Products, Services and Solutions[GDPSS]

8.1 Geospatial Data, Products, Services and Solutions is multidisciplinary in nature and important in the context of national development. The Policy will promote different aspects of usage of GDPSS to empower citizens by providing geospatial data as per their requirement of content, scale, frequency and spatial resolution thus facilitating creation, management, access and availability of quality products, services and solutions.

8.2 The policy will be applicable to geospatial data-based products, solutions and services offered by government agencies, autonomous bodies, academic and research institutions, private organizations, NGOs and individuals.

8.3.1 In line with NDSAP, all GDPSS produced using public funds provided by Government through Ministries/Departments/Organizations shall be classified by respective Departments into one of the following three categories for their use and accessibility.

8.3.1.1 Open Access GDPSS: The Open Access GDPSS will be accessible in an easy, timely, user-friendly and web-based format, either free or at a cost to be decided by the Department, but without any process of registration/authorization.

8.3.1.2 Registered Access GDPSS: The Registered Access GDPSS will be accessible to the recognized institutions/organizations/public users as per terms of use laid down by the Department through a process of registration.

8.3.1.3 Restricted Access GDPSS: The GDPSS under restricted category will be accessible only through and under specific authorization.

8.3.2 While regulating access to any such GDPSS, a considered view would be taken by an authority in the concerned Department not less than that of Joint Secretary to Government of India, weighing safety and security concerns with that of the potential of that GDPSS to contribute towards enterprise development. Any such decision can be

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represented against before the GDPDC who shall decide the matter after considering views of Administrative Secretary of the concerned Department.

9. Geospatial Enterprise

9.1 The total worth of the geospatial market in India is projected to grow nearly 1 lakh crore by year 2029-30 as per industries estimate. A level playing field will be provided for government, non-government, academic, research and private sectors for ease of business and pro-actively engaging them in various spheres of geospatial domain for employment generation and contribution to the national economy. Proactive steps will be taken for stimulating geospatial technological innovation and supporting the growth and development of the geospatial industry in the country.

9.2 There are enormous employment generation opportunities in India for services such as surveying, map digitization, content development, Application Programming Interfaces [APIs] development, data analysis, etc. However, there is a dearth of trained workforce in the Indian geospatial industry. Rapid technology advancements result that those who have obtained primary training are not equipped to operate latest tools. The current workforce in geospatial industry is not equipped enough to train in emerging technologies like artificial intelligence, Machine Learning, etc. With the removal of restrictions and deregulation of geospatial data and services, and the policy framework being laid out, it is expected that demand and supply of skilled human resource would span out driven by market forces and there would be a spurt in availability of qualified professionals and their absorption by the industry.

9.3 There is a huge import dependency of Indian Geospatial industry for hardware and software requirement. Innovative schemes like Production Linked Incentive [PLI] would be brought out to encourage investment in Geospatial industry.

9.4 Any agency or individual, whether in Government or outside, shall be free to process the acquired geospatial data, build applications and develop solutions in relation to such data and use such data products, applications, solutions, etc. by way of selling, distributing, sharing, swapping, dissemination, publication, deprecation and destruction. Government may stipulate regulations prescribing thresholds for high accuracy data to be allowed only to Indian entities. There may be restrictions on for very sensitive attributes, but extreme care would be taken so as to not jeopardize ease of doing business.

9.5 Geospatial technology integration capacity across government departments to foster advance adoption levels as proposed under infrastructure section above will promote innovation. Skill development initiatives in partnership with government, industry, academia and research institutions and developing incubation models to support geospatial entrepreneurship across various sectors will promote Geospatial start-ups in the country. An integrated geospatial sector development framework for facilitating institutional and policy environment would expand geospatial market opportunities across industrial value chain.

10. Geospatial Data Promotion and Development Committee [GDPDC]

10.1 The Government of India through a Cabinet Resolution in 2006 (Annexure V) established the National Spatial Data Infrastructure [NSDI] for the purposes of acquiring, processing, storing, distribution and improving utilization of spatial data. National Data Spatial Committee [NSDC] headed by Minister of Science and Technology was constituted with representation from various ministries, department, organizations of the Government and experts from industry, academia and NGO's. An Executive Committee [EC] was also set up with Surveyor General of India as chair and Director, National Remote Sensing Center as co-chair.

10.2.1 With advancement in technology, emphasis has moved on from Data to Knowledge and fresh impetus is needed to reenergize and reinvigorate NSDI. NSDC will be rechristened as Geospatial Data Promotion and Development Committee [GDPDC] and will be reconstituted to make it a nimble body and with representation in tune with changing times. It shall perform the duties and functions of existing NSDC and those laid under this policy apart from other matters referred to it by the Government of India. Similarly, NSDI EC will be reconstituted as GDPDCEC to undertake implementing and executive functions for and on behalf of GDPDC. Composition and role of GDPDC and its EC shall be as given at Annexure II.

10.2.2 A collaborative framework is needed to reduce duplication of effort among agencies, improve quality and reduce costs related to geographic information, to make geographic data more accessible to the public, to increase the benefits of using available data, and to establish key partnerships with Central and State governments, academia and the private sector to increase data availability. GDPDC would strive towards providing a base or structure of practices and relationships among data producers and users that facilitates data sharing and use. There would be new ways of accessing, sharing and using geographic data that enable far more comprehensive analysis of data to help decision-makers choose the best course of action.

11. Making it happen

10.1 The core of Integrated Geospatial Information Framework would be cooperation and collaboration among various stakeholders. 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. The infrastructure to be developed and provided for this collaborative framework, though guided by the Policy and the GDPDC, will hinge upon active participation and fulfillment of responsibilities by the Partnering Agencies and other stakeholders like business and academia.

10.2 An audit of the compliance of the Partnering Agencies towards their obligations and responsibilities as envisaged under the Policy and the standards for Geospatial data, including metadata may be carried out on the recommendations of the GDPDC. The GDPDC may bring findings of such audits to the notice of appropriate Government

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for their consideration for release of budgetary support to the concerned Agency.

10.3 The GDPDC as constituted by the Government will be responsible for implementation of the Policy, its various provisions, formulation of guidelines and steering overall the course of the development of Geospatial Ecosystem in the Country. They will be empowered to undertake revisions of the Policy as required from time to time. DST shall continue to be the Nodal Department of the Government for the Policy.

10.4 Appropriate legislation to enforce different provisions of the Policy will be brought in due course. However, existing laws like Indian Penal Code, IT Act, Corporate laws, data and privacy laws, etc., (Annexure VI) will be applicable as required.

10.5 Budgetary provisions and appropriate support for Departments/organizations by Government would be necessary for effective implementation of the Policy and use and development of Geospatial Data, Products, Solutions and Services by various stakeholders.

10.6 The Policy will supersede the provisions of any existing policy, guidelines and instructions (Annexure VII) in the matter to the extent such provisions are contrary to the provisions laid out under the Policy. Issues arising out of interpretation of the Policy would be referred to Secretary, DST whose decision shall be final.

Annexure I

DST guidelines dated 15.02.2021

Annexure II

Geospatial Data Promotion and Development Committee (under process)

Annexure III

National Foundation Data Asset Data Themes

1. Geodetic Reference System
System for uniquely referencing spatial information in space as a set of coordinates (x, y, z) and/or latitude and longitude and height, based on a geodetic horizontal and vertical datum
2. Elevation and Depth
Digital elevation models for land, ice and ocean surface. Includes terrestrial elevation, bathymetry and shoreline
3. Geographical Names
Names of areas, regions, localities, cities, suburbs, towns or settlements, or any geographical or topographical feature of interest to end user/ stakeholder
4. Administrative Boundaries (functional areas)

Boundaries or Units of administration, dividing areas where different functional authorities have and/or exercise jurisdictional rights, for local, regional and national governance

5. Buildings and settlements

A building refers to any structure permanently constructed or erected on its site usable for the protection of humans, animals, things or the production of economic goods. Settlements can be considered to be collections of buildings and associated features where a community carries out socio-economic activities

6. Land Use & Land Cover

Physical and biological cover of the earth's surface including artificial surfaces, agricultural areas, forests, wetlands, water bodies

7. Transport Networks

Road, rail, air and water transport networks and related infrastructure, includes links between different networks

8. Water

Extent and conditions of all water features including rivers, basins, sub-basins, lakes and marine features

9. Land Parcels and Properties

Areas defined by cadastral or property registers or equivalent

10. Utilities

Industrial production sites, physical infrastructure facilities (e.g. airports, warehouses, shopping/ market complex etc.), environmental monitoring facilities (e.g. for observation and measurement of air, water, noise pollution etc.); agricultural and aquaculture facilities (e.g. farming equipment and production/ marketing including irrigation systems, greenhouses etc.), governmental service delivery points such as fair price shops, schools and hospitals

11. Population distribution

Geographical distribution of people including population characteristics

12. Addresses

An address is a structured label – usually containing a property number, a road name and a locality name – used to identify a plot of land, a building or part of a building, or some other construction together with geographical coordinates. They can be Postal and non-postal. They are often used as a proxy for other data themes e.g. land parcels.

13. Geology/ soils

Geology characterized according to composition and structure, includes bedrock, aquifers, geomorphology, mineral resources and soils

14. Ortho-imagery

Geo-referenced image data of the Earth's surface, from satellite or airborne sensors

Annexure IV

1999
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National Thematic Data Asset Data Themes

1. Agro-climatic zones ()
Areas of relatively homogeneous agro-climatic conditions with common characteristics
2. Land use ()
Territory characterized according to its current and future planned functional dimension or socio-economic purpose (e.g. residential, industrial, commercial, agricultural, forestry, recreational)
3. Health and diseases ()
Geographical distribution of dominance of pathologies (allergies, cancers, respiratory diseases, etc.), information indicating the effect on health (epidemiological indicators, decline of fertility, occurrence of epidemics) or well-being of humans (fatigue, stress, etc.) linked directly to (air/ water pollution, chemicals, depletion of the ozone layer, noise, etc.) or indirectly (food, genetically modified organisms, etc.) to the quality of the environment
4. Development statistics ()
Development-related statistical information of Economic Censuses along with the underlying units for their dissemination or use
5. Mineral occurrences ()
Mineral resources including metal ores, industrial minerals, etc., where relevant including depth/height information on the extent of the resource
6. Soil profile and resources
Soils and subsoil characterized according to depth, texture, structure and content of particles and organic material, stoniness, erosion, where appropriate mean slope and anticipated soil moisture (water storage capacity)
7. Atmospheric conditions
Physical conditions in the atmosphere that includes spatial data based on measurements, on models or on a combination thereof and includes measurement locations
8. Natural vegetation
All forest resources covering forest densities, forest types, and other aspects of natural vegetation
9. Tourism ()
Places of tourist attraction or wild life sanctuaries
10. Protected sites ()
Area designated or managed within the framework of an international commitment or Central or State Government legislation to achieve specific conservation objectives
11. Natural risk zones ()
Vulnerable areas characterized according to natural hazards (all atmospheric, hydrologic, seismic and wild fire phenomena that, because of their location, severity,

- and frequency, have the potential to seriously affect society), e.g. cyclones, floods, landslides and subsidence, avalanches, forest fires, earthquakes
12. Energy resources ()
Energy resources including hydrocarbons, hydropower, bio-energy, solar, wind, etc., where relevant including depth/height information on the extent of the resource

Annexure V

NSDI Cabinet Resolution 2006

Annexure VI

List of relevant laws (illustrative, not exhaustive)

1. Indian Penal Code
2. IT Act 2000 as amended from time to time
3. GSR 1222 [No.227-CUSTOMS/F. No. 405/3/80-CUS.III.] – export of maps prohibition – dated 29.11.1980
4. Companies Act 2013
5. Civil Aviation Requirements (CAR), DGCA dated 27.08.2018
6. The Criminal Law Amendment (Amending) Act 1990 regarding wrong depiction of maps

Annexure VII

List of relevant policies, guidelines and instructions (illustrative, not exhaustive)

1. Remote Sensing Data Policy 2011
2. Remote Sensing Data Policy 2012
3. National Data Sharing and Accessibility Policy 2012
4. NDSAP MeitY guidelines 2015
5. Ministry of Defense instructions regarding Aerial Survey/Airborne Remote Sensing dated 01.05.2006
6. National Map Policy 2005
7. Ministry of Defense guidelines dated 05.12.2017 regarding restriction of sale, publication & distribution of maps

Sub: Guidelines for acquiring and producing Geospatial Data and Geospatial Data Services including Maps

Preamble

Location information is an integral part of the modern digital ecosystem and critical for unlocking economic, social and environmental opportunities for sustainable growth and development of the country. It is critical to the success of modern industry offering location-based services such as e-Commerce, delivery and logistics and urban transport. It is also essential for more traditional sectors of the economy such as agriculture, construction and development and mines and minerals.

2. Geospatial data which includes location information are data about the natural or man-made, physical or imaginary features whether above the ground or below, boundaries, points of interest, natural phenomena, mobility data, weather patterns, statistical information, etc. There has been immense progress over the years in technology for capture of geospatial data through ground-based survey techniques, photogrammetry using manned/unmanned aerial vehicles, terrestrial vehicle mounted Mobile Mapping System, LIDAR, RADAR Interferometry, satellite-based remote sensing, mobile phone sensors and other techniques.

3. The Government of India acknowledges that the availability of comprehensive, highly accurate, granular and constantly updated representation of Geospatial Data will significantly benefit diverse sectors of the economy and will significantly boost innovation in the country and greatly enhance the preparedness of the country for emergency response.

Atmanirbhar Bharat

4. The availability of data and modern mapping technologies to Indian companies is also crucial for achieving India's policy aim of Atmanirbhar Bharat and the vision for a five trillion-dollar economy. India presently relies heavily on foreign resources for mapping technologies and services. Liberalisation of the mapping industry and democratization of existing datasets will spur domestic innovation and enable Indian companies to compete in the global mapping ecosystem by leveraging modern geospatial technologies. Locally available and locally relevant Maps and Geospatial Data would also help in improved planning and management of resources and better serve the specific needs of the Indian population.

5. Blue economy in India is another sunrise issue for development experts where Geospatial Data is expected to play a potentially important role. Fisheries, deep sea mining, and offshore oil and gas make up a large section of India's blue economy. The Sagarmala project, launched by the Government of India, is the strategic initiative for port-led development. India will soon launch an ambitious 'Deep Ocean Mission' that envisages exploration of minerals, energy and marine diversity of the underwater world, a vast part of which still remains unexplored.

Bathymetric Geospatial Data would be crucial for attainment of a flourishing and vibrant blue economy for the country and would require active participation of private sector in acquisition and their use apart from traditional agencies like Navy, etc.

6. With the advent of publicly available geospatial services, a lot of Geospatial Data that used to be in restricted zone are freely and commonly available now and some of the policies/guidelines that used to regulate such information have been rendered obsolete and redundant. What is readily available globally does not need to be regulated.

Definitions:

7. (a) Positional data: Latitude, longitude and elevation/depth of a point or its x, y & z co-ordinates in the territory of the Republic of India.
- (b) Attribute data: Any data that when associated with Positional Data gives any additional meaning to it.
- (c) Geospatial Data: Positional data with or without attribute data tagged, whether in the form of images, videos, vector, voxel and/or raster datasets or any other type of geospatial dataset in digitized or non-digitized form or web-services.
- (d) Map: Symbolic representation of real-world objects, regions or themes on a given scale which was generally published in paper form but now also available as web-map-service.
- (e) Geospatial Technology: Any technology including but not limited to Aerial / UAV Photogrammetry, Aerial / UAV LIDAR, drones, Radar Interferometry, street view or by other means of ground survey, satellite-based remote sensing techniques, AI, underwater mapping, and others.
- (f) Indian Entity: Any Indian citizen, Government entities, Societies registered under applicable statutes, statutory bodies, Autonomous Institutions of the Government, or any Indian company or Indian LLP owned by resident Indian citizens or any Indian company or Indian LLP controlled by resident Indian citizens (as defined in the Explanation to Rule 23 of the Foreign Exchange Management (Non-Debt Instrument) Rules, 2019).

Liberalisation of acquisition and production of geospatial data and geospatial data services including maps:

8. Accordingly, the following guidelines on acquiring and producing geospatial data and geospatial data services are issued in supersession of anything to the contrary on the subject issued from time to time by Department of Science and Technology (DST), Ministry of Defense (MoD) and/or any other Department of Government of India vide their various official memoranda and guidelines. The Guidelines issued by DST on Geospatial Data and Maps would be the single point reference on the subject.

- i. These guidelines will be applicable to Geospatial Data, Maps, products, solutions and services offered by government agencies, autonomous

bodies, academic and research institutions, private organizations, Non-Governmental Organizations and individuals.

- ii. (1) Save as specifically provided for under these guidelines, there shall be no requirement for prior approval, security clearance, license or any other restrictions on the collection, generation, preparation, dissemination, storage, publication, updating and/or digitization of Geospatial Data and Maps within the territory of India. Individuals, companies, organizations, and Government agencies, shall be free to process the acquired Geospatial Data, build applications and develop solutions in relation to such data and use such data products, applications, solutions, etc by way of selling, distributing, sharing, swapping, disseminating, publishing, deprecating and destructing. Self-certification will be used to convey adherence to these guidelines.
- (2) Nothing contained in these guidelines shall confer on any individual or an entity a right to physical access including through aerial/territorial water route to any establishment, installation or premises to which access is restricted by the Ministry/Department concerned as the owner of such premises.
- iii. (a) There shall be a negative list of sensitive attributes that would require regulation before anyone can acquire and/or use such attribute data. DST will notify this list on its website along with stipulated regulations after consultation with departments concerned.
- (b) The negative lists mentioned above will be specific to very sensitive attributes and care would be taken so as to minimize restrictions in order to boost the Ease of Doing Business. The list may be regularly updated as required.
- (c) DST will constitute a Geospatial Data Promotion and Development Committee with representations from relevant departments that would decide any issue arising out of finalization of negative attributes lists and the regulations proposed on those attributes. The Committee's mandate will include promotion of activities related to collection, generation, preparation, dissemination, storage, publication, updating and/or digitization of Geospatial Data.

Explanation:

1. There will not be any negative list of prohibited areas.
 2. The negative list of attributes will include attributes that shall not be marked on any Map i.e. no person or legal entity shall identify or associate any location on a Map with a prohibited attribute.
- iv. (a) For the purposes of these guidelines, the threshold value for:

1. On-site spatial accuracy shall be one meter for horizontal or Planimetry and three meters for vertical or Elevation.
 2. Gravity anomaly shall be 1 milli-gal.
 3. Vertical accuracy of Bathymetric data in Territorial Waters shall be 10 meters for up to 500 meters from the shore-line and 100 meters beyond that.
- (b) For the attributes in the negative list, different threshold values as well as regulations as warranted can be laid down. The thresholds shall be regularly reviewed and amended as necessary by DST.
- v. Indian Entities, whether in Government or outside, will be free to acquire, collect, generate, prepare, disseminate, store, share, publish, distribute, update, digitize and/or create Geospatial Data, including Maps, of any spatial accuracy within the territory of India including underwater within its territorial waters by using any Geospatial Technology, subject to regulations on attributes in the negative lists.
 - vi. (a) Ground truthing/verification, access to Indian ground stations and augmentation services for real time positioning (Continuously Operating Reference Stations (CORS), etc) and their data shall be made available without any restrictions and with the ease of access to Indian Entities only.

(b) Terrestrial Mobile Mapping survey, Street View survey and surveying in Indian territorial waters shall be permitted only for Indian Entities irrespective of accuracy.
 - vii. Maps/Geospatial Data of spatial accuracy/value finer than the threshold value can only be created and/or owned by Indian Entities and must be stored and processed in India.
 - viii. Foreign companies and foreign owned or controlled Indian companies can license from Indian Entities digital Maps/Geospatial Data of spatial accuracy/value finer than the threshold value only for the purpose of serving their customers in India. Access to such Maps/Geospatial Data shall only be made available through APIs that do not allow Maps/Geospatial Data to pass through Licensee Company or its servers. Re-use or resale of such map data by licensees shall be prohibited.
 - ix. Digital Maps/Geospatial Data of spatial accuracy/value up to the threshold value can be uploaded to the cloud but those with accuracy finer than the threshold value shall only be stored and processed on a domestic cloud or on servers physically located within territory of India.
 - x. There shall be no restriction on export of Maps/Geospatial Data of spatial accuracy/value up to the threshold value except for attributes in the negative lists. Department of Revenue, Government of India will make necessary amendments in GSR in this regard.

- xi. All Geospatial Data produced using public funds, except the classified geospatial data collected by security/law enforcement agencies, shall be made easily accessible for scientific, economic and developmental purposes to all Indian Entities and without any restrictions on their use. Such access shall be given free of any charges to Government agencies and at fair and transparent pricing to others. For attributes in the negative lists, appropriate regulations will be laid down separately. The Government of India shall encourage crowd sourcing efforts to build Maps by allocating public funds towards these efforts as appropriate.
- xii. The Survey of India (Sol) and other government agencies producing or owning Maps and Geospatial Data, shall take immediate measures to simplify procedures, revise/abolish various forms/licenses and use modern techniques such as cloud, open APIs and others to make its data accessible online in a useful format.
- xiii. For political Maps of India of any scale including national, state and other boundaries, Sol published maps or Sol digital boundary data are the standard to be used, which shall be made easily downloadable for free and their digital display and printing shall be permissible. Others may publish such maps that adhere to these standards.
- xiv. All citizens, companies, and organizations including Government agencies, producing Geospatial Data and information shall be encouraged to collaborate in mutually beneficial manner and work towards open-linked Geospatial Data. Government agencies will make all efforts to collaborate for acquiring Geospatial Data.
- xv. Any violation of these guidelines will be dealt with under the applicable laws.

MINISTRY OF SCIENCE AND TECHNOLOGY
(DEPARTMENT OF SCIENCE AND TECHNOLOGY)

New Delhi, the 13th June 2006

RESOLUTION

CONSTITUTION OF NATIONAL SPATIAL DATA
INFRASTRUCTURE

No. SMP/25/003/05.—1. Whereas spatial data infrastructure is a collection of technologies, policies and institutional arrangements to facilitate availability of and access to spatial data, acquired and held by different agencies and organisations to a vast, diverse and ever growing community of users and promote the use of the spatial data infrastructure at community, local, state, regional and national levels for sustained economic growth;

And whereas the Government of India propose to establish a national infrastructure known as the National Spatial Data Infrastructure ("NSDI") for the purposes of acquiring, processing, storing, distributing and improving utilisation of spatial data which would be a gateway of spatial data being generated by various agencies of the Government of India;

And whereas the data producing agencies of the Government of India shall be initially the contributing agencies to the NSDI and that Government through the National Spatial Data Committee ("NSDC") shall facilitate participation of other data producing agencies for such purpose;

Now therefore the Government of India has accordingly decided to establish NSDC with the composition, functions and powers as specified in this resolution:—

2. Constitution of the National Spatial Data Committee (NSDC):

The NSDC shall consist of the following permanent Members (ex-officio capacity):

(i) Minister of Science and Technology, GoI	President
(ii) Secretary, Department of Science & Technology, GoI	Member
(iii) Secretary, Department of Space, GoI	Member
(iv) Secretary, Ministry of Home Affairs, GoI	Member
(v) Secretary, Ministry of Defence, GoI	Member
(vi) Secretary, Ministry of Water Resources GoI	Member
(vii) Secretary, Department of Land Resources GoI	Member
(viii) Member Secretary, Planning Commission	Member

(ix) Secretary, Ministry of Environment & Forest, GoI	Member
(x) Secretary, Ministry of Urban Development, GoI	Member
(xi) Secretary, Department of Ocean Development, GoI	Member
(xii) Secretary, Ministry of Mines, GoI	Member
(xiii) Secretary, Ministry of Information Technology, GoI	Member
(xiv) Registrar-General, Census of India	Member
(xv) Surveyor General, SOI/Director, NRSA	Member-Secretary

On and from such date and term as may be decided by the NSDC, the NSDC can appoint the following additional Members:

- maximum of 5 (five) Secretary rank officials of the Government of India or State Government departments whose activities are related to the NSDI;
- maximum of 5 (five) Experts having experience and qualifications in the fields related to NSDI—Geographical Information System (GIS), Remote Sensing, Digital Mapping, Photogrammetry, Spatial and Non-spatial databases, Information Technology, Networking, Software, Business Management, Law and other related fields;
- maximum of 5 (five) representatives from industry, academia and NGO's.

3. Functions and Powers of the NSDC

The NSDC shall be the apex national authority for formulating and implementing appropriate policies, strategies and programmes for the establishment, operation, management of the NSDI and utilisation and any other activities related to spatial data in the country. As part of this, the NSDC will:

- determine the requirement of spatial data in the country and require the creation or collection of spatial data to fill such requirement;
- formulate and position policies on all aspects related to the NSDI — including its establishment, access, pricing etc.;
- decide and arbitrate on issues relating to spatial data generation and its availability in the country;
- promote and enable investment in the spatial business sector and to create an environment that encourages competitive excellence;
- promote the development of human resources in the spatial data sector by encouraging existing training

institutes, universities, institutions offering specialized courses, etc. to undertake human resources development activities for NSDI;

- (vi) promote advanced research related to the NSDI activities and enable an ambience of R&D for NSDI in the country;
- (vii) require any Member, persons, entities or organisations to provide access to any data at such costs as may be reasonable;
- (viii) aid and advise the Central Government on any matter related to or connected with the NSDI;
- (ix) enter into appropriate arrangement with any third party to undertake any specific activity connected with or related to any of the activities of the NSDI, including marketing, data generation, data assimilation, access, consulting, commercial exploitation of any data, etc;
- (x) do all such acts and deeds that may be necessary, beneficial or otherwise desirable to achieve the objectives of the NSDI.

4. Establishment of Executive Committee of NSDI :

The NSDI Executive Committee shall have the following members (ex-officio capacity) :

(i) Surveyor General of India	Chairman
(ii) Director, National Remote Sensing Agency	Co-Chairman
(iii) Joint Secretary, Department of Science & Tech.	Member
(iv) Joint Secretary, Department of Space	Member
(v) Director General, Geological Survey of India	Member
(vi) Director, Nat. Bur. of Soil Survey and Landuse Planning	Member
(vii) Director, Forest Survey of India	Member
(viii) Chairman, Central Ground Water Board	Member
(ix) Chairman, Central Water Commission	Member
(x) Director-General, India Meteorology Department	Member
(xi) Director-General, National Informatics Centre	Member
(xii) Representative of Registrar-General, Census of India	Member
(xiii) Director, National Atlas and Thematic Mapping, (NATMO)	Member
(xiv) Chief Executive Officer, NSDI	Member-Secretary

In addition, the NSDC may appoint for a specified term, on recommendation of the Chairperson of NSDI Executive Committee, Eight (8) Experts having experience and qualifications in the fields related to NSDI — Geographical Information System (GIS), Remote Sensing, Digital Mapping, Photogrammetry, Spatial and Non-spatial Database, Information Technology, Networking, Software, Business Management, Law and other related fields.

5. Functions and Powers of the Executive Committee :

NSDI Executive Committee shall undertake any and all implementing and executive functions for and on behalf of the NSDC including functions as may be prescribed by regulations framed by the NSDC in this connection or otherwise as directed or delegated upon the NSDI Executive Committee by the NSDC. Such functions and powers would include :

- (i) To define and ensure implementation of national standards for NSDI activities and to enable a smooth establishment and access to NSDI;
- (ii) To constitute technical, financial or other sub-committees to establish the NSDI and any other objectives and functions under the Act;
- (iii) To define and formulate rules and procedures for enabling NSDI databases, servers, networks and access rules and filters;
- (iv) To aid and advise the NSDC on any matter related to or connected with its functions and the NSDI;
- (v) To advise the NSDC on expanding the scope of NSDI by including newer spatial and non-spatial data and enabling a larger participation in NSDI;
- (vi) To undertake activities to attract new entrants, private sector participation and stimulate innovation related to NSDI;
- (vii) To encourage and set into operations value-added-services relating to the usage of NSDI for supporting developmental and economic activities;
- (viii) To do all such acts and deeds that may be necessary, beneficial or otherwise desirable to achieve the objectives of the NSDI.

6. Rules & Procedures :

The NSDC shall have power to frame rules and procedures for the conduct of its business. The Committee shall meet at such time and places as fixed by the Chairman.

ORDER

Ordered that a copy of the Resolution be communicated to all the Ministries/Departments, Government of India, all the State Governments and Scientific Institutions in the country.

Ordered also that the Resolution be published in the Gazette of India for general information.

SANJIV NAIR
Jt. Secy.