LAND INFORMATION ECOSYSTEM

A CONCEPT PAPER

1. VISION

The Unified Land Information System (ULIS) shall be a **Single, Authoritative Source of Truth** of information on any parcel of land or property to provide **Integrated Land Services** to the citizens.

2. MISSION

    i.   Identify Land departments which provide land related services
    ii.   Identify services of these land departments
    iii.   To assign a unique Id to each parcel
    iv.   Set up a federated Land information system which works in collaborative manner

3. OBJECTIVES

The finer goals and objectives of the proposed system would be:

    i.   To identify departments dealing with land that are regulating and rendering Land related citizen services
        (Ex: Revenue, Municipal, Panchayat, Forest, Registration, Survey etc)

    ii.   To identify the services of the land departments, such services which are multi-departmental in nature
        (Ex: Mutation of Agricultural Land, Land Conversion from Agricultural to Non-Agricultural)

    iii.   Work out a strategy to assign Unique ID for each Land parcel

    iv.   To create online Land Information System with open standards APIs (Application Programming Interface) so that other stakeholders could consume them online to generate further value.

    v.   To provide comprehensive information on land and properties, consisting of **textual and spatial data**

    vi.   To maintain the **consistency of core data** across all departments and agencies of the Government countrywide

4. APPROACH/ METHODOLOGY

    i.   Board of Revenue/Department of Revenue at State is to take lead initiative
    ii.   Identify all departments dealing with Land Resources
    iii.   List the services being rendered by these departments/agencies single-handedly or multi-departmentally in a collaborative manner.

iv.   Identify common data sets being maintained by these Departments about Land Resources, Ownership etc from database schema used by departmental e-Applications

v.   Standardise common data attributes

vi.   Finalise the protocol (process-flow, role of each work flow player, access rights etc) to guide inter-departmental-database transactions to maintain consistency.

vii.   Prepare collaborative applications in order to manage the multi-departmental work-flow, core data and transactions (Create/Update/View) etc to be performed by different stakeholders.

viii.   Strategy for assigning Unique ID for each Land Parcel can be worked out based on the following situations

   a.   each Land Parcel in State, under domain of discourse, has Geo Referenced Lat/Long Coordinates

      i.   There is a formula to generate and assign ECCMA Standard prescribed Unique 14 digit Unique ID (PNIU) using the parcel Geo Referenced coordinate of vertices

      ii.   This computationally generated Unique ID, would be organically dependent on Parcel vertices expressed in lat/Long coordinates (PNIL) and Unique ID (PNIU) would spatially be pointing to the surface of the parcel.

      iii.   A new Unique ID would be generated by System as and when mutation takes place as Lat/Long of Mutated Parcel would be different.

      iv.   This Unique ID of Parcel, being very precise & accurate, should not be shared in Public domain due to their strategic and accurate locational & security values and hence may be mapped with another Unique random number with prefix state code, which can be shared with Owner and in public domain for all practical purposes.

      However, sharing of the Unique ID -with the land owners or keeping it in public domain **before mapping it to another Unique random number with prefix State code** is in the purview of the respective State Revenue Departments of the States/UTs as the ownership of the land records data is vested in the respective Revenue Departments of the States/UTs Administration.

   b.   Geo Referenced Coordinates for Land Parcels are not available as of now

      i.   There are many States which have assigned Unique IDs to Land Parcels that are composite in nature and dependent on Administrative Unit codes such as District code, Tehsil Code, Village code etc.

         1.   Such codes face issues e.g. in case of reorganisation of boundaries that is quite a common practice now though it can be managed from the IT angle

      ii. State of Andhra Pradesh adapted a strategy and assigned random code to each land parcel with first two digits for State code

          1. This would remain unaffected during delimitation of boundaries of Administrative units

          2. Would change only when mutation happens

5. VALUE PROPOSITION

    i. The Single source of truth on Land will stand as authoritative reference to authenticate the ownership and the other land parameters of the record

    ii. Unique Categorization of Govt Lands would benefit in instant identification and prevention of transfer of such lands to individuals during transactions such as Registration

    iii. A Unified ID (viz., uniformity in assignment like Aadhaar number) would in future lead to Certificate-less governance

    iv. Standardization at Data and Application level would bring in effective integration and interoperability across Departments and other Stakeholders/ Service Providers

    v. Assigning Unique ID to each Land Parcel in State, irrespective of the Department dealing with land, would help Unified system to track the Land, its reconciliation etc and to bring higher values to all stakeholders

6. CONCLUSION

The Proposed approach/ methodology to build a Unified Land Information system (ULIS) is expected to provide quality services to users through single portal on one hand and achieve transparency in land transactions. The Architecture shall be generic enough to include more department/agencies as and when they become a stakeholder as per criteria.