Advances in Service Driven Cartography

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I. Iosifescu, C. Iosifescu, N. Panchaud, R. Eichenberger, R. Sieber & L. Hurni
Institute of Cartography and Geoinformation, ETH Zurich, Switzerland
Motivation and Goal

- Evolution of digital cartography:
  - computer-assisted cartography ➔ multimedia cartography ➔ web cartography ➔ service driven cartography

- Advantages of service-oriented architecture (SOA) for cartographic products:
  - User perspective: thin-client, no software to install, more processing power for large data, works everywhere (e.g. mobile)
  - Cartographer perspective: automatic cartographic updates, flexible edit and update processes, explicit cartographic symbolization, modern cartographic workflow

- Application of service driven cartography for Atlases!
Service Driven Cartography in a Nutshell
Descriptive Symbology in Service Driven Cartography
Descriptive Masking in Service Driven Cartography
Descriptive Masking in Service Driven Cartography
Descriptive Masking in Service Driven Cartography
First Application of Service Driven Cartography
First Application of Service Driven Cartography
Advances in Service Driven Cartography

- Service driven cartography for 2D maps
  - Most frequent types of 2D maps found in Atlases

- Service driven cartography for 3D visualizations
  - Panoramas and block images

- Service driven cartography for interactive functions
  - Interactive change of symbology and classification, more advanced map manipulation functions
Service Driven Cartography for 2D Maps
Service Driven Cartography for 2D Maps
Service Driven Cartography for 2D Maps

Atlas of Switzerland 3

after Ortner 2011
Service Driven Cartography for 2D Maps

Atlas of Switzerland 3 vs. map recreations using service driven cartography

after Ortner 2011
Service Driven Cartography for 2D Maps

Atlas of Switzerland 3 vs. map recreations using service driven cartography
Service Driven Cartography for 2D Maps

Atlas of Switzerland 3 vs. map recreations using service driven cartography
Service Driven Cartography for 3D Visualizations

after Panchaud 2012
Service Driven Cartography for 3D Visualizations

after Panchaud 2012
Service Driven Cartography for Interactive Functions

- Service driven change of symbology
Service Driven Cartography for Interactive Functions

- Service driven change of classification
Conclusions

- Service-driven Web atlases are possible and practical
- Service driven maps can be created with comparable cartographic quality with maps from established atlases
- New advances demonstrate high quality:
  - 2D maps
  - 3D visualizations
  - Support for interactive functions
- Additional services can be leveraged:
  - OGC Web Services (WFS, WPS, etc…)
  - Custom geoprocessing services based on well-known GIS libraries (GDAL/OGR) and web service composition platforms (JOpera)
Thank you for your attention!

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