BLOCKCHAIN BASED CASTE CERTIFICATES

In a nutshell: Issuance of caste certificates whose authenticity is guaranteed by a blockchain, thereby preventing forgery and disallowing fake caste certificates to be used for availing government services.

Nodal agency: Office of Sub-Divisional Officer, Etapalli (Gadchiroli, Maharashtra), partnering with software firm LegitDoc

Blockchain technology allows data to be stored in a secure and tamper-proof way. By guaranteeing fidelity, it generates trust without the need for a trusted third party. Taking advantage of this, the district administration, Gadchiroli has launched a programme to issue caste certificates which are cryptographically anchored on polygon POS blockchain. This enables anybody to instantly authenticate certificates with the help of un-censorable, publicly auditable data stored on-chain (on public blockchain).

The project is being piloted in the Etapalli sub-division of gadchiroli district, catering primarily to the 70% Scheduled Tribe population, including many particularly vulnerable tribal groups (PVTGs) such as Madia, Gond.

At the heart of the blockchain system is what are called the issuance decentralized application (DApp) and a verification DApp, which is built on top of public blockchains. The issuance DApp is operated by the district administration. The issuance DApp takes as input the caste certificate generated by the MahaOnline portal (currently being used by Maharashtra to issue caste certificates). Depending on the details present in this input (such as name, village, caste, etc.), the issuance DApp produces a hash code unique to this input dataset. The issued DApp then not only uploads this hash onto the blockchain but also generates a QR Code that is appended in the original caste certificate. This blockchain-powered caste certificate reaches the citizens via common service centres.

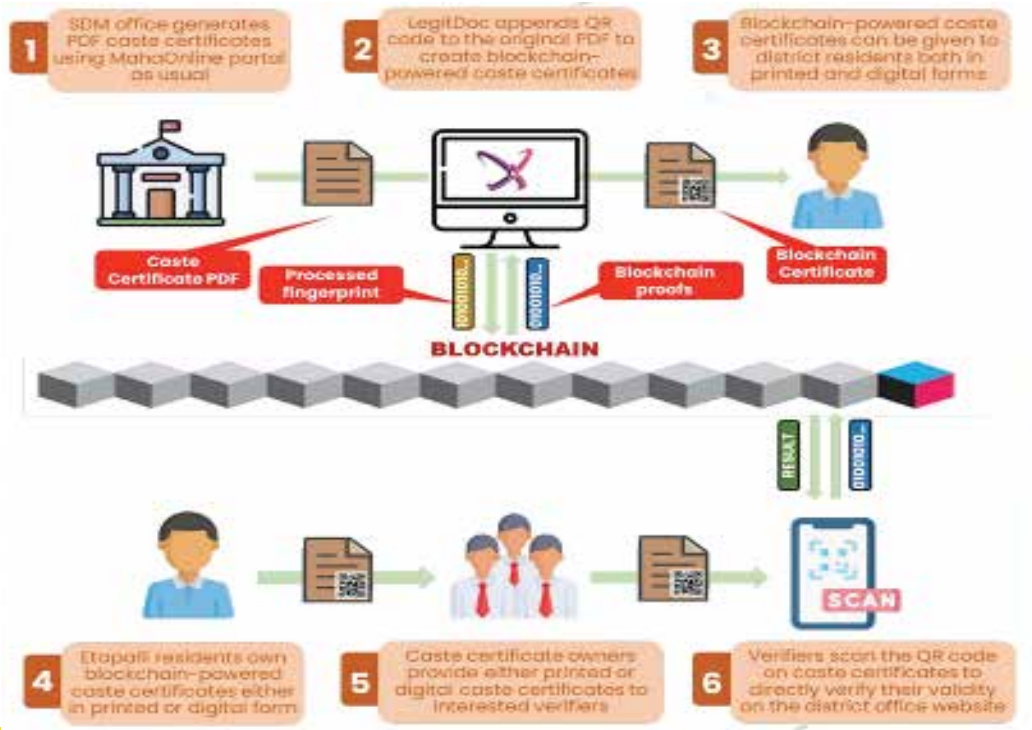
Further, the verification DApp, which is hosted on the Gadchiroli district administration website can be used by anybody to verify the authenticity of the caste certificate. One shall only need to scan the QR code on the certificate. The system does not respond to tampered QR codes. Moreover, if a valid QR code is pasted on a fake certificate, the verifier will see a mismatch between the data shown on the verification portal and the forged certificate.

How will this initiative help?

- The newfound ability to easily verify caste certificates will drastically reduce fraudulent benefit/incentive claims.
- Improvements in privacy, as data on the blockchain is stored in a hash and not as plain text.
- Maliciously de-platforming a person who legitimately belongs to a caste will not be possible.
- The blockchain smart contract acts as an open API, using which any third party can build apps. For example, one can build a DApp on top of the Gadchiroli smart contract and automatically credit scholarship amounts to students of a particular backward community.

Outcome

Currently, 65,000 caste certificates are being covered, with a plan to gradually expand it to all the eligible population of the sub-division in the coming months. This project is a step ahead in the adoption of Web 3.0 (umbrella term used to refer to new-age internet technologies, including bl ain the governance systems. The success of this project proves that the source of truth of citizen records need not be government files or administrator-governed cloud repositories. Instead, it can be the undeniable, cryptographically verifiable data proofs stored on-chain.



Process of issuing blockchain caste certificates

Media coverage of the Blockchain based caste certificate project of Gadchiroli