

The R & D project proposal (softcopy) in proper format following the guidelines and duly forwarded by Head of the Institute / University should be submitted ONLINE at <https://onlinedst.gov.in/>. Non-governmental organizations (Deemed and private universities and research & development organization) must register at ngodarpan.gov.in before submitting the proposals. Last date of submission is 18th June 2023.

Note for Call for proposal at Annexure-I

FORMAT FOR SUBMISSION OF R & D PROJECTS in

GEOSPATIAL SCIENCE

PART 1.0 (General Information)

- 1.1 Project title :
- 1.2 Priority area and sub-area : As per the Advertisement/Call
- 1.3 Duration (in months) :
- 1.4 Total cost :
- 1.5 FE component :
- 1.6 Principal Investigator :
- 1.7 CO- Principal Investigators :
- 1.8 Designation :
- 1.9 Category (General, SC/ST/OBC/Others)
- 1.10 Date of Birth :
- 1.11 Sex :
- 1.12 Telephone, fax :
- 1.13 Depart. & Institution Name:
- 1.14 Institution Type (Whether Govt, Private, NGO):
- 1.15 Address :

1.16 Collaborating Institutions:

2.0 State-of-art in the proposed field of Geospatial Science (supported by literature survey with international and national status):

3.0 Project summary (About ¾ page, brief description of the work):

4.0 Key words:

5.0 Gap in the context of State of Art which aspects are planned to be addressed as focus areas mentioned in the Annexure I:

6.0 Objectives (should be well focussed and point wise not to include activities):

6.1 How will the project outputs dovetail into strengthening the nation’s geospatial knowledge innovation ecosystem? (Expected Final deliverables? Output in the form of publications in the Journals of high repute):

6.2 Proposal focuses on Geospatial basic Science or Geospatial Applied Science. Please clarify (not more than two lines):

6.3 Specialist consulted or likely to be consulted (list of three experts in the area where project proposal can be sent for reviewing):

7.0 Work plan:

| Obj ectiv es. | Activity | Start month | End month | Deliverable/Output |
|------------------------------|-----------------|------------------------|------------------|---------------------------|
| | | | | |
| | | | | |

8.0 Methodologies to be followed (Preferably through a work flow diagram):

9.0 Risks (in terms of success and failure):

10.0 Years of Experience in Geospatial Science field Development (Supported by evidence viz. Patents/Publications in International-National Journals/ Books /Assignments/List of Research Projects/ H-Index etc.):

11.0 Account details for fund transfer viz. Name of the Bank (must be government bank),Account holder name, Savings Bank Account Number, Name of the Branch, Branch Address, IFSC Code and MICR Code:

15.0 Budget estimates (mapped on the proposed activities and must provide justification of Each Budget Heads):

| Sl.no. | Item | Amount (Rs.) |
|---------------|---------------------------------------------------------|---------------------|
| | Budget for Hardware and software (non-recurring) | |
| | Budget for Manpower/ salaries/ wages | |
| | Budget for consumable materials | |
| | Budget for travel | |
| | Budget for miscellaneous costs: | |
| | Institute Overhead (10-8 % of the total) | |

16.0 Biodata of investigators and co-investigators:

i. NAME:

ii. DATE OF BIRTH:

iii. Full address, email and other contact details

iv. ACADEMIC QUALIFICATIONS (Research Publications and other important achievements in the proposed area. List of relevant work done in the past and research publications):

v. PROFESSIONAL CAREER:

vi. ASSIGNMENTS (in Geospatial analytics area): work carried out in the area with support document.

17.0. Names and addresses of experts / institutions interested in the subject / outcome:

18.0.ENDORSEMENT FROM THE HEAD OF INSTITUTION

PROJECT TITLE:

Certified that the Institute welcomes participation of Dr.....as the Principal Investigator for the project.

1. Certified that the equipment other basic facilities and such other administrative facilities as per terms and conditions of the grant will be extended to the investigator throughout the duration of project.
2. Institute assumes the financial and other management responsibilities of the project.

Name and Signature of Head of Institution

Date

Place:

In regard to the research proposals emanating from scientific institutions/laboratories under various scientific departments the Head of the institution is required to provide a justification indicating clearly whether the research proposal falls in line with the normal research activities of the institution or not.

CERTIFICATE FROM THE INVESTIGATOR/ CO-INVESTIGATOR

PROJECT Title:

1. I/We agree to abide by the terms and conditions of the DST grant.
2. I/We did not submit this or a similar project proposal elsewhere for financial support.
3. I/we have explored and ensured that equipment and basic facilities will actually be available as and when required for the purpose of the project. I/We shall not request financial support under this project for procedure for procurement of these items.

4. I/We undertake that spare time on permanent equipment. (listed in section 15.2) will be made available to other users.

5. I/We undertake to submit progress reports statement of accounts, utilisation certificates etc., regularly as prescribed by DST.

6. I/We have enclosed the following materials:

| Items | No. of copies |
|--------------------------------------------------------------------------------------------|---------------|
| a. Endorsement from the head of the Institution (on letter head) | one |
| b. Certificate from Investigator (s) | one |
| c. Name (s) and address (es) of experts/ institutions interested in the subject/outcome | Three |

Name and signature of investigator/ and Co-investigator

Date:

Place:

Annexure-I

**GOVERNMENT OF INDIA
MINISTRY OF SCIENCE & TECHNOLOGY
DEPARTMENT OF SCIENCE & TECHNOLOGY
NATIONAL GEOSPATIAL PROGRAMME (NGP) DIVISION**

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 18th 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 portal of the Government of India before submission of the proposal.

For any other query and submission of proposal please contact:

Dr. D. Dutta, Scientist 'G' & Associate Head / Dr. Shubha Pandey,
Scientist-E, NGP Division (*erstwhile* NRDMS),
Department of Science & Technology,
Technology Bhavan, New Mehrauli Road,
New Delhi-110016 (Telefax:011-26851967; 26590351)
Email: ddutta@nic.in; shubha.p@nic.in

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/>.
