



Denmark in 3D

Stora Chefsmöte, 2.-4. September 2019,
Mariehamn, Finland
04.09.2019

Agenda

- Why? Background for our project.
- What? is "Denmark in 3D".
- Where? Application areas of "Denmark in 3D"
- Ongoing 3D-activities in SDFE
- Questions?



Why?

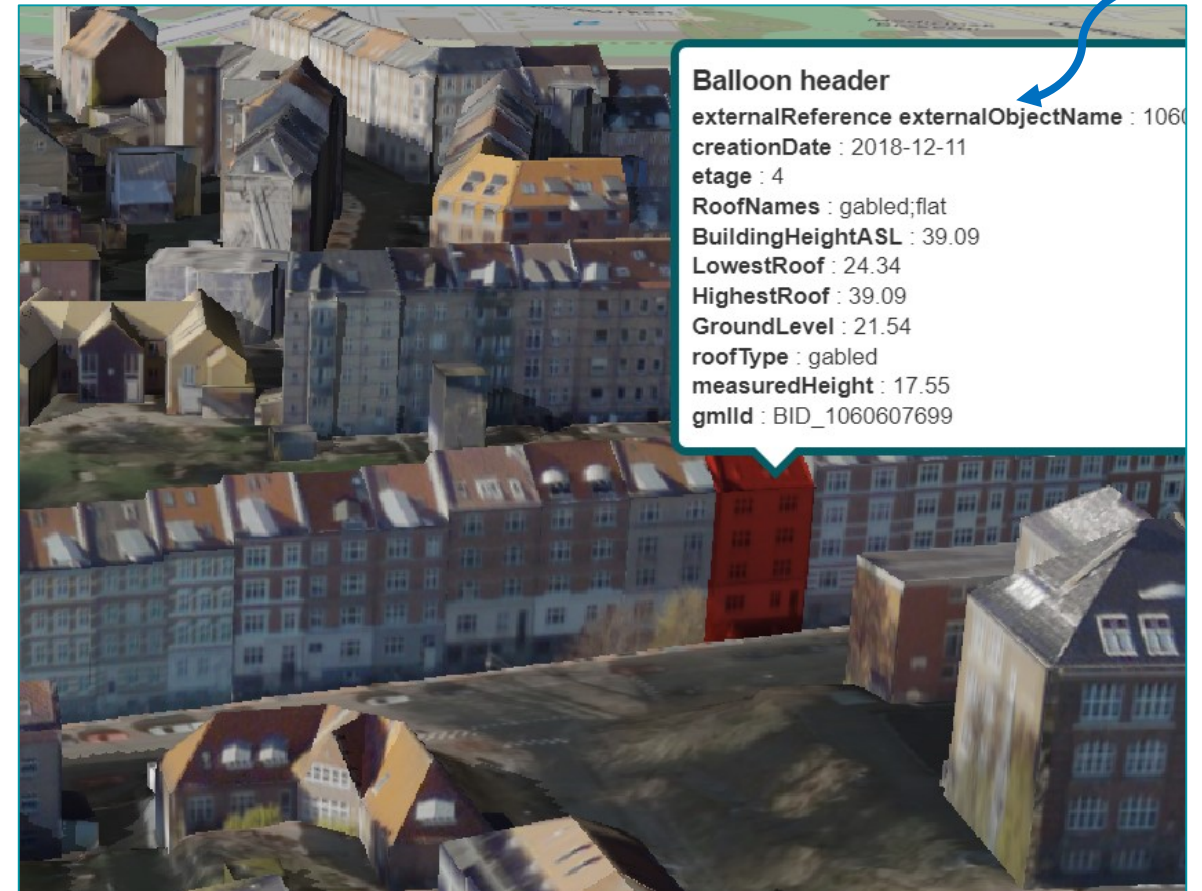
- Instigator: the Danish Ministry of Taxation
- SDFE is calculating and delivering *geographical variables* to the new assessment method for public value estimation of 1.7 million owner-occupied homes and 0.5 million other properties in Denmark
- However, the Danish Ministry of Taxation has not offered funding for a 3D-model on a national scale.
- Therefore, SDFE initiated a 3D-working group to identify joint public management areas and use cases for such a potential national 3D-model, as well as examination of technical solutions and development of 3D-prototypes.



What is “Danmark in 3D”?

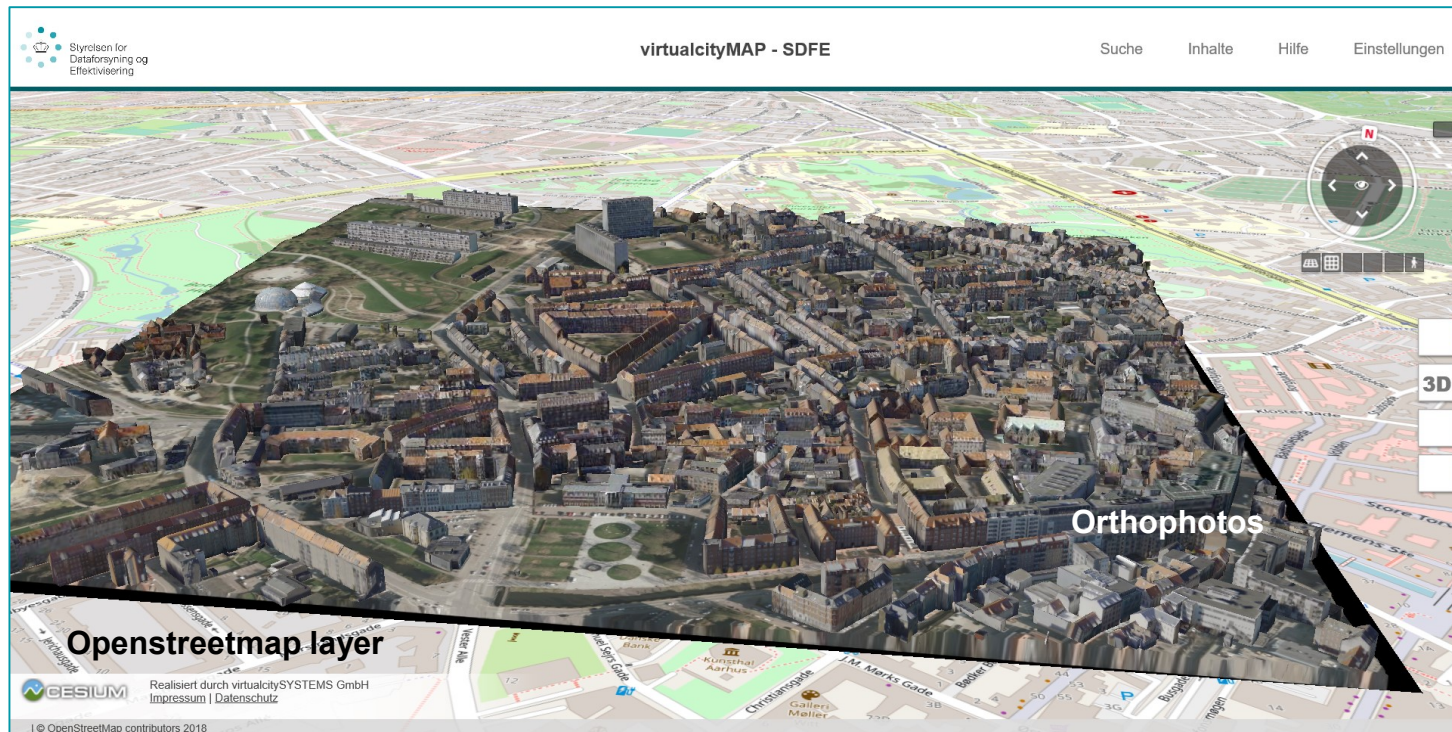
- An object-based 3D model on national-scale of all registered GeoDanmark-buildings integrated with the digital terrain model.
- Each building have a unique ID and can be linked other geospatial data and registers.
- Shall be produced in:
 - Open-source format (currently CityGML)
 - Minimum level of detail LOD2.0.
 - Updating frequency linked to GeoDanmark-buildings.

Example of link to register of buildings and dwellings




Object-based 3D-city model in LOD2

Development of 3D-prototype in LOD2




- **What:** a semi-automatically (70/30) produced object-based 3D-model.
- **Where:** 1 km² Aarhus centre and 1 km² Aarhus suburb.
- **Input data:** building theme from GeoDanmark, digital surface and terrain models, oblique photos and relevant registry of housing dwellings.


Video demonstration of 3D-prototype in LOD2





Styrelsen for
Dataforsyning og
Effektivisering

virtualcityMAP - SDFE

 Search

 Content

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Content

LoD1 Building Models

LoD1 - automatic

LoD2 Building Models

LoD2 - edited (white)


LoD2 - automatic transparent (red)


LoD2 - automatic (grey)


LoD2 - textured ☒

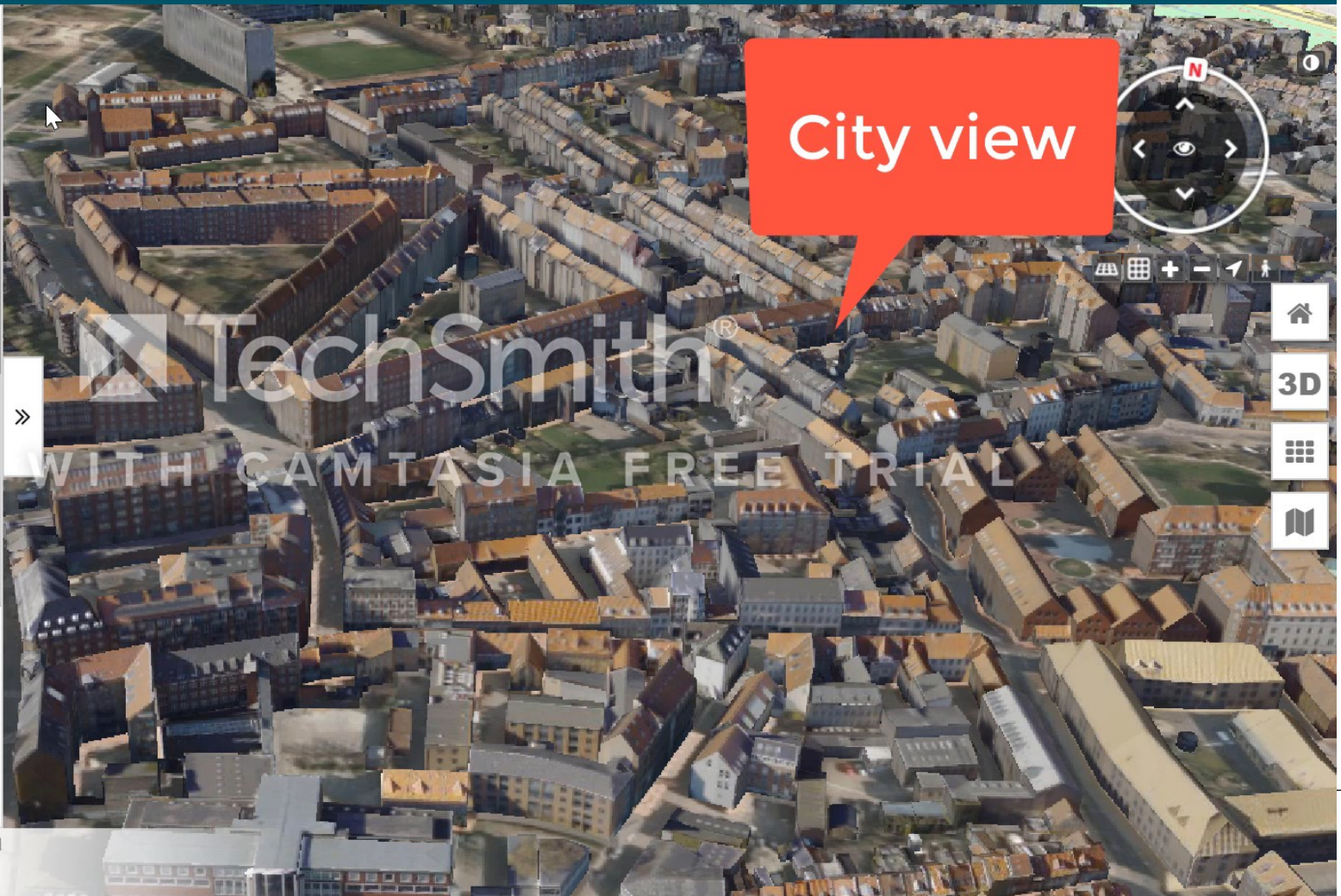
3D objects

Trees

 Create PDF

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 Reset settings



City view

MADE WITH CAMTASIA FREE TRIAL

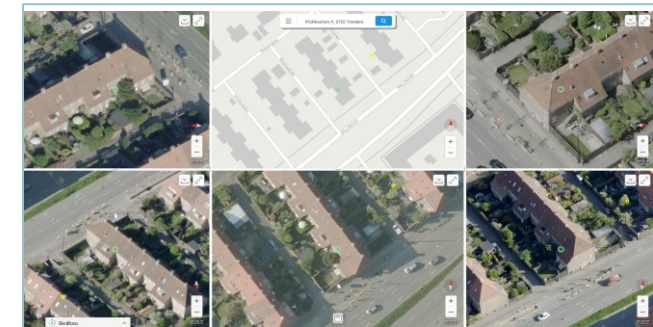
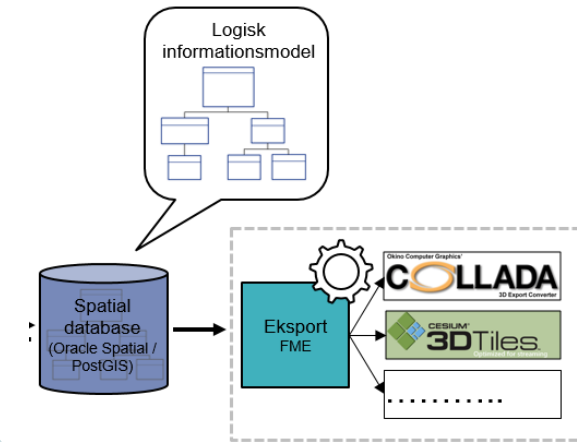
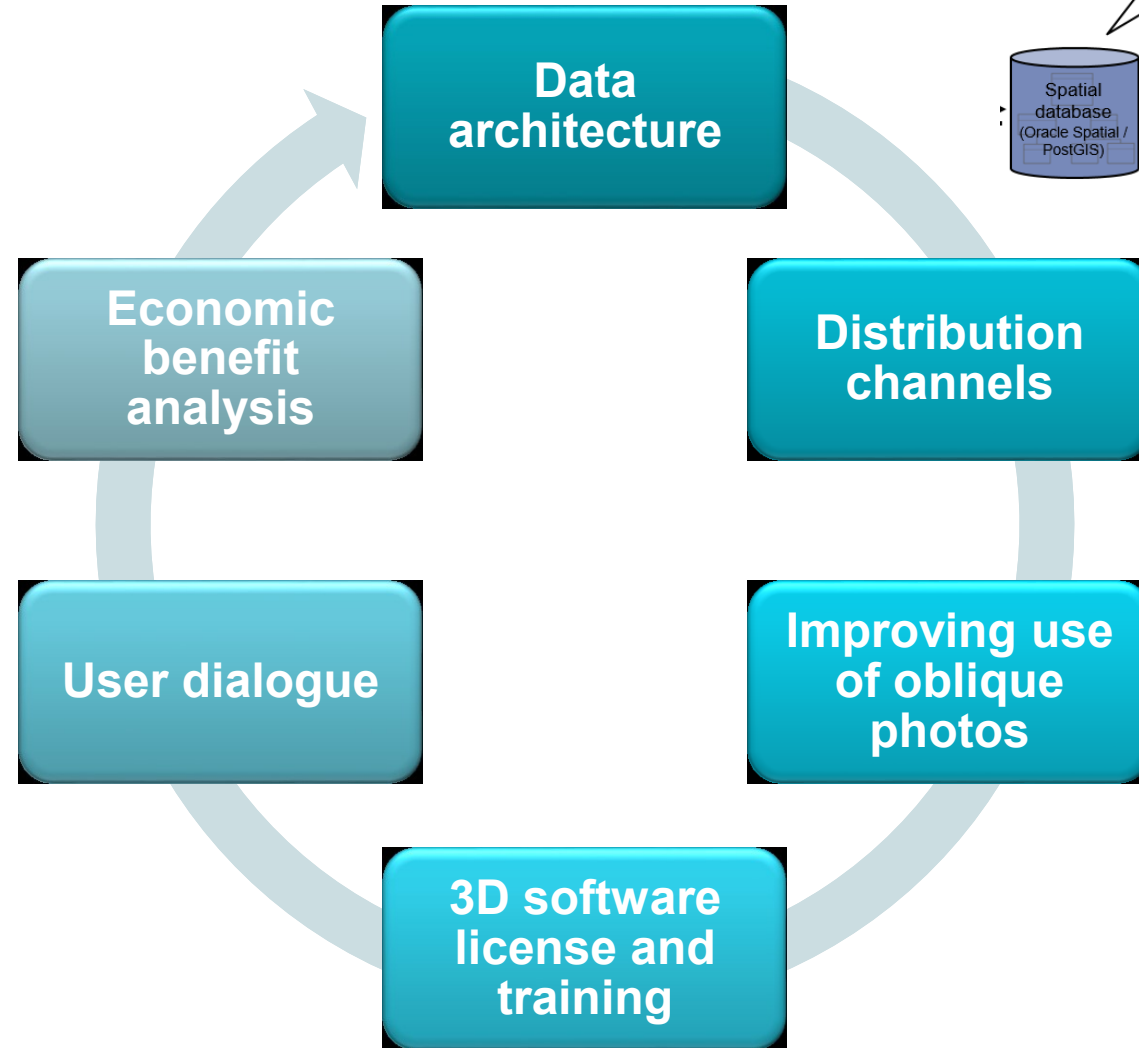
TechSmith®

Position - x: 574664.04, y: 6224425.77, z: 15.04 | © OpenStreetMap contributors 2018

Application areas of “Denmark in 3D”



3D-activities in SDFE



Questions?

- What has been the driving forces behind your 3D national mapping effort? (Governmental, local authorities or private companies?)
- What are the main use cases?
- How have the funding been solved?
- Are data free and accessible for everyone?