Automatic generalization
ICA/EuroSDR workshop Barcelona

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Objectives

- Fully automated generalization of the 1:50,000 map
- Input is the Top10NL dataset 1:10,000 (= 1:25,000 map)
- The new map can differ from the old handmade map
- Reuse preliminary research
- No new requirement analysis
- Try and adjust (trial-and-error)
- Use available software
- User participation
Characteristics Top10NL dataset

- Digital Landscape Model (DLM)
- Object Oriented
- Multiple geometries
  - e.g. road polygons and road centerlines
- Multiple attribute values
  - e.g. road use or street names
- Roads, Water and Land use polygons cover the whole of the Netherlands
- Overlap is indicated by local Z levels (0,-1,-2)
Workflow

- Check and repair input data
- Add lacking objects (calculation or external sources)
- Schema conversion
- Partitioning
- Data generalization
- Map visualization

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Partitioning

- Highways and main roads
  - barriers with almost no overlapping objects
- Additional or artificial objects needed to close polygons at the coastline
Tools

β ArcGIS 10.1
Model builder
  • Spatial analyst
  • Network analyst

β FME 2012
  • FME Extension for ArcGIS

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kadaster
Roads

- Merge Divided Roads
- Collapse Road Details
Roads 10K to 50K
Replace road polygons by centerlines
Harder than you think

Terrain with road polygons

Unwanted terrain with road centerlines
Remove adjacent roads
Collapse parallel roads
Thin road network
Dissolve similar land use
Amalgamate (to) small terrain
Aandachtspunten

- Thinning
- Kleine bosjes en watertjes
Tools

Reconnect land use and water polygons
Building generalisation:

- Convert to build-up area
- Expand to minimum size
- Simplify
- Convert function to symbols
- Displacement
- Resolve conflicts
Tools

- Model builder
- Simplify Building
- Resolve Building Conflicts
- Delineate Buildup Areas

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Gebouwen Top50 (displaced)
Result

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User participation 1
User participation 2
Current projects

Optimization of current workflow 10k > 50k
Automatic generalization of 10k > 50k (last month successful design and production of a 1st release)