Automatic placement of text for objects that do not have a clear geographic definition

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Long term timeline

A historical map from Årsunda parish in Gästrikland, dated 1664

Contemporary digital map, Malmö
Agenda

• Very short presentation of the automatic generalisation project
• Text and automatic text placement
The project MTP (Modern Topographic Production)

Presentations at ICC
  • Wednesday, July 5, 2017 2:50 PM - 3:50 PM
  • Thursday, July 6, 2017 4:10 PM - 5:30 PM

Malmö
Main objectives MTP

• Increased map production effectivity
• A more flexible production line
• Harmonized content of the topographic databases
• Automatic text placement
• Automatic generalisation of smaller scale maps
  ➢ Starting with 1:10 000 ⇒ 1:50 000
Development environment MTP

- ArcGIS Desktop version 10.5 with Maplex, ModelBuilder and FME Extension for ArcGIS

- FME Desktop 2016 Oracle Edition

- Proprietary tools developed with ArcObjects (C#) and Python (ArcPy)

- JavaScript is used to create widgets for the web
Current data model for texts

- Texts as stand-alone objects without connection to real world objects (stored as annotations)
- Points or polylines
Desired data model

- Texts as attributes to real world objects

- Where the **type**, **geometry**, **size** and **other attributes** of the real world object can be used to

  - decide in which **scales** the labelling will be done
  
  - decide **size** and **font** for the text label
  
  - find the best **text placement**
Work to do in the base map 1:10 000

Automatically store the texts as attributes in the real world objects

- The work has not been started yet, only some testing
- Using geoprocessing tools
- Might be necessary to develop custom tools
- Manual edits can be necessary
Base map 1:10 000

Real world object
Attributes
• Geometry
• Text
• Etc.

Annotation
Attributes
• Geometry
• Angle
• Etc.

Automatic generalisation, labelling and conversion to annotations

1:50 000

Real world object
Attributes
• Geometry
• Text
• Etc.

Annotation
Attributes
• Geometry
• Angle
• Etc.

1:100 000

Real world object
Attributes
• ... 

Annotation
Attributes
• ... 

Etc. smaller scales
Texts belonging to real world objects without map representation today

- Mountains, valleys, bays, building areas
- Invisible objects will be created
Invisible objects sample
• Bays and straits
Invisible objects sample
• Mountains and valleys

1:15 000
Questions to discuss

1. Other’s experiences of labelling
   1. Automation level
   2. Product types

2. Comparison with manually placed texts

3. Software

4. Performance
Thanks for your attention!

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