

INDIAN INSTITUTE OF TECHNOLOGY HYDERABAD

Centre for Geo-Digital Twins (CGDT) & Department of Design

Advertisement for Consultant Positions

Project: 3D City Model for CURE & GIS Base Map for HMR & YTDA

"GIS Base Map and Geospatial 3D Digital Twin of Telangana Core Urban Region"

PROJECT DETAILS

Funding Agency	Hyderabad Metropolitan Development Authority (HMDA)
Principal Investigator	Dr. Shiva Ji
Email	shivaji@des.iith.ac.in
Institute	CGDT & Department of Design, IIT Hyderabad
Engagement Type	Contractual / Project-Based
Duration	2 Years (Implementation Phase), extendable based on project requirement
Work Location	IIT Hyderabad / HMDA Office, Ameerpet, Hyderabad / Field Visits

PROJECT OVERVIEW

The Hyderabad Metropolitan Development Authority (HMDA), through the Government of Telangana, is undertaking a large-scale geospatial initiative to develop an integrated digital twin and GIS ecosystem for evidence-based urban planning, monitoring, and smart governance across the Hyderabad Metropolitan Region (HMR). The project comprises three major components:

- A high-resolution 3D City Model for the Core Urban Region Economy (CURE) covering ~2,053 sq. km
- A GIS-based Geospatial Base Map for ~10,578 sq. km covering HMR and YTDA
- An integrated enterprise geospatial ecosystem for planning, monitoring, analytics, and governance

The project scope includes:

- Establishment of geodetic framework (GNSS, CORS, Ground Control Points)
- Aerial LiDAR and photogrammetry surveys (nadir and oblique imagery)
- Street-level LiDAR and 360° mapping; UAV, terrestrial, mobile, bathymetric and GPR surveys
- Processing of LiDAR and imagery datasets; generation of DSM, DTM, DEM, contours, orthophotos
- Creation of multi-thematic GIS layers
- Development of 3D models at LoD 2, 2.5, 3, and 4
- Development of enterprise GIS applications (web, desktop, mobile), dashboards, analytics, and integrations
- Testing, User Acceptance Testing (UAT), security audits, and Go-Live

ROLE OF THE TECHNICAL ADVISORY TEAM

The System Integrator (vendor) will undertake end-to-end implementation of all project components. The selected consultants, together with faculty from IIT Hyderabad, will function as a unified Technical Advisory Team responsible for:

- Defining detailed technical expectations and acceptance criteria
- Rigorously vetting vendor requirements, designs, and methodologies
- Validating all deliverables and approving or rejecting outputs at every stage
- Ensuring adherence to quality, completeness, and timelines
- Defining stage-wise deliverable checklists and validation frameworks

AVAILABLE POSITIONS – AT A GLANCE

S.No	Position	Posts	Experience	Salary (₹/Month)	Qualifications
1	Geospatial Digital Twin Lead (Project Head / Technical Authority)	01	15+ Years	₹1,70,000 – ₹2,10,000	B.Tech/M.Tech/M.Plan or equivalent in GIS/Geoinformatics/Remote Sensing/CS/Urban Planning; PhD preferred
2	Senior Geospatial Business Analyst (Requirements & Validation Lead)	01	10+ Years	₹1,20,000 – ₹1,50,000	Master's in GIS/Geoinformatics/Urban Planning/CS; PhD desirable
3	GIS Technical Analyst cum SCRUM Master	01	5+ Years	₹1,10,000 – ₹1,40,000	B.Tech/M.Tech in GIS/Remote Sensing/CS; SCRUM certification mandatory
4	Junior Research Fellow (JRF) — Likely convertible to PhD based on performance	06	0–3 Years	₹37,000 (Consolidated)	B.Tech/M.Tech in GIS/Remote Sensing or related fields

DETAILED JOB DESCRIPTIONS

1. Geospatial Digital Twin Lead (Project Head / Technical Authority)

No. of Posts	01
Experience	15+ Years
Salary (₹/Month)	₹1,70,000 – ₹2,10,000 per month
Work Location	HMDA Office, Ameerpet, Hyderabad / IIT Hyderabad / Field Visits as required

Role Summary:

Serves as the central technical authority responsible for defining expectations, scrutinising all vendor outputs, and driving stage-wise approvals across the full project lifecycle.

A. Requirements Definition, Deliverable Structuring & Acceptance Frameworks

- Review, challenge, and strengthen vendor-prepared Functional Requirement Specifications (FRS), System Requirement Specifications (SRS), and use-case definitions
- Ensure requirements align with HMDA's RFP, expanded into granular implementation-ready specifications covering all datasets, integrations, and applications
- Oversee definition of deliverable checklists, acceptance criteria, and validation checklists

B. Departmental Coordination & Requirement Consolidation

- Engage with HMDA and State Government departments to capture and validate requirements
- Resolve inconsistencies across departments; translate inputs into structured technical specifications
- Ensure all departmental use cases are fully incorporated and technically represented in the solution

C. End-to-End Technical Oversight

- Geodetic & Survey: Validate GNSS/CORS design, GCP distribution, georeferencing methodology and coordinate systems
- Survey Execution: Review outputs from LiDAR, photogrammetry, UAV, terrestrial, bathymetric, and GPR surveys
- Data Processing: Validate point cloud processing, terrain models, and orthophotos
- GIS Data: Verify topology, attributes, and cross-layer consistency
- 3D Models & BIM: Validate LoD compliance, geometry, semantics, georeferencing, and interoperability
- Applications & Integration: Review system architecture, applications, APIs, and dashboards
- Testing & Go-Live: Validate test plans, UAT readiness, and system performance

D. Stage-Gate Governance & Approval Authority

- Enforce structured validation across Requirements → Design → Survey → Data → Models → Applications → UAT → Go-Live
- Ensure no stage progresses without formal approval

E. Quality, Standards & Compliance

- Survey accuracy, GCP density, complete spatial coverage
- Image quality, orthophoto resolution, seamless mosaicking
- LiDAR point density, correct classification, noise filtering
- Topological correctness, attribute completeness, cross-layer alignment in GIS layers
- LoD compliance, geometry accuracy, BIM–GIS compatibility in 3D models
- Functional correctness, integration readiness, performance benchmarks in applications

F. Vendor Accountability

- Ensure vendor meets all specifications, addresses all review comments, and delivers complete and integrated outputs
- Drive rework cycles until required quality is achieved

Qualifications: Bachelor's/Master's in GIS / Geoinformatics / Remote Sensing / Civil / Urban Planning / BIM / Digital Twins / Computer Science / Design / Architecture or related domains. PhD preferred. Preferably from IITs/NITs or other top-tier institutes.

Experience: 15+ years in GIS / Digital Twin / Smart City programs including large-scale government or infrastructure projects.

2. Senior Geospatial Business Analyst (Requirements & Validation Lead)

No. of Posts	01
Experience	10+ Years
Salary (₹/Month)	₹1,20,000 – ₹1,50,000 per month

Work Location	HMDA Office, Ameerpet, Hyderabad / IIT Hyderabad / Field Visits as required
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Role Summary:

Translates project scope into detailed requirements, defines deliverable and validation frameworks, and ensures all vendor submissions meet defined acceptance criteria before approval.

A. Requirements Vetting & Structuring

- Review and strengthen FRS, SRS, and use-case definitions
- Identify gaps, inconsistencies, and missing coverage in vendor submissions
- Expand requirements into implementation-ready specifications

B. Deliverable Definition, Acceptance Criteria & Validation Frameworks

- Define stage-wise deliverable checklists (data, models, documentation, application outputs)
- Define acceptance criteria specifying accuracy, resolution, density, data formats, completeness, integration, and functional/performance expectations
- Develop validation checklists for use by the Technical Advisory Team covering all acceptance criteria and cross-validation checks

C. Validation & QA/QC Execution

- Establish structured validation processes ensuring all deliverables are evaluated against acceptance criteria
- Ensure validation checklists are fully completed before approval; document outcomes as compliant / non-compliant

D. Departmental Alignment

- Work with departments to ensure requirements are complete, use cases fully incorporated, and outputs aligned with operational needs

Qualifications: Master's in GIS / Geoinformatics / Urban Planning / Computer Science or equivalent. PhD desirable. Preferably from IITs/NITs or other top-tier institutes.

Experience: 10+ years in GIS analytics, data validation, and geospatial systems; experience in defining QA/QC and validation frameworks.

3. GIS Technical Analyst cum SCRUM Master	
No. of Posts	01
Experience	5+ Years
Salary (₹/Month)	₹1,10,000 – ₹1,40,000 per month
Work Location	HMDA Office, Ameerpet, Hyderabad / IIT Hyderabad / Field Visits as required

Role Summary:

Ensures all deliverables are tracked, reviewed, validated, and closed in a structured and timely manner across all project stages.

A. Deliverable Tracking

- Track all vendor submissions across Survey → Data Processing → GIS → 3D Models → Applications → Testing

B. Review Workflow Management

- Ensure all submissions are reviewed using deliverable checklists, acceptance criteria, and validation checklists
- Enforce that no deliverable is approved without checklist-based validation; return non-compliant submissions for rework

C. Coordination & Follow-up

- Coordinate between Technical Advisory Team, Vendor, and Government departments
- Ensure timely submissions and closure of review comments

D. Issue Tracking & Escalation

- Maintain issue logs, risk registers, and dependency trackers; escalate delays and unresolved issues

E. Documentation & Audit Trail

- Maintain complete repository of deliverable checklists, validation checklists, review comments, and decisions
- Ensure full traceability of all approvals

Qualifications: Bachelor's in GIS / Remote Sensing / Civil Engineering / Computer Science or equivalent. SCRUM certification mandatory. Preferably from IITs/NITs or other top-tier institutes.

Experience: 5+ years in GIS / project coordination.

4. Junior Research Fellow (JRF) — Likely Convertible to PhD Based on Performance

No. of Posts	06
Experience	0–3 Years (Renewable Basis)
Salary (₹/Month)	₹37,000 per month (Consolidated)
Work Location	IIT Hyderabad / HMDA Office, Ameerpet, Hyderabad / Field Visits as required

Role Summary:

Support data review, preliminary validation, and documentation across all project components, with opportunities for research publication and potential PhD enrollment based on performance.

Key Responsibilities

- Conduct preliminary checks on datasets and deliverables; identify inconsistencies, gaps, and quality issues
- Support validation processes and documentation for the Technical Advisory Team
- Assist in data collection, pre-processing, and 3D modelling support
- Support patent and publication assistance, metadata management, and QA workflows
- Contribute to visualization and spatial data pre-processing tasks

Qualifications: Bachelor's / Master's in GIS / Remote Sensing / Geoinformatics / Urban Planning / BIM / Digital Twins / Computer Science / Architecture / Design or related domains. Preferably from IITs/NITs or other top-tier institutes.

Note: Candidates who are about to complete their Master's programme may also apply (provisional certificate from Head of Institution required).

GENERAL TERMS & CONDITIONS

- Rolling advertisement — applications reviewed every 15 days until all posts are filled
- Only shortlisted candidates will be called for interview (online or offline)
- PI reserves the right to alter the number of vacancies or keep posts open until a deserving candidate is found
- Shortlisted candidates will be intimated via email with suitable interview date
- No TA/DA or accommodation will be provided for attending the personal interview
- Candidates with prior experience in relevant areas will be given preference
- Immediate joining preferred
- Selections will be based on experience, technical expertise, and interview performance
- For clarifications, candidates may write to the PI at the email address provided

HOW TO APPLY

Submit applications through the online Google Form. A single PDF must include:

- Cover Letter
- Updated CV
- Portfolio (if applicable)
- One-page Statement of Interest

Important: Share your CV/Portfolio files with 'anyone with the link' in Editor mode in Google Drive settings before submitting.

Apply Online	https://forms.gle/X6ot6R1FdFHTw9uq9
Advertisement	https://shorturl.at/zxSl4
Apply (Short)	https://shorturl.at/PBeou

For any clarification, write to: shivaji@des.iith.ac.in

IIT Hyderabad — Centre for Geo-Digital Twins (CGDT) & Department of Design

This is a rolling advertisement. Applications will be reviewed on a continuous basis until all positions are filled.