LAND OWNERSHIP REGISTRATION USING BLOCKCHAIN

INTRODUCTION

With advancement of new technologies, people are experiencing better services and values in every aspect of life. Changes in technologies are providing much better options to solve problems and thus improving the existing systems. This is an application of Land Registration System. Land registry in India as well as in many parts of the world is a very slow and inconvenient process. Current land registration & verification systems include an increasing number of fraud cases and loss of paperwork and court cases due to thousands of land records to maintain. The intention behind building this was to make the process of land registration resilient and decreases the cases of fraud in the process. Using the system, validation of the lands is also possible as immutable transactions are being stored in the public ledger. So the Land Registration system using blockchain is a distributed system that will store all the transactions made during the process of land buying. This will also be helpful for buyers, sellers and government registrars to transfer the land ownership from seller to new buyer as well as it will accelerate the process of registration. Over the time Property Registration System of government had improved quite a lot by moving to EPR system from the older manual system. Nowadays information is easily searched and services are delivered much faster. However, the system still has scope of improvement in the area of security, integrity, transparency and ownership of data. These issues may be better addressed by the use of

emerging blockchain technology. This technology offers to provide a secure, temper-proof, transparent platform for storing records in decentralized manner and delivering e-governance services better than the existing system. The ledger of a blockchain is immutable as every block header holds hash of previous block and Merkle root which is hash of all the hashes of all the transactions. As a result, any tampering of data in any block makes all the following blocks invalid. This immutable property makes the data tamper-proof in any blockchain. In the existing traditional Property Registration systems, property registration process involves verification of the title of the property, estimation of property value, stamp duty and fees, payment of fees and stamp duty, digital signature of the deed, biometric data capture for buyer and seller and finally handing over of the deed. This requires involvement of buyer, seller, registration authority For registering the execution of any property, firstly the title of the property is required to be verified by registration authority and the land on which property is existing is required to be verified from Land Authority. Sometime verification is required from local municipal civic body. Secondly, it is required to be verified whether the seller is possessing the amount of property he or she sets up for sale or transfer. It is also required to be verified whether the seller is really selling the property or some fraud element is trying to sell the property. The system requires a strict check on whether the same property is being sold or transferred to multiple persons.

SOLUTION

- Blockchain can act as a single source of truth for all the stakeholders involved in the titling process, such as bank's, public offices, owners, etc.

- All the data records related to land ownership, payment records, transfer, and passing of ownership rights from one generation to another, can be managed easily without any fraud.

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- The documents of the land should be converted into digital format by the government to make the data available to the new user at any time of registration so that he/she can get to know the original details of the land.

FABRIC COMPONENTS

1. Organization (1): Government
2. Ordering service: O1
3. Ledger (1): L1
4. Channel (1):C1
5. Peer

HIGH LEVEL FLOW
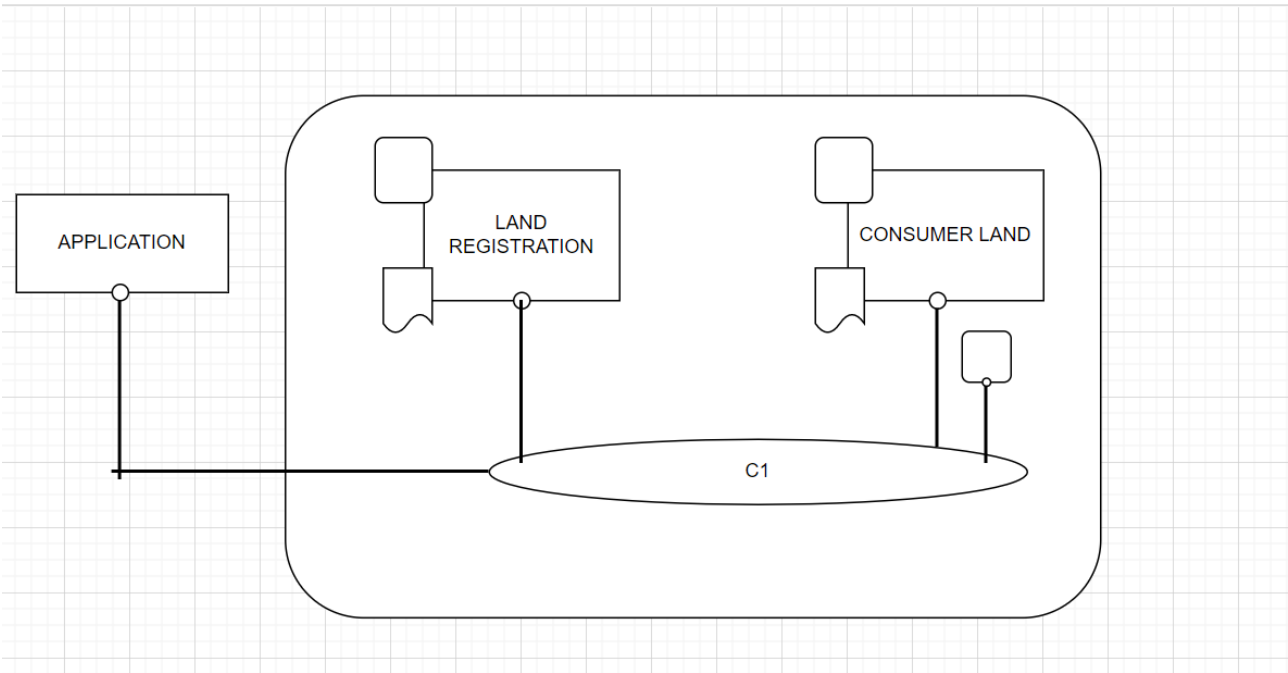
SMART CONTRACT

- View document to upload the land document.
- Government official upload land document idea land owner name.
- Document id view can do anyone.

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         │                        │      │ Order service:           │
         │         ORG            │      │                          │
         │ government  official   │      │ verify()                 │     ┌──────────────────────┐
         │ upload                 │      │ {                        │     │                      │
         │ document  idea         │      │                          │     │  Application:        │
         │ land owner name        │      │ }                        │     │  user - upload/check │
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