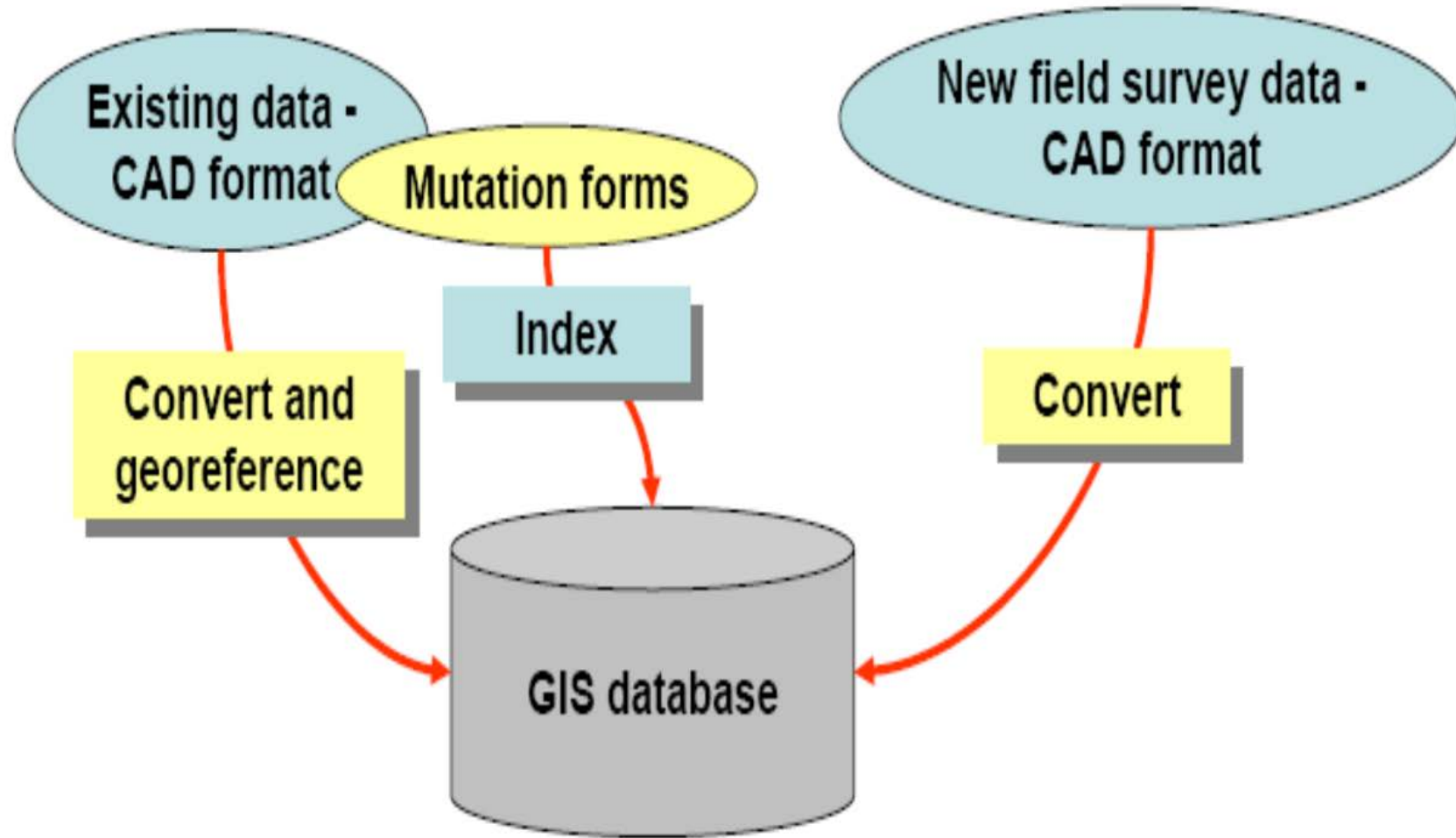


Creation of Cadastral Information base



Flow chart of activities

# Process

- Collecting hardcopy maps/sheets from the concerned Land Record Department
- Indexing & Coding
- Scanning of Village/Cadastral map sheets
  - Grid base generation or
  - Map grid generation
  - Grid correction of Cadastral images
- Digitization of individual scanned Village map sheets(grid corrected)
- Edge Matching and Mosaicing up to Village Level
- Cleanup and topology building
- Quality Control/Checks- Rectify errors
- Data Translation-GIS environment
- Geo-referencing of individual villages, mosaicing up to tehsil/district/state level
- Quality assurance
- Final deliverables

## Edge matching of adjoining village maps

- four points on each map cadastral map are pre-matched with road maps (Affine transformation) .
- Sequential Auto-matching is followed to avoid multiple mismatches
- Boundary Line based Automated Adjustment by:
  - Searching the conflicted cadastral lines based on given boundary lines
  - Moving the conflicted cadastral lines to given boundary lines
  - Related cadastral line adjustment

## Attributes of land records

- Record of Rights (RoR) contains the ownership details of each parcel, subdivisions etc.
- Crop details are updated thrice/twice in the States based on crop seasons and inspection reports on crops sown, area, cultivators and yield details.
- Pedigree table/sheet gives the details of family history, relationships with ownership details

## Issues in land records mapping

- Data redundancy (multiple record)
- Null/no fields in data for mandatory field
- Data inconsistency (land parcel information in land registry records & vice versa)
- Geometry problems (parcel blocks and geometry do not fit, overlapping or intersecting land parcels)

## Basic questions? search

### What is at a particular location?

- Query could be a place name, an address, or a geodesic reference such as co-ordinates.

### Where are certain conditions to be found?

- Requires spatial analysis instead of identifying what exists at a given location, find a location where certain conditions are satisfied (all parcels owned by a particular person).
- Hence, Modern cadastral system is referred to as a multitask cadastre.
- Construction of the cadastral system begins with implementing computer systems at the local level- municipalities, panchayats and ward offices and allow to function autonomously.
- local systems should be linked at the regional level, with elements of management decentralization corresponding to the structure agreed upon.