DIGITAL ADDRESS DPI INNOVATION HACKATHON

COMPETITION RULEBOOK

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OVERVIEW

Address information is a foundational element for public and private service delivery and is essential for inclusive growth, efficient governance, and improved quality of life. However, India's existing addressing system—constrained by legacy formats, inconsistent standards, and reliance on informal landmarks—does not meet the needs of a digital economy.

There is an urgent need to treat address information management as a core layer of public infrastructure, comparable to digital identity or payments. This requires a user-centric digital architecture supported by robust institutional and governance frameworks that prioritize privacy, interoperability, and innovation. A modern address management ecosystem must empower individuals to manage, use, and share their address information securely, ensuring equitable access to services while upholding user autonomy and trust. Department of Posts has taken an initiation in this direction to establish a standardized, interoperable geocoded addressing system that supports secure, consent based and seamless sharing of address information, empowering users with meaningful control over their address data.

DHRUVA - A DPI FOR ADDRESS MANAGMENT

The Department of Posts is developing DHRUVA (Digital Hub for Reference & Unique Virtual Address) as a Digital Public Infrastructure (DPI) to enable users to create, manage, and share address information securely using a geo-coded framework. It aims to replace traditional, error-prone address systems with a digital, accurate, interoperable, and privacy-preserving solution.

Mission

(1) To recognize address information management as a core public infrastructure essential for effective governance, inclusive service delivery, and improved user experience.
(2) To develop an address data sharing and management ecosystem that supports seamless integration across public and private sector.
(3) To promote user autonomy through secure and consent-based sharing of address information, that can support innovation and user convenience and promotes ease of living.
(4) To foster a collaborative ecosystem of public and private actors co-creating user-centric solutions built on a secure and trusted digital address infrastructure.

DHRUVA will operate through two key layers:

(1) DIGIPIN Layer: A national-level, open-source, geo-coded addressing grid jointly developed by the Department of Posts, IIT Hyderabad, and NRSC-ISRO. Each 10-digit alphanumeric DIGIPIN represents a 4x4-meter grid on India's map, providing precise geolocation. By integrating DIGIPIN with traditional addresses, organizations can enable GIS-based service delivery in a cost-effective and standardized manner. The DIGIPIN grid is already available as an open GitHub repository.

(2) Digital Address Layer: A user-centric, consent-based system built on the DIGIPIN framework. Users can create easy-to-share virtual addresses (e.g., username@domain) that link to their DIGIPIN and descriptive address—similar to a UPI ID for addresses. Through a unified interface, users can update, share, or revoke their address data anytime, ensuring control and privacy.

By offering an open, interoperable, and secure address ecosystem, DHRUVA aims to standardize address information, enhance service delivery efficiency, and enable digital transformation across sectors.

Objective of DHRUVA

The objectives of DHRUVA are to establish a unified interface for geo-coded addressing that enables standardisation and precision in address representation across India. It seeks to embed privacy by design as a core principle, ensuring user consent and data protection throughout the ecosystem. DHRUVA aims to enhance efficiency in public and private service delivery by simplifying workflows and reducing errors, while also strengthening decision-making through address intelligence that supports data-driven governance.

The platform is designed to enable interoperability and foster innovation across sectors, encouraging collaboration between public institutions and private enterprises. It further strives to promote inclusivity and equitable development by extending reliable addressing to underserved and remote regions. In addition, DHRUVA aims to build trust and consistency in digital addresses, ensuring their reliability and authenticity, and to support scalability, public–private partnership, and future-readiness through an open, modular, and adaptable architecture.

Institutional Framework

The DHRUVA ecosystem defines distinct roles for participating entities:

Entity	Function
Address Information Provider (AIP)	Authorized entity responsible for generating and managing
Address Information User (AIU)	Entity consuming address information to deliver services
Address Information Agent (AIA)	Interface providing user interaction and consent
Authorised Address Validation Agency (AAVA)	Institution legally empowered to validate the accuracy,

AAVA plays a central role in ensuring that the address data within the ecosystem meets prescribed standards of reliability and accuracy. Validation strengthens user trust, enhances interoperability, and supports both public and private sector operations dependent on address information.

Relevance of Address Validation

Validation of address information plays a crucial role in ensuring that the addresses used across governance and service delivery are both authentic and verifiable. It involves confirming that an address actually exists on the claimed DIGIPIN grid, that the descriptive address elements are accurate.

Within the DHRUVA framework, the Authorised Address Validation Agency (AAVA) serves as a layer of trust and reliability, validating address information while fully preserving user privacy. This validation function is vital for a range of applications, including the delivery of welfare benefits and public services, optimization of last-mile logistics and emergency response, address verification for financial and telecom KYC processes, and the generation of confidence scores that help service providers assess the precision and dependability of digital address data.

PROBLEM STATEMENT

The identified problem statement for the proposed student hackathon is: "Development of an Address Validation Protocol for an Authorised Address Validation Agency in the Digital Address Ecosystem."

Hackathon participants are expected to outline the workflow of address validation, propose suitable technological solutions and recommend measures for ensuring address data quality in the form of a detailed document with detailed illustrations (20-25 pages).

It should also ensure privacy-preserving, consent-based validation aligned with DHRUVA principles and include institutional checks and quality control measures to promote standardization, transparency, and trust in the address validation processes via AAVA.

ELIGIBILITY CRITERIA

- All students, engineers, and problem solvers enthusiastic about ethics in technology are eligible to participate. **No professional qualifications are necessary.**
- **The minimum age** for participants is **15.**

TEAM COMPOSITION

- Individual participants will also be allowed in the competition.
- Team registrations are allowed with a maximum size of 3 participants.

AWARDS

The winners will be awarded the following cash prizes and a participation certificate to all participants that make a submission.

1st prize - INR 60,000
2nd prize - INR 40,000
3rd prize - INR 20,000

COMPETITION TIMELINE

Stage 1

- Registrations and submissions open on 8th November 2025 and close by 05:00 pm on 30th November 2025

Stage 2

- Offline rounds will be held in IIT Madras, for qualified teams in front of a Panel of judges from India Post on 03rd January 2026.
- Top 6 Teams / Participants qualifying from Round 1 will present On Campus

REGISTRATION

Click the following link to register: **https://unstop.com/p/digital-address-dpi-innovation-hackathon-digital-governance-summit-shaastra-shaastra-2026-iit-madras-1587128**

COMPETITION GUIDELINES

(1) Stage 1 Submission Round:

- Participants/Teams will submit their solutions through code in any programming language of their choice.
- They are also required to submit a presentation consisting of 20-25 slides excluding “Welcome” and “Thank you” explaining their solution.
- Registrations and Submissions are only accepted **through Unstop.**
- Participants and teams alike can make **only one submission.**

(2) Stage 2 Presentation Round:

- Shortlisted teams will present their solution to a live jury during Shaastra 2026 at the IITM campus. The exact date and schedule of the presentation will be intimated to the qualifying teams.

DATA PROTECTION

- The participants hereby grant Shaastra, IIT Madras and India Post, a nonexclusive right to use the submitted material free of any charge for non-commercial purposes on our respective web pages, social media platforms, and printed publications.
- Participants must be able to provide proof of their identity, age, and place of residence in such a way that Shaastra, IIT Madras can check and disqualify entries for any breach of rules.
- Shaastra, IIT Madras reserves the right to modify the competition schedule if deemed necessary.
- The participant will be disqualified for the breach of any of the competition rules. In such a case, the organisers' decision will be final and binding on all participants.

COPYRIGHT

- The submission must be an original work authored by the participant.
- By participating in this contest, the participant declares and warrants that:
    - The material is their own.
    - No one else apart from the participant has the copyright or any intellectual property right on the submitted work.
    - The submitted work does not infringe on the copyright or intellectual property rights of someone else.
- The participant remains the owner of the copyright of the submitted work(s).
- The illustrations will be credited appropriately each time it is reproduced or communicated to the public by Shaastra, IIT Madras and India Post.

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