Lantmäteriet, Sweden

Mattias Frick
Mikael Johansson
Background

• Lantmäteriet today have manual production in 5 different scales
• These map series does not fully harmonize with each other
• The idea of modernizing the structure, both for the features and for the map text, has evolved over several years.

• In 2014, a collaboration with Dutch Kadaster was launched
• A pilot project trying out Dutch models on Swedish data was successfully conducted

• Project start 2015 and a agreement with Dutch Kadaster on accessing there's models.
Project scope

Automatic generalisation

Automatic text placement
## Project groups

<table>
<thead>
<tr>
<th>Automatic generalisation</th>
<th>Specifications</th>
<th>Text</th>
<th>Datamodells</th>
</tr>
</thead>
</table>
| Methods and models for automatic generalisation | Harmonize existing specifications | Creating a model for linking text to objects
Methods for automatic text placement | Adjusted data models suitable for automatic generalisation |
Automatic generalisation

• **Goal:**
  – Fully automatic generalisation from one *Master database (SE10)*
  – Model generalisation (to *DLM*)
  – Cartographic generalisation to *DCM*
  – Use partitioning and parallel processing

• **First out:**
  – *SE10* -> *SE50*
  – Land cover (including hydrography and areas with buildings)

• **Then:**
  – Other themes and dependencies between different themes
  – Other levels of details (*SE100, SE250, SE1M*)

• **We use:**
  – *ArcGIS Desktop with ModelBuilder, FME, Python* and *ArcObjects/ArcPy* (if we have to)
And we are working on the models...
Automatic generalisation – questions 1

• **Model** for the total workflow: *Star model* or *ladder model*?

• How can we get good **actuality** in our generalised data?
  – Generalize a totally new version every time or do partial updates between the generating of totally new versions?

• How should we **distribute** the data to our users when we have done updates in the generalised data?
  – It may be difficult to guarantee stable Object ID's in generalised data.
Automatic generalisation – questions 2

• **Maintaining** of the models?
  
  – It must be relatively easy to adjust the models e.g. when new versions of **ArcGIS, FME** and **Python** will be released.

• We are positive to **exchange** knowledge and experience.
Place names and map texts - today

• Map texts and features are not linked to each other

• Place names in our *Place name register*
  and place names in many of our other databases
  have no connection.

• **This causes several problems:**
  – When searching for place names
  – When updating place names
  – For automatic text placement
Place names and map texts – next step

The future:
– It must be easier to obtain information about the place names
– We must provide correct place names in all our products
– Automatic text placement is needed

Actions:
– All place names and other map texts must be represented by features with geometries that shows the area they applies to
– Store placement information as attributes to the point, line and area features
– Develop good automatic text placement:
  • For batch processing
  • For on-the-fly generation
Place names and map texts - questions

• Can we always use automatic text placement or do we also have to store placed text with high quality?

• What type of geometries do we have to use for different types of texts to get good enough quality in the automatic text placement?

• Can we find a program for automatic text placement on-the-fly that give us good enough quality for our web map services?
Thank You For Your Attention!

Mattias Frick: mattias.frick@lm.se

Mikael Johansson: mikael.s.johansson@lm.se