MRDB at IGN Belgium

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Generalized data and maps before 2015

- **1:10K**
  - Symbolisation → 2010
  - Updates
  - Only networks and constructions

- **1:50K**
  - Symbolisation
  - Updates

- **1:100K**
  - Symbolisation → 2006
  - Updates

- **1:250K**
  - Symbolisation
  - Updates

CartoWeb

Maps:
- 1:10K + 1:20K
- 1:50K
- 1:100K
- 1:250K
Strategy 2020

Producer

Integrator

Producer

Integrator

Producer

Broker

“ITGI”

“Strategy 2020”
Strategy 2020

Federal Government

Inside-in

Federal data and service providers

GEO-BROKER

Outsider World

Outside-in

World users

World data and service providers

Inside-out

Federal users
New model, update processes and organization

- More resource driven
- More external data
- Continuous update
- Web services
- More product driven
- ?

New data model and update processes
The transitional production

- This new model must be ready in 4 years
- In the meantime …
  - The networks and buildings at 1:10k are still updated with a 3 years cycle
  - We want to go on producing maps
  - Fully updated maps (not only networks and constructions)
The transitional production

Constraints for these maps

- Max 6 years update cycle (IGN decision)
- 50k and if possible 25k
- Max 12 operators
Generalized data and maps from 2015

Only networks and constructions

Updates

1:10K

Updates

1:25K

Symbolisation

1:50K

Symbolisation

1:250K

Symbolisation

Updates

1:250K

CartoWeb

1:25K

1:50K

1:250K
From 1:10k to 1:25k and 1:50k

- **1:10k networks**
- **1:10k buildings and constructions**
- **Updates**

- **Updates**
  - **1:25k path and dirtroads networks**
  - **1:25k buildings and constructions**
  - **Generalization**

- **Generalization**
  - **1:50k path and dirtroads networks**
  - **1:50k buildings and constructions**
  - **1:50k landcover and other themes**

- **Generalization**
  - **Updates**
  - **1:25k landcover and other themes**
From 1:10k to 1:25k and 1:50k

Maps

- Vector products
- Maps
- Cartoweb

<table>
<thead>
<tr>
<th>1:50k buildings and constructions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:50k path and dirtroads networks</td>
</tr>
<tr>
<td>1:50k other networks</td>
</tr>
</tbody>
</table>

1:50k landcover and other themes
From 1:10k to 1:25k and 1:50k

- 1:10k networks
- 1:10k buildings and constructions
- 1:50k path and dirtroads networks
- 1:25k path and dirtroads networks
- 1:50k buildings and constructions
- 1:50k other networks
- 1:25k buildings and constructions
- 1:25k landcover and other themes
- Generalization
- Updates
- Generalization
- Updates propagation and Generalization
- Generalization
- Updates
From 1:10k to 1:25k and 1:50k

Maps

Cartoweb

1:50k other networks
1:25k path and dirtroads networks
1:25k buildings and constructions
1:25k landcover and other themes
Automatic generalization

10K → 50K networks updates propagation
10K → 25K paths and dirtroads generalization
10K → 25K buildings generalization
10K → 25K landuse generalization
25K other themes updates

10K → 50K buildings generalization

25K → 50K other themes generalization

25K maps
50K map
Introduction

- Approach
  - Definition of selection criteria and specifications (completely described in a wiki)
  - Development of tools that allow the data to fulfill these selection criteria and specifications
Paths and dirtroads 10K → 25K

- Python script in ArcGis for a first selection

1. Connected to at least 2 segments and is the only path
2. Connected to at least 2 segments and is the only dead end
3. Connected to at least 2 segments and is the shortest (and the length difference is larger than 25%)
4. Connected to a single road segment
5. Not connected at all to the network
- Python script in ArcGIS

- Deletes empty parcels smaller than the size limit
- Deletes parcels smaller than the size limit
- Merges parcels smaller than size limits with the surrounding ones
- Makes the parcels edges fit to the network segments
- Simplifies contours

Landcover 10K → 25K and 25K → 50K
Buildings 10K → 25K

- BUA production: Python script in ArcGis
  - Same script as for 50K but with different parameters
Generalization of buildings in low density areas for the 50k:

- **In the previous edition:**
  - Generalization of the 1:10k buildings from scratch with Clarity

- **In the current edition**
  - Easier to propagate the updates than to start all the generalization process again.
Buildings 10K → 25K

- Generalization of buildings in low density areas for the 25k:
  - First digital edition → no buildings FC
  - ArcGis tools and not Clarity because:
    - 10K → 25K generalization is much simpler than 10K → 50K generalization:
      - No typification
      - Less simplification
      - Less displacements
      → doesn’t need such sophisticated software
    - 25K product is « only » a cartographic product (no DB) ≠ 50K
    - ArcGis10 is much easier to use than Clarity
Buildings 10K → 25K

Workflow

- **Step 1**: Aggregation of unspecified buildings
  - Aggregation distance: 2m
  - Minimum hole size: 12m
  - Preserve orthogonal shape
Workflow

- **Step 2: Simplify buildings**
  - Simplification tolerance: 5m
  - Minimum area: 50m² for Unspecified buildings

Summary

Simplifies the boundary or footprint of building polygons while maintaining their essential shape and size.

Illustration

- TOO NARROW
- MINIMUM AREA
- TOTAL AREA TOO SMALL
- SIMPLIFICATION TOLERANCE
- POINTER TO A SIDE THAT IS TOO SHORT
Buildings 10K → 25K

-Workflow
  - Step 3: Resolve buildings conflicts

- Easy to use
- Quick
- Minimum Allowable Building Size:
The minimum allowable size of the shortest side of a rotated best-fit bounding box around the symbolized building feature drawn at the reference scale. Buildings with a bounding box side smaller than this value will be enlarged to meet it. Resizing may happen nonproportionally resulting in a change to building morphology.

But:
- Remaining conflicts
- Only a good enough solution
Evolution of cost production since the first digital 50k edition

- Ed1: 12 persons for 8 years
- Ed2: 9 persons for 6 years
- Ed3: 4 persons for 5.5 years
- Ed4: 5.5 persons for 6 years

Only networks and constructions were updated

(Cost in man-years)
Questions ?