Cadastral Data Management System in Turkey

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Who we are?

MIS ?
GIS ?
Or
IT ?

View from MIS

Nowadays MIS and GIS are getting closer fastly

View from GIS
Viewing from MIS is changing

MIS ⊂ GIS

Viewing from GIS is changing

GIS ⊂ MIS

Neither MIS Nor GIS

IT ⊆ MIS ⊆ GIS

All we are IT users

Land Register & Cadastre Information System is an IT Project

IT ⊆ MIS: Land Registry ⊆ Cadastre

IT Community Will Grow

- Use knowledge
- View and leverage the information
- Build & manage the infrastructure
- Develop the science
- IT Professionals
- IT Users
- 100’s of millions
- Millions
- Hundreds of thousands
- Thousands
- Research Community

TURKISH LAND REGISTRY AND CADASTRE SYSTEM (LR&CIS)

- The studies have begun in early 2001.
- 3 months for analysis studies,
- 3 months for design studies,
- 16 months for software development studies
- It has been implementing for 14 months on actual distributed sites
  - General Directorate,
  - One Regional Directorate,
  - 6 land registry and 2 cadastre offices
MAIN CHARACTERISTICS OF PROJECT

- It is integrated with Land Registry system
- It is a parcel-based system
- It contains geometric cadastral information and proprietary information with respect to ownership.
- It covers all Land Registry and Cadastre activities carried out in Regional Directorates (25), in Land Registry (1003) and Cadastal (325) Offices.

STAFF OF LR&CIS,

- PROJECT MANAGER (1)
- LAND REGISTER / CADASTRE SYSTEM MANAGER (2)
- SYSTEM ANALYST (24)
- DATABASE EXPERT (4)
- PROGRAM DEVELOPPER (24)
- DATA ENTRY OPERATOR (40)
- HARDWARE/NETWORK EXPERT (6)
- LAND REGISTRY/CADASTRE EXPERT (4)

SOFTWARE ARCHITECTURE

SYSTEM ARCHITECTURE
CADASTRAL DATA CONTENT AND DEFINITIONS

- **Geometric data**: composed of quarter or village boundaries, blocks, parcels, parcel segments, parcel corner points, ground control points, and buildings.
- **Attribute data**: owners, rights, mortgages, annotations should be defined and registered with geometric data at the same time.

### Rules and Relationships
- A parcel must be in a block or Village/quarter.
- A block must be in a Village/Quarter.
- A Village/Quarter must be in a County and a County must be in a Province.
In Geodatabase
In Registration
Domain list
Boundary of provinces, county, quarter
Name
Reference Code
Shape Area
Block
Number
Shape Area
Parcel Polygon
Block
Number
Shape Area
Parcel Number/Name
Shape Area
Owner
Share
Rights
Resolution
Parcel Type
Registered Area
Parcel Segment
Geographical lenght
Measurement length
Adjusted Sea Type
Parcel Corner Point
Production method
Printed By Organization
Parcel data
Building
Building type
Parcel Control Point
Number
Measurement Type
Coordinate X Value
Coordinate Y Value
Coordinate Z Value

Statistics of Turkey Area

<table>
<thead>
<tr>
<th>Type of Area</th>
<th>Km²</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forest</td>
<td>202,280.00</td>
<td>26.0</td>
</tr>
<tr>
<td>Pasture</td>
<td>96,000.00</td>
<td>12.3</td>
</tr>
<tr>
<td>Cadastral Area (Rural)</td>
<td>440,000.00</td>
<td>56.6</td>
</tr>
<tr>
<td>Cadastral Area (Residential)</td>
<td>40,000.00</td>
<td>5.1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>778,000.00</td>
<td>100.0</td>
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</tbody>
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Statistics of Turkey Area

<table>
<thead>
<tr>
<th>Residential Area</th>
<th>Rural Area</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total</strong></td>
<td><strong>Completed</strong></td>
</tr>
<tr>
<td>8,636</td>
<td>8,277</td>
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DATA SHARING VIA INTERNET

EXTERNAL USERS OF LR&CIS...

BANKS
CULTURE
TRANSPORTATION
AGRICULTURE
WATER AND SEWERAGE
NATURAL GAS
MUNICIPALITY
PUBLIC WORKS
ELECTRICITY
COMMUNICATION
CITIZEN
TAX
FOREST
PIPE LINE
LR&CIS

DATA SHARING VIA INTERNET
Conclusion

• At this moment cadastral data is living with its weakness of accuracy, currency and quality.
• In the future, data improvement process shall be taken as a big project, planned, and solved in a specific time by the Cadastre Organization.
• Data quality shall be classified and shall be processed with in accordance its quality.
• Data shall be related with other data like worth of parcel, tax value and land use in order to establish a multi-purpose of cadastral system.
• Cadastre organization shall be reorganized in accordance with this system.
• Personnel qualification shall be increase with training.
• The body of current laws and regulations shall be improve accordance with technical development.