Registration Method

- The registration method accepted in Israel is registration of possession rights (Registration of Titles) based on Torrens principles
- Torrens Principles – parcels boundaries and areas definition on the basis of land surveying initiated by the State.
The main goal:

Promoting Israeli cadastre according to the main principles of “Cadastre 2014” (“good land governance” and supplying up-to-date and reliable cadastral information to the public through internet);
Objectives

• To make cadastral information available to the Survey, private surveyors, government offices and private citizens.
• Uniformity, Homogeneity and Quality Control.
• Creation of Legal Coordinated Cadastre, and its extension to the third dimension.

Planning the Database

ALTERNATIVES:
• Re computing the best available original survey data, i.e. field books and mutation plans: optimal accuracy of data.

Or . . .
• Digitize cadastral maps: Faster, less accurate.
Establishment

- 1988 - First steps;
- During the 90’s:
  - acquisition of hardware and software, training personal;
  - Map Digitizing;
- 2000 - Establishing a seamless Cadaster Database;
- Since 2001 - updating the information through approved mutation plans.

Accuracy

1. Researches show a 20 cm. ”built in” error in original measurements;
2. 80% in the 10 – 35 cm. range;
3. 75% of blocks had area problems;
Discrepancies

1. Discrepancy between the area computed and the area registered
2. Discrepancy between borders of neighboring blocks
3. "Disappearance" of a parcel
Ranking Border Points

**Analytical** = Measured under 1998 Ordinances;

**Approximate** = Calculation from field books;

**Digitized data.**
Ranking in current Database

New Cadastral Database
Infrastructure for Modern, High Accuracy Cadastre

- Data Source:
  - New parcels;
  - Processing of historic cadastral materials;
- Defining cadastre processes;
- Transition to homogeneous and accurate geodetic network (IL2005);
- Determination of points’ coordinates for parcel boundaries restoration;
- Keeping track of coordinate changes in time.
New Cadastral DataBase
Infrastructure for Modern, High Accuracy Cadastre

- Parcel_N_id – Border Point Unique Identifier
- Ranking (Accuracy_Level);
- Control_id - Identity with a Geodetic Control Point;
- Legal_X_Coord , Legal_Y_Coord , H;
- Legal_Coord_System;
- Point_Type;
- Source - Measured, Calculated … ;
- Process_id - which Process created the point.

Ranking Border Points:
- A newly established point;
- An original point/monument (measuring an original point is the highest);
- Method of surveying: GPS is the highest;
- Calculation from field books;
- Digitized data.
### Point Ranking

<table>
<thead>
<tr>
<th>Point Ranking</th>
<th>Accuracy</th>
<th>Marking type</th>
<th>Source data</th>
<th>Definition in current database</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>&quot;0&quot;</td>
<td></td>
<td></td>
<td>A point measured and/or calculated as part of an analytical cadastre project in state owned open areas or with the Director Generals' approval</td>
</tr>
<tr>
<td>2</td>
<td>0.05</td>
<td>Ground monument</td>
<td>Original point or newly established</td>
<td>Analytical</td>
</tr>
<tr>
<td>3</td>
<td>0.2</td>
<td>No found</td>
<td>Field books</td>
<td>Analytical</td>
</tr>
<tr>
<td>4</td>
<td>0.5</td>
<td>No found</td>
<td>Field books</td>
<td>-</td>
</tr>
<tr>
<td>5</td>
<td>0.8</td>
<td>No found</td>
<td>Geometrical</td>
<td>Approximate</td>
</tr>
<tr>
<td>6</td>
<td>Scale depended</td>
<td>No found</td>
<td>From digitized maps</td>
<td>Digitized</td>
</tr>
<tr>
<td>9</td>
<td>&gt;0.8</td>
<td></td>
<td></td>
<td>A point with calculation error or any other problem that prevent accurate rank determination</td>
</tr>
</tbody>
</table>