New National Maps for Switzerland

swisstopo multi-scale production line / December 3rd/4th 2015

Dominik Käuferle
DCM production architecture

Genius-DB
ArcGIS Applikation

GenDab
ArcGIS
Geoprocessing:
Arcpy, Python,
ModelBuilder

SysDab
expand

GenDV
FME, ArcGIS
Geoprocessing

without foreign territory

with foreign territory

realised or in operating
in project
planned
1:10 000: first release June 2016

Digital Cartographic Model 1:10’000 = new national map 1:10’000

- Fully automated production, perimeter Switzerland
- Source TLM, DTM and DCM25 rock/relief-rasters
- Little automatic generalization (vegetation)
- Automatic text placement
- Digital product
- Replaces prior ‘simple’ map:
1:10 000

Untere Vorstadt

Mühlethal

Chriesigass
1:10 000
1:25 000: in production

Digital Cartographic Model 1:25 000 = new national map 1:25 000
1:25 000

30 map sheets published
1:50 000 : production starts 2016

Digital Cartographic Model 1:50 000 = new national map 1:50 000
Automatic generalization 1:50 000

test output october 2015
Automatic generalization 1:50 000

TLM vs. DCM50 test output
Automatic generalization 1:50 000

ArcGIS geoprocessing models

Currently 85 models with 88 different geoprocessing tools, which are called ~3 100 times in total.
Automatic generalization 1:50 000
4 step dev process

modeling in ArcGIS ModelBuilder
create Python scripts
run Python scripts as batch
quality assurance

development & testing
agile / scrum

production →
## Automatic generalization 1:50 000

processing times

<table>
<thead>
<tr>
<th>Map sheet</th>
<th>Duration</th>
<th>Process diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>224 Olten</td>
<td>13.4h</td>
<td><img src="image1" alt="Process diagram for 224 Olten" /></td>
</tr>
<tr>
<td>225 Zürich</td>
<td>25.8h</td>
<td><img src="image2" alt="Process diagram for 225 Zürich" /></td>
</tr>
<tr>
<td>226 Rothrist</td>
<td>23.9h</td>
<td><img src="image3" alt="Process diagram for 226 Rothrist" /></td>
</tr>
</tbody>
</table>
# Wishes list

<table>
<thead>
<tr>
<th>Research</th>
<th>Industry</th>
</tr>
</thead>
<tbody>
<tr>
<td>Explore integrated 2D/3D/4D modelling and visualization</td>
<td>Expand cartographic toolset for geoprocessing</td>
</tr>
<tr>
<td>Develop better concepts of quality and ethics for geographic information</td>
<td>Make all (geoprocessing) tools 64-bit or better</td>
</tr>
<tr>
<td>Develop better concepts to deal with semantics and fuzzy data</td>
<td>Support Standardization and Interoperability</td>
</tr>
</tbody>
</table>
3D Viewer will be released in 2016