Implementation of Automatic Generalisation in the Production Process of the 1:50,000 Map Series

IGN Belgium

ICA 2013, Dresden
Intro

- 3rd edition of the 1:50 000 map series
- Update cycle ends mid 2014
- Reference scale: 1:10 000
- Automatic generalisation coincide as much as possible with the result after interactive generalisation
- Only the road and building feature classes are updated
Update strategy

- **Roads**
  - Incremental updates (propagation)

- **Buildings**
  - Regenerate the whole feature class
Update strategy

- Buildings
  - Non-specified buildings
  - Specified buildings
Update strategy

- **Buildings**
  - **Non-specified buildings**
    - Depends on the area
      - Dense: creation of built-up area (ArcGIS script)
Dense
Update strategy

■ Buildings
  ▪ Non-specified buildings
    – Depends on the area
      ▪ Dense: Creation of built-up area (ArcGIS script)
      ▪ Non-dense: generalised automatically (Radius Clarity)
Non-dense
Update strategy

Buildings

- Non-specified buildings
  - Depends on the area
    - Dense: Creation of built-up area (ArcGIS script)
    - Non-dense: generalised automatically (Radius Clarity)

- Specified buildings
  - Still generalised manually
Done work

- Fit our data model in the Clarity data model
- Topology
  - Making use of manifolds (mix of REF and GEN data)
- Representation
- Process methods
- Agent technology
Process methods

Partitioning (meso-agents)

- Elimination of too small buildings (<50m²)
- Replace by square polygon (50m²<…<400m²)
- Aligned with nearby linear objects
- Typification
Agent technology

- Simplification of buildings which are larger than 400 m²
  - Squareness constraint
  - Granularity constraint
  - Enlarge rectangle constraint
- Displacement
Problems/difficulties

- Simplifying big buildings
  - Rather too much simplified
  - Local width constraint: buggy or doesn’t match specification

- Displacement
  - Problems in corners
  - Contiguous buildings before displacement no longer contiguous after generalisation
  - Impossible to give different building classes different maximum displacement distance
Problems/difficulties

- Typification
  - “after point typification, the centre of gravity of the remaining points is the same as before”
  - Still leaves too many buildings in the dataset
Result

- Gain time?
  - Yes
- Quality improvement?
  - Work in progress
  - Verification still needed