Multirepresentation Databases and Need for Generalization at swisstopo

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MRDB Architecture

Topographic Landscape Model TLM

- Reference Data. Base DLM for most topographic products such as maps and landscape models.
- Primary geometry, captured data, 1m - 5m accuracy
- Including topology
- 3-dimensional, grid model

- State of development at swisstopo: concept
MRDB Architecture

Digital Cartographic Model DCM

- Basis for cartographic products at a certain scale (-range)
- Cartographically generalized
- Including topology
- 2-dimensional

- State of development at swisstopo: preliminary study
MRDB Architecture (old concept)

Generalization Visualization

Capturing Integration Verification

- DLM1M
- DCM 1M
- DCM 500
- DCM 200
- DCM 100
- DCM 50
- DCM 25

TLM
MRDB Architecture

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<th>TopGIS-CH</th>
<th>Genius-DB</th>
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Capturing Integration Verification (Generalization?)

Generalization Visualization
MRDB Dataflow

Capturing Integration Verification
Today’s vectordata of swisstopo

• **VECTOR25** and **VECTOR200**
  → Map based GIS-data
  → Full coverage, except buildings (in progress)
  → With topology, OID, year of change
  → Data delivery: incremental updates (comparer)

• Digital Elevation Model **DHM25** and **DTM-AV**
  → DHM25: digitized contour lines and ridges from Map25
  → DTM-AV: approx. 1 point per m² (laserscanning)

• **SwissNames**
  → Flat text allocated by coordinate
Need for Automatic Generalization

• Model generalization and cartographic generalization:
  ➔ from VECTOR25 (possibly via TLM) to DCM25
  ➔ from DCM25 to DCM50
  ➔ from DCM50 to DCM100
  ➔ from VECTOR200 (map based DLM) to DCM200
  ➔ ...

• Support for semiautomatic generalization (semantic, geometric and cartographic) of incremental updates
  ➔ from TLM to DCM25 and so on

• Data matching between DCM100 and DCM200
MRDB Dataflow

Capturing Integration Verification

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