Mapping and Caching

Romania

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Agenda

- Esri Romania Data Policy
- Data Sources
- Data Integration into CBM Template
- Map Templates
- Romania Cached Maps
- Large Scale Topographic Maps
Esri Romania Data Policy

A. National Database
   A1. Romania 1 : 1 000 000 (1996)
   A2. Romania 1 : 200 000 (……)
   A3. Romania 1 : 100 000
   A4. Romania 1 : 10 000 (2011)

B. Cities database
   B2. Bacau 1 : 10 000 (……)
   B3. Brasov 1 : 5 000
   B4. Buzau 1 : 15 000
   B7. Cluj 1 : 10 000
   B8. Constanta 1 : 10 000
   B9. Timisoara 1 : 10 000 (……)
   B11. 170 Cities 1 : 2 000 (2010-2011)

Full ownership over the entire database
# Data Sources

## A. National Database

<table>
<thead>
<tr>
<th>Database</th>
<th>Data Source</th>
</tr>
</thead>
</table>
| Romania 1:1,000,000 | Unclassified 1:850,000 maps  
IGFCOT Bucharest (edition 1984-1985) |
| Romania 1:200,000  | Unclassified maps 1:200,000 maps  
IGFCOT Bucharest (edition 1984-1985) |
| Romania 1:100,000  | Military Topographic Department unclassified maps (edition 1996-1998)  
Water Cadastre Maps (edition 1992)  
Landsat 7 images |
| Romania 1:10,000   | Aerial images scale 1:5,000 (edition 2005)  
GPS measurements |
## Data Sources

### A. Cities Database

<table>
<thead>
<tr>
<th>Database</th>
<th>Data Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bucharest 1 : 2 000</td>
<td>Unclassified maps 1:2 000 Proiect Bucuresti (edition 1981) IKONOS satellite imagery</td>
</tr>
<tr>
<td>170 Cities with more than 5000 inhabitants 1 : 2 000</td>
<td>Aerial images (2005 edition )</td>
</tr>
</tbody>
</table>

### Points of Interests:
- Governmental
- Education
- Health
- Commercial
- Administrative (postal codes)
- Private business...

Data Source:
- Aerial images (edition 2005)
- GPS measurements
Data Integration into CBM Template

Attribute matching

**Roads: 4 main types of roads**

A) Highway - Highway
B) National roads – Major arterial
C) County roads – Minor arterial
D) Village roads – Minor arterial

**Administrative boundary: 3 main types**

A) State boundary - International
B) County boundary – State
C) Territorial Administrative Unit – County
D) City limit boundary - Municipal
The data was migrated manually, using the ArcCatalog Data Loader tool:

- some layers in the Community Basemap template were created with data from two feature classes, at different scales, from Esri Romania’s database (e.g.: roads layer, water bodies, administrative lines, national parks limits, landmark)

- some data in the feature classes needed manual attribute editing before being ready for migration (adding compatible fields, computing attributes), others were edited after the migration (mainly computing attributes with Field Calculator)
Map Templates

- Remove the County Boundary Lines and labels at 288K
- Remove the Administrative Boundary Line Ribbon at 288K

Reason: 3150 territorial administrative units (UAT), with an average surface of 60 sqkm, resulting too much detail for these scales
Map Templates

- Remove the County Boundary labels at 144K
- Remove the Administrative Boundary Line Ribbon at 144K

*Due to the same reason*
• Urban area definition queries:
  - 1:577k "Shape_Area" >6000000 (sqm)
  - 1:288k "Shape_Area" >3000000 (sqm)
  - 1:144k "Shape_Area" >3000000 (sqm)

Reason:
• too much detail for these scales because there are many villages (each of the 3150 UATs has one or more villages under administration)

Annotation instead of labels, because of cache label duplication (sometimes 3 or 4 labels per one urban area)
Map Templates

International Borders

• Tele Atlas International Border not as precise as the rivers
• Derived problem: modifying national parks limits to fit inside the country
Romania Cached Maps

Brasov City
1:18 000

Izvorul Muntelui Lake
1: 72 000
Romania Cached Maps

A1-SB Highway
1: 36 000

Oradea City
1: 18 000
Large Scale Topographic Map
- sneak peak

Bucharest
Constanta
Timisoara
Iasi
Craiova
Cluj-Napoca
Constanta city
Constanta city

Cached as we speak
Conclusions

• The complex datasets with both national and cities coverage were created entirely by Esri Romania

• Efforts to maintain the data updated (e.g. GPS measurements)

• Large scale topographic cached maps will be provided for another 6 cities until the end of the year along with POI

• Minimum data coverage offered by traditional data providers

• Excellent Map Template
Thank you for your attention!

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