

**GOVERNMENT OF INDIA**  
**MINISTRY OF SCIENCE & TECHNOLOGY**  
**DEPARTMENT OF SCIENCE & TECHNOLOGY**  
**NATIONAL GEOSPATIAL PROGRAMME (NGP) DIVISION**  
[dst.gov.in](http://dst.gov.in)

**Call for proposal in Geospatial Science Development**

**Introduction**

The Department of Science and Technology, through its National Geospatial Programme (*erstwhile* NRDMS), has been catalyzing the development of various components of the National Geospatial Ecosystem viz. Geospatial Science and Technology, Policy, Solutions, Capacity Building, Entrepreneurship, and International Cooperation. The ultimate goal is to strengthen sustainable socio-economic development at all levels of governance.

To further enhance the Geospatial Science capabilities of the country and to realize this vision, the department is now inviting proposals from organizations located in different geographic areas for the strengthening of Geospatial Science in the Country.

**Focus Areas\***

Financial support will be provided to selected organizations focusing on Geospatial Science & Development. The details are as follows (only indicative):

**Geospatial Science:**

**A. Geospatial Data Science:**

1. Assessing the quality of geospatial data
2. Optimization: Optimization techniques to solve complex geospatial problems, such as facility location, route planning, and spatial allocation of resources
3. Generalization of spatial data: namely map generalization in various thematic areas; Methods and Algorithms for map generalization
4. Advanced geospatial modelling, simulation and visualization in various thematic areas
5. Geospatial Big Data Analysis / Knowledge Graphs:
  - Spatio-temporal knowledge Graph representation
  - Algorithms for inferencing on geospatial knowledge graphs
6. High performance Big Data Computing:
  - Big Geospatial Data Cube Development and Analytics
  - Geospatial Embedded High-Performance Computing
  - Geospatial Data/ Image Compression Techniques
7. Exploratory Spatial Data Infrastructures:

- Integration of Geospatial Natural Language Processing (NLP) for seamless interaction with Spatial Data Infrastructures
- Using graph-based approaches for exploration

#### **B. Improved geodetic/ photogrammetric/ remote sensing positioning**

- Cartography: Planetary Cartography, Land Consolidation and Cadastral Mapping
- Ubiquitous mapping (navigation in indoor and GNSS denied environments)
- Physics of electromagnetic waves and their interaction with the Earth's surface and atmosphere
- Geodesy:
  - i) Geodetic Framework: Geoid Modelling, Reference Systems and Frames, Geodetic Datums (geodetic infrastructure), Space Geodetic Techniques (VLBI, SLR, DORIS, GNSS)
  - ii) Gravity Data: Terrestrial, airborne and satellite gravimetry (static and time variable)
  - iii) Navigation System: Inertial Navigation System, Relativistic Geodesy with Clocks.
  - iv) Geo-kinematics

#### **C. Others**

- Interoperability in map projections and associated error propagation
- Cognitive Issues in Geographic Information Visualization
- Spatial Econometrics: Such as spatial regression analysis, spatial econometric modelling, and spatial panel data analysis etc.

*\*Focus areas are only indicative*

#### **Who can submit the proposal?**

The proposal can be submitted by the faculty members, scientists, engineers, technologists in permanent positions working in UGC recognized universities, national institutions of research and research management etc. having requisite experience in the field of Geospatial.

Last date for **ONLINE** receipt of proposals is 18<sup>th</sup> June, 2023.

#### **Duration and Fund Support**

The proposal may be supported preferably for 3 year and upto maximum duration of 05 year.

#### **How to submit the proposal?**

The proposals should be submitted as a singly pdf document at <https://onlinedst.gov.in/> in proper format as provided at <https://onlinedst.gov.in/> and duly forwarded by Head of the Institution/ University.

Non-governmental organization (Deemed and private universities and research and development organization) should be registered at the [ngodarpan.gov.in](http://ngodarpan.gov.in) portal of the Government of India before submission of the proposal.

For any other query and submission of proposal please contact:

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**NOTE: The e-version of the proposal duly endorsed from Head of the organisation should be submitted as a single pdf document under Geospatial Science scheme of NGP Division (*erstwhile* NRDMS), at <https://onlinedst.gov.in/>.**

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