

CityGML and 3D City GIS

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Agenda

- CityGML and Bentley Map
- Using FME to import CityGML
- Produce a panorama with i-Model optimizer for iPad
- Use Navigator for iPad to view and markup Panoramas.



Modeling

Processing



Raster/Vector

Processing

Convert 3D models to CityGML

- 3D models in 3DS or DWG standard tools
 - Directly reference to MicroStation
 - Note referencing model to GIS features
 - Copy selected models into active file
 - Drop to component pieces
 - Promote to CityGML data model using provided tools
 - Assign any other attribution
 - Name, description, floors, heights, LOD
 - Export to CityGML using FME
 - View in viewer





Convert 3D models to CityGML

- 3D models in 3DS or DWG Custom Promote
 - Build solid from existing models using solids tools
 - Use custom promote tool to evaluate solid and extract component pieces
 - Custom tools assigns CityGML features based on geometric properties
 - Vertical walls
 - Horizontal roof
 - Further selections can be made based on level or symbology.
 - Assign any other attribution
 - Name, description, floors, heights, LOD
 - Export to CityGML using FME
 - View in viewer





Importing CityGML with FME

- Start with Bentley Map CityGML Model
- Import using FME Interface
 - Mapping to CityGML features done automatically
- Demo
 - Import CityGML and GML via FME
 - Export to iModel
 - Create optimized iModel
 - Display on iPad

| 🏟 Import v | ia FME | | | | | 23 |
|----------------------------|--|---|-------------|-----|--|--------|
| - FME Data | FME Data Set | | | | | |
| Data Set | Data Set CITYGML:C:\projects\Denmark\2011\CityGML\Svendborg3D_v1.0.xml | | | | | ml |
| - Filtering an | d schema mapping | J | | | | |
| | | | | | | |
| EuildingPart | | | | | | |
| | | | | | | |
| | | | | | | |
| ÷VR | WallSurface | | | | | |
| | | | | | | |
| Mapping for class Building | | | | | | * |
| Target | class | | (as source) | | | |
| Hide | Advanced | | | Run | | Cancel |
| | | | | | | : |



Advanced Texture Creation/Editing

- Create Advanced textures with simple digital images
 - By rectangles, ideal for facades _
 - By points, ideal for roofs
- Easy export to Google Earth (KML, KMZ), Collada, 3D PDF
- Animation creation







Data provided by Quebec City, Canada



Issues with provided model

- CityGML has a defined set of properties
- Properties can be added but receiving model needs to be adapted to receive them.
- Building and Building Part had extra properties
 - Object Name and Object Type were non standard with spaces and had to be manually mapped
- These were added to the current CityGML schema

| Schema mapping validation conflicts | | | | | | |
|--|---|---------------|---|--|--|--|
| | It least one conflict has been found in the schema mapping where the source class doesn't match the arget class. | | | | | |
| | Source class | Target class | Conflict | | | |
| | BuildingPart | Building Part | Target property missing for property 'Description (Description)'. | | | |
| | Building | Building | Target property missing for property 'Description (Description)'. | | | |
| | | | | | | |
| If you want to continue, the source classes of concern will be remapped to automatically generated matching target classes. | | | | | | |
| | | | Continue Cancel | | | |
| | | | | | | |





Converting i-Model to iPad format





