A Semantic INSPIRE-Conform Transformation of A Cadastre Conform 3D Building Model of Bavaria

3D Building Models in LoD2 with the cadastral map of Augsburg
The Working Committee of the Surveying Authorities of the Länder of the Federal Republic of Germany (AdV) is the German umbrella organisation of the authorities of the 16 Länder of the Federal Republic of Germany competent for land surveying and cadaster and of three federal authorities. (source AdV Homepage)

Central Office for House Coordinates, Building Polygons and 3D Building Models” (ZSHH) – the nationwide sales agency for Building Models.

=> Standards:
- CityGML 1.0.0 (AdV, 2015a)
- GeoInfoDok 7.0

Nationwide uniform data structures and data formats
Building Model – Level of Detail 2 (LoD2)

AdV – ALKIS GeoInfoDok 7.0
Roof prototypes

Acquisition of LoD2 by semi-automatic extraction from LiDAR point cloud
~7.3 million Building Models (of ~8.5 million) finished (green areas).

Storage of CityGML compliant data with open source database profile 3DCityDB.

Export as well to
- KML
- COLLADA

By FME-Workbench also to
- .skp
- 3D-Shape
- .dxf
- .3ds
Application Schema 'CityGML' (AdV)

compatible!

Application Schema ALKIS (GeoInfoDok 7.0)

compatible?

CityGML INSPIRE Buildings Core3D ADE

Bavarian Agency for Digitisation, High-Speed Internet and Surveying

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Joachim Batscheider
Compliance of the source data to the source schema
• Test tool for source data.
• Fix problems of source data.
  • Are all Building-Model solids water proof?
  • Are all Building models free of self intersections?
  • Are all surfaces planar?
  • Are all normal vectors directed to outside?
  • Are all wall surfaces vertical?

=> Transforming process without exception handlers …
Mappingtable AdV standard -> INSPIRE BU
- 1:1 mapping
- case selections
=> XSLT code

source: wikipedia
Proof of concept successfully finished!

Test of INSPIRE data

Test report for INSPIRE data
Questions?

Thanks for your time!