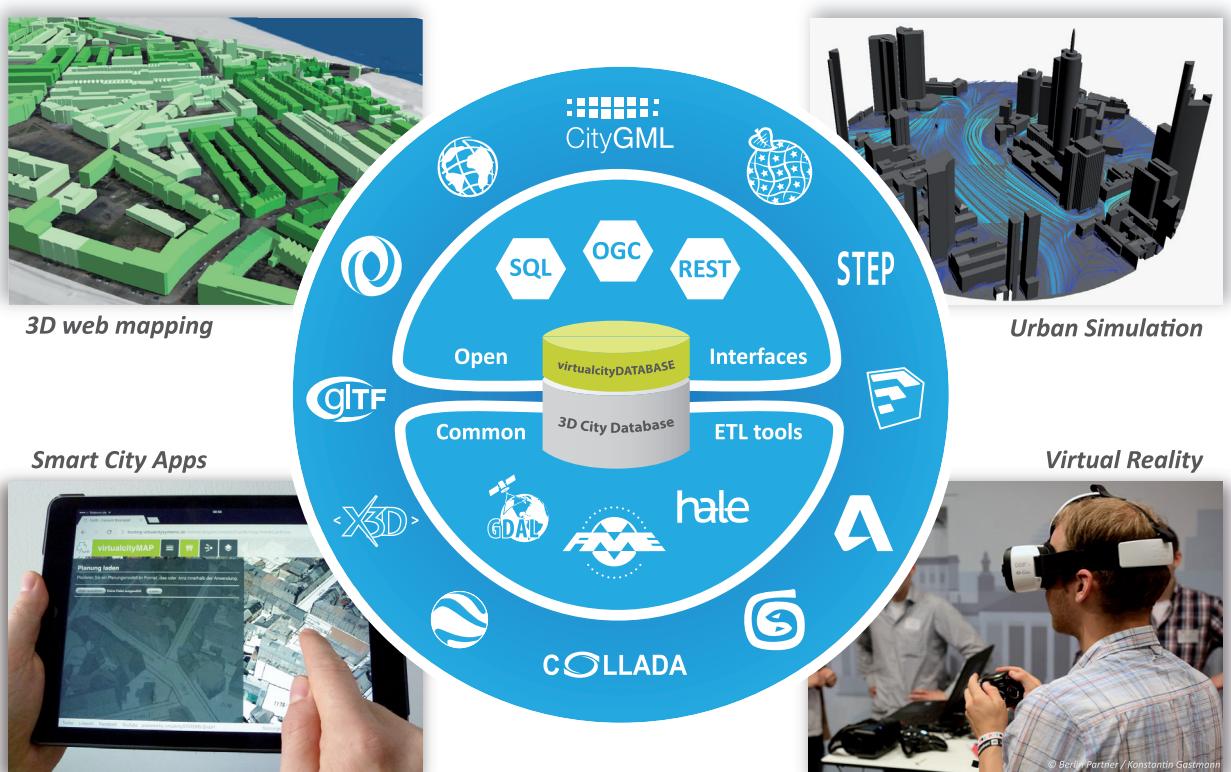


City models in all formats

virtualcityWAREHOUSE



Many 3D data formats can be found in the industry - each tailored to a specific domain application. Thanks to international standards like CityGML, city models can be maintained in a central data source (e.g. in the 3D City Database) and do not have to be stored redundantly in different isolated applications.

Don't do everything yourself

A self implemented transformation between different systems often requires a deep knowledge about input and output formats. Using common commercial or free ETL software (extract - transform - load) can save a lot of time. They provide a set of tools that facilitate to customize a transformation workflow.

The virtualcityWAREHOUSE is based on the Feature Manipulation Engine (FME) by Safe Software. FME

supports numerous industry formats and has gained a wide popularity in recent years.

Desktop or Cloud?

The virtualcityWAREHOUSE can be used with FME Desktop or FME Server - either on a local machine or in the FME Cloud. A server-side connection allows for integration into our 3D web map application. The user can select objects of a city model intuitively and a conversion process is started in the background.

Data import

We also offer individual solutions for importing data from external sources into the virtualcityDATABASE. Automatic data migration from ArcGIS, Revit and OpenFlight have already been implemented by us.



virtualcitySYSTEMS

Key features virtualcityWAREHOUSE

- **Works on desktop, intranet, internet or cloud-based infrastructures**

- **Supported export formats:**

- OGC CityGML (v2.0)
- OGC KML
- DXF and Autodesk DWG
- Autodesk 3ds (3D Studio Max)
- ESRI 2D/3D Shapefile
- ESRI FileGeoDatabase
- Trimble SketchUp

- **Export filters:**

- Object ID
- Spatial filter (bounding box or polygon)
- Feature class and Level-of-Detail (LoD)

- **Coordinate transformation during exports**

- **Advantages by using FME:**

- Easily extendable for other export formats
- Already in use in many offices

- **Advantages by using Oracle/PostGIS:**

- Supported by all spatial ETL tools
- Output functions to GeoJSON, X3D etc.



Use case: Open Data Download Portal Berlin

In march 2015 the Berlin 3D city model has become available as Open Data and can be downloaded from a portal that runs on a cloud-based virtualcityWAREHOUSE. The underlying virtualcityDATABASE data source is hosted on Amazon RDS. FME jobs are processed in the FME Cloud. The portal has been realized on behalf of Berlin Partner.

Berlin Partner
for Business and Technology

OPEN DATA



Additional open interfaces

- **virtualcityDATABASE (3DCityDB) tools:**

- CityGML Import/Export
- Additional export module for KML, Collada and glTF
- WFS (OGC-, ISO- and INSPIRE-compliant)

- **CityGML converter:**

- Mapping from Shapefile to CityGML
- Export to ISO STEP for numeric simulation
- Export to tiling service (Collada, glTF)

System requirements

- **FME Desktop or FME Server 2014 SP4**

- **virtualcityDATABASE / 3D City Database**

- JRE 1.7+
- Java Servlet Container (Apache Tomcat 7)

CityGML and FME: How does it work?

Reading and writing CityGML data with FME has its pitfalls. In our training seminar we guide you through the more complex concepts and give advices which transforms to use. The seminar also shows the user how to extract information correctly from 3D City Database.

CityGML



The regular 2-day training program is in German only. Please contact us if your are interested in an English seminar. We will arrange an individual date - either at your place or in our office.

Want to learn more?

Visit our website at www.virtualcitysystems.de/en and follow us on our social media channels



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