

3D modeling of buildings in Brussels -Capital Region by combining stereoscopic images with LiDAR and vector data

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UrbIS Large scale reference map of Brussels Capital Region

- Topographic data (UrbIS-Topo)
- Administrative data (UrbIS-Adm)
- Thematic data (UrbIS-Map)
- Orthophotos (UrbIS-Ortho)

Surface : 160 km²
> 250.000 buildings



Project in 2012...

Scope :

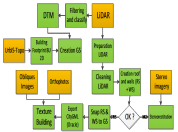
- Data acquisition (Stereophoto, Orthophoto, LiDAR, Oblique imagery)
- Creation of a DTM
- Update of 2D buildings
- Creation of 3D buildings and 3D bridges

3D building (LOD 2) = Groundsurface (GS) + Walls (WS) + Roof (RS)

Partnership :



Methodology – Overview

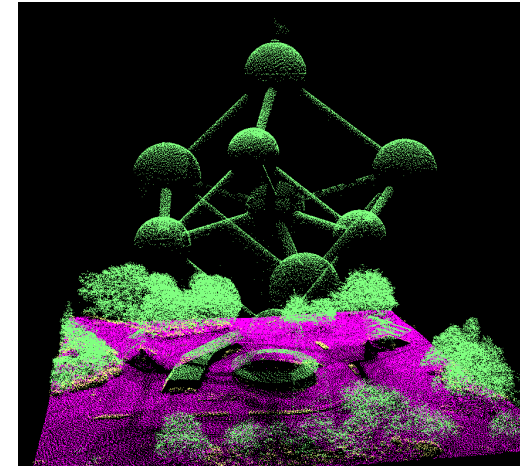


Data source

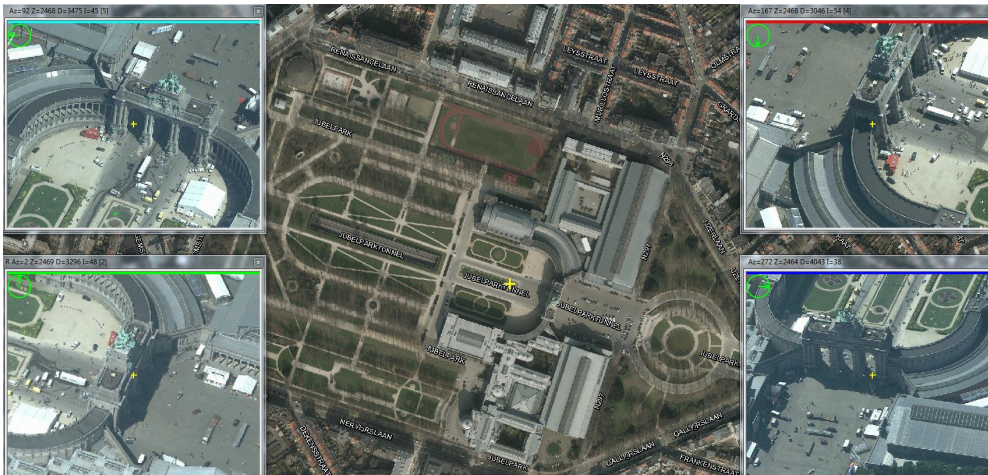
Stereo couples/ Orthophotos



LiDAR



Oblique images



UrbIS-Topo



Data source

Stereo couples/ Orthophotos

- 7,5 cm

Oblique images

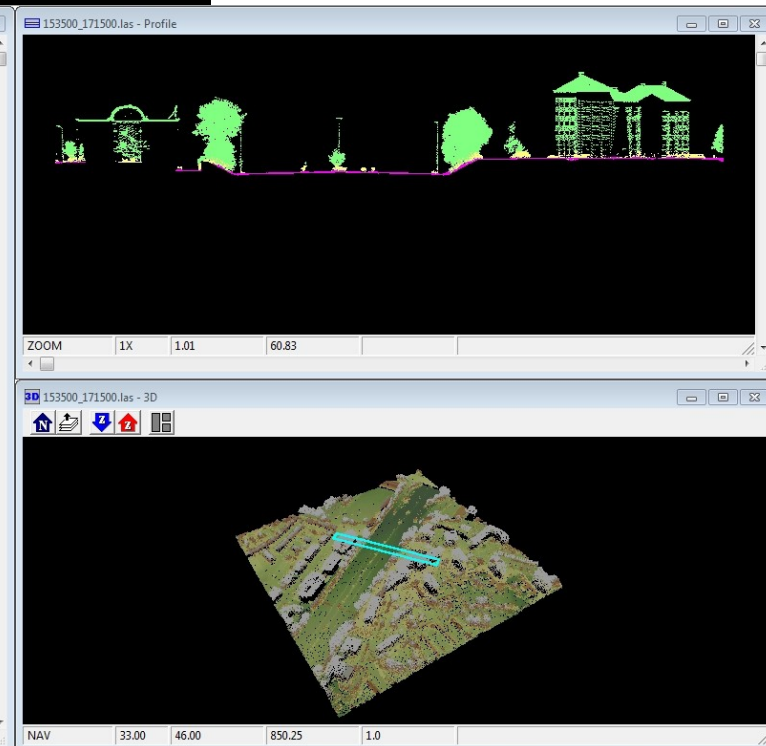
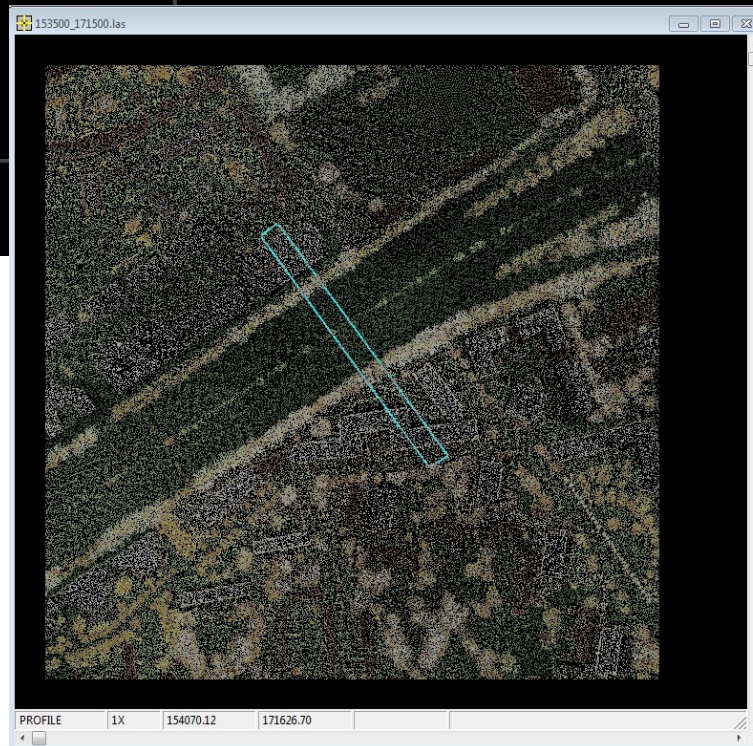
- 10 cm - 8500 feet (2,5 km)
- 68.000 frames

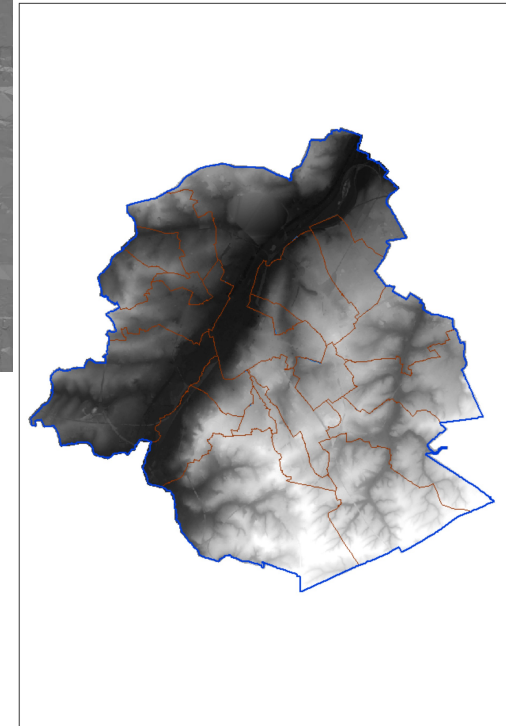
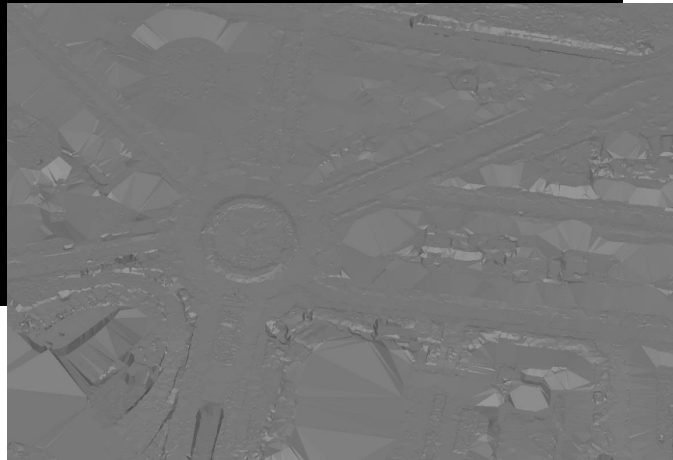
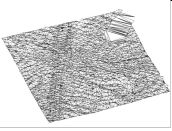
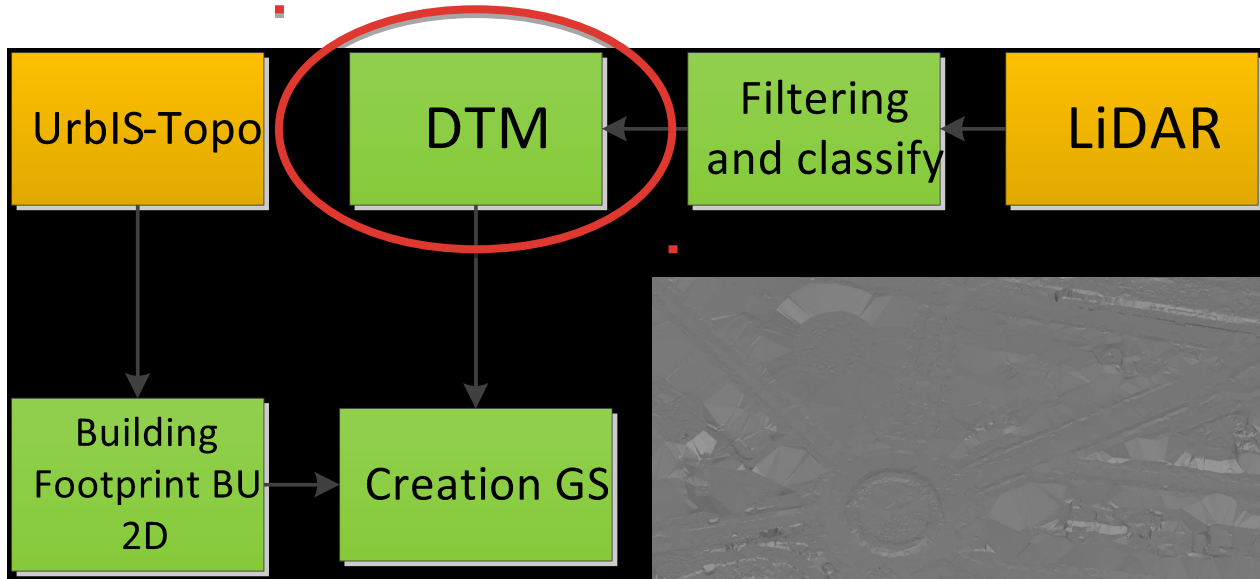
LiDAR

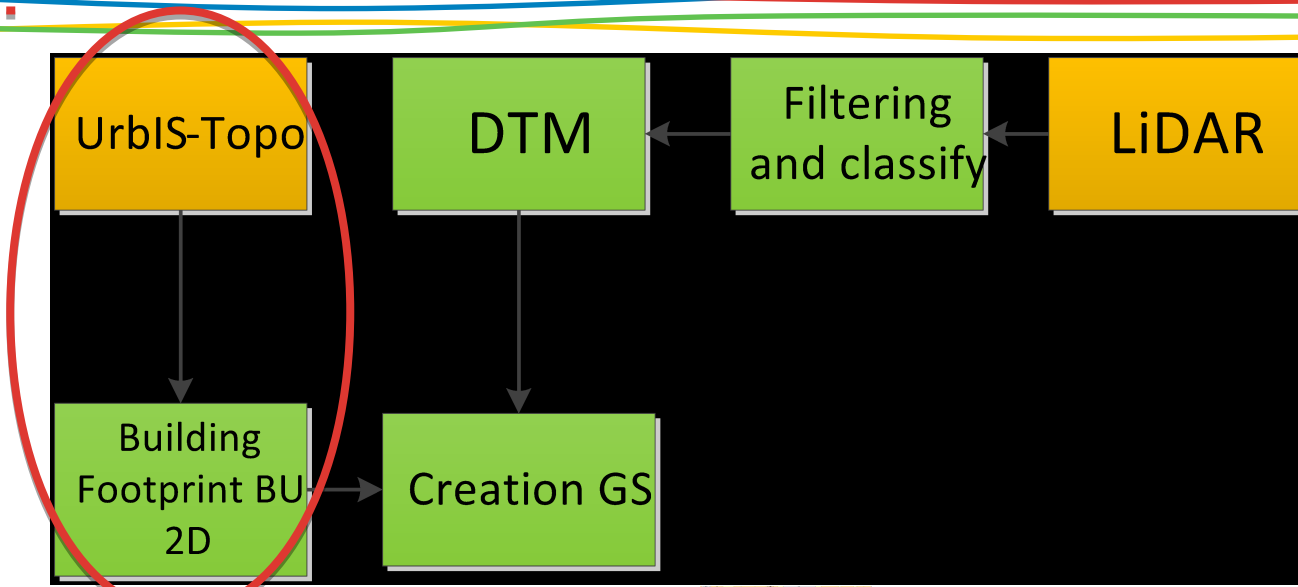
- Flown on 7, 8 and 14 april2012
- 850 feet (250 m) altitude
- 34 pts/m² (±10 billion points)

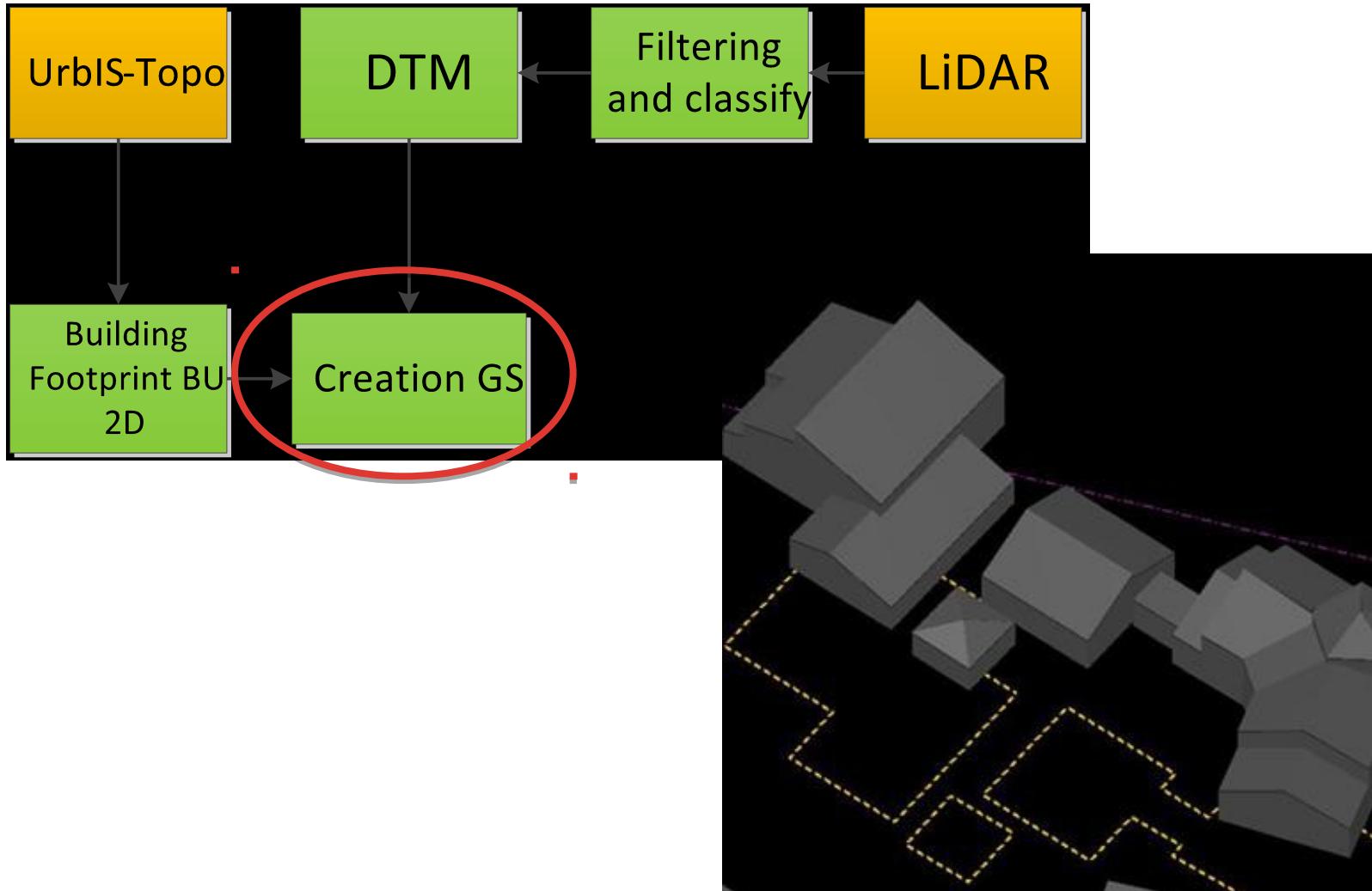
UrbIS-Topo

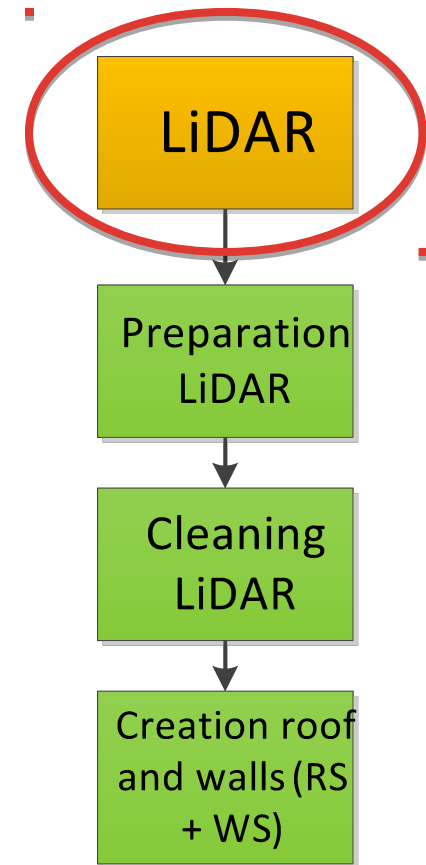
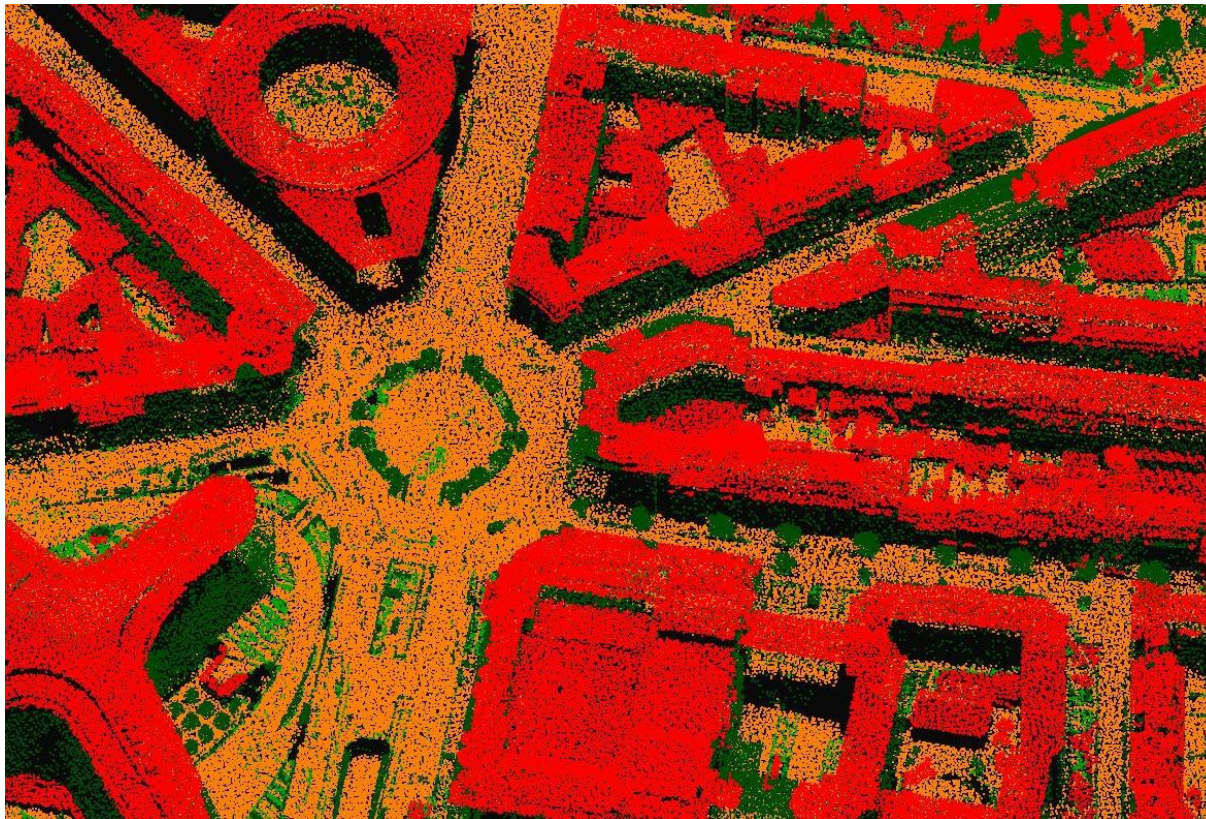
- objects

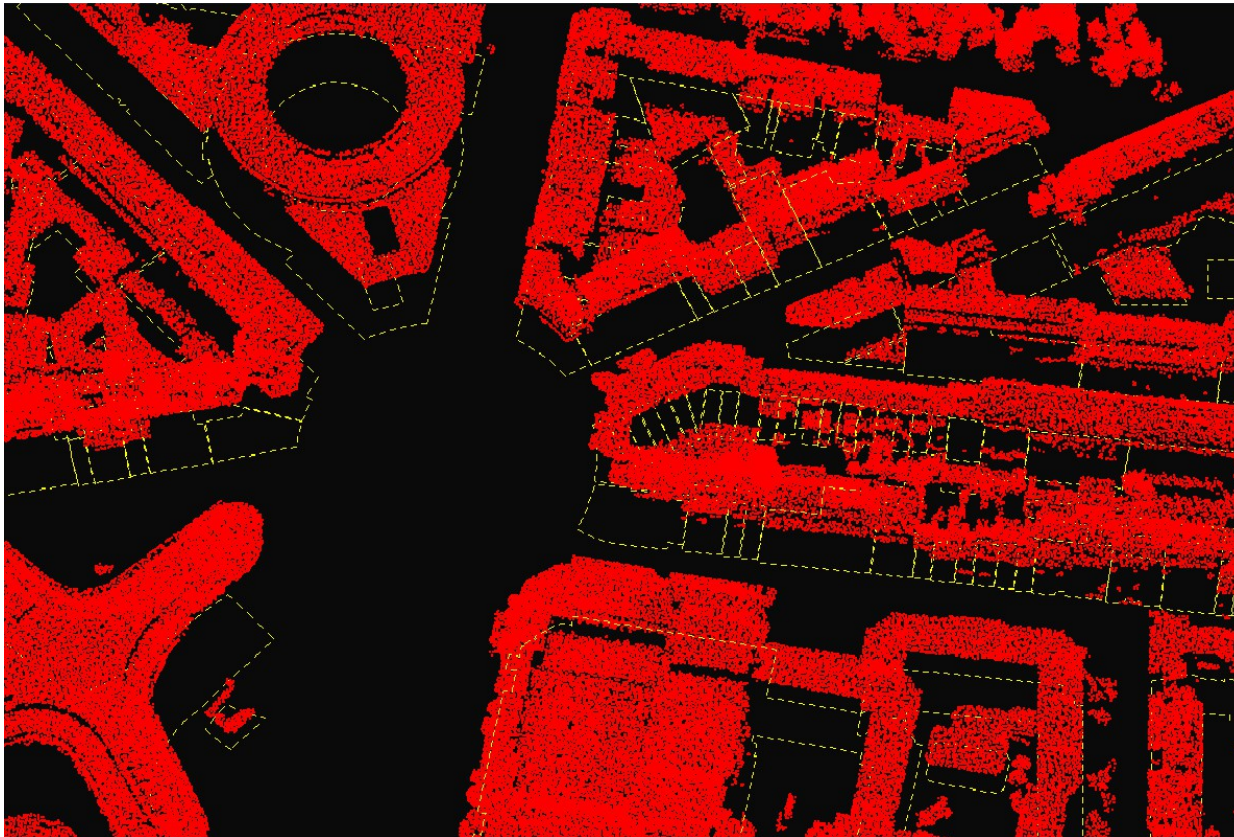


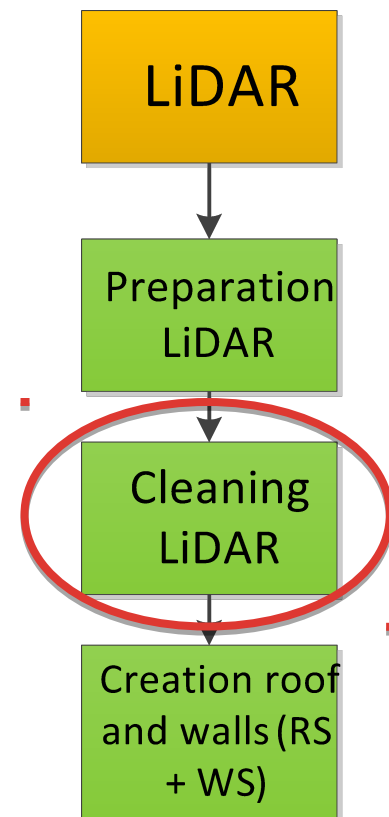
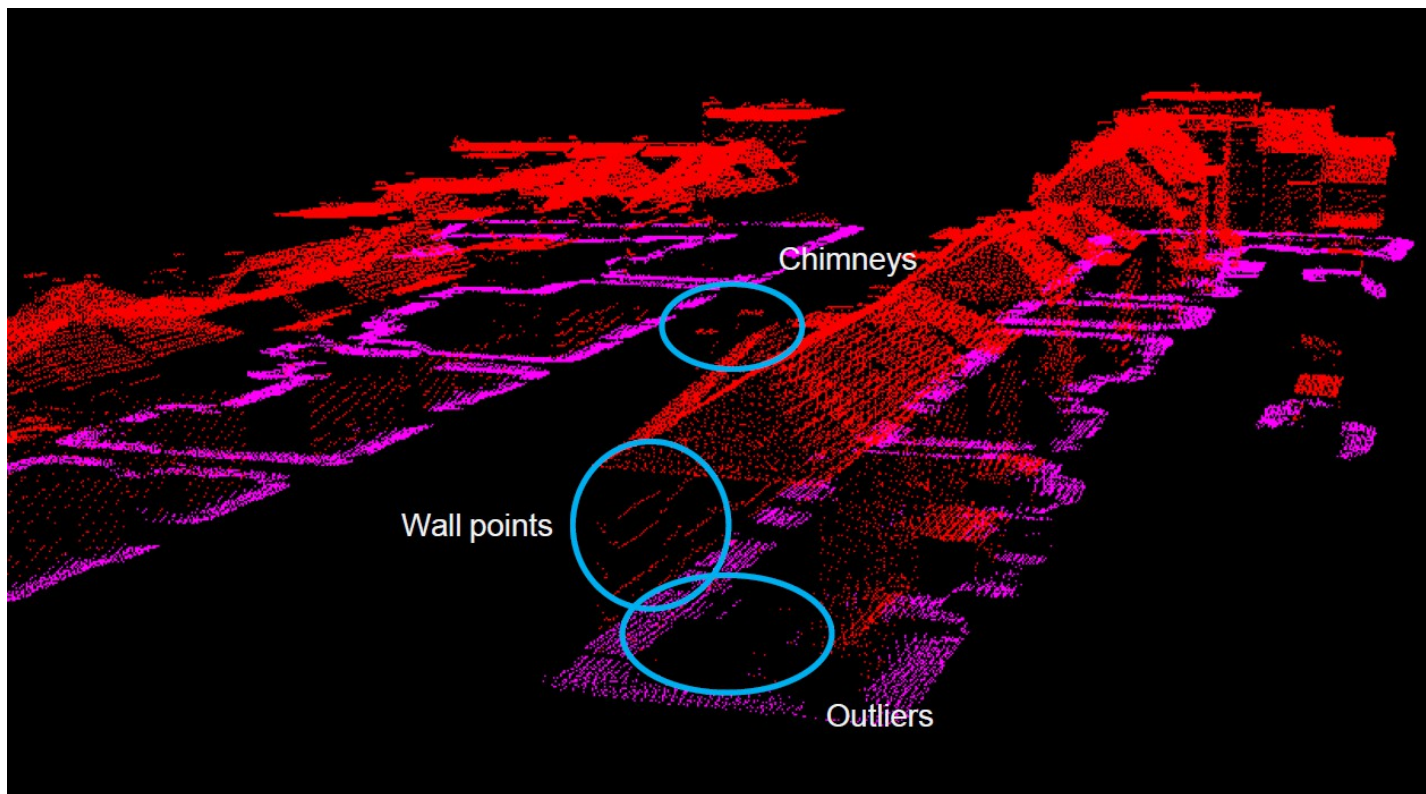


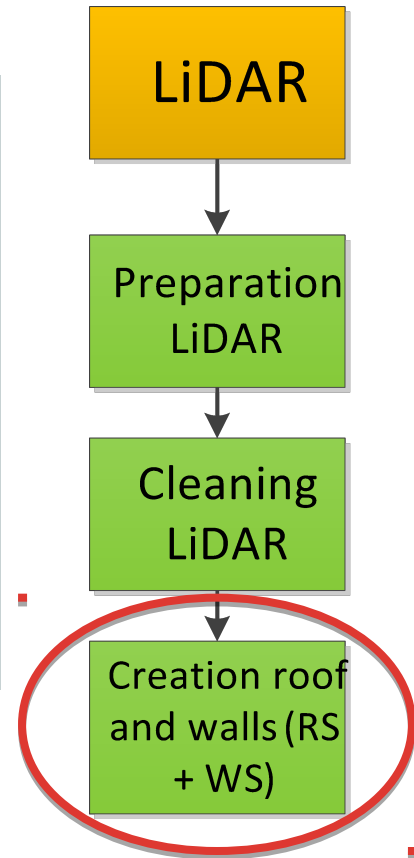
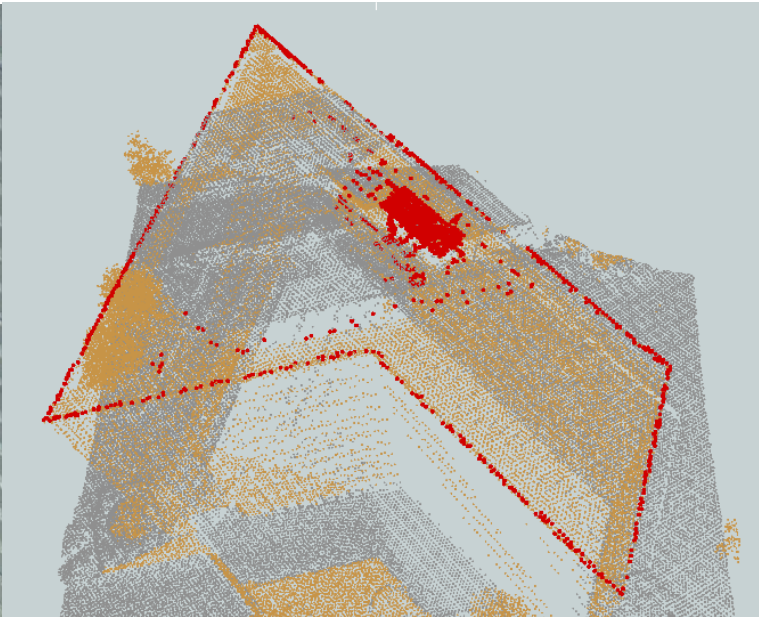


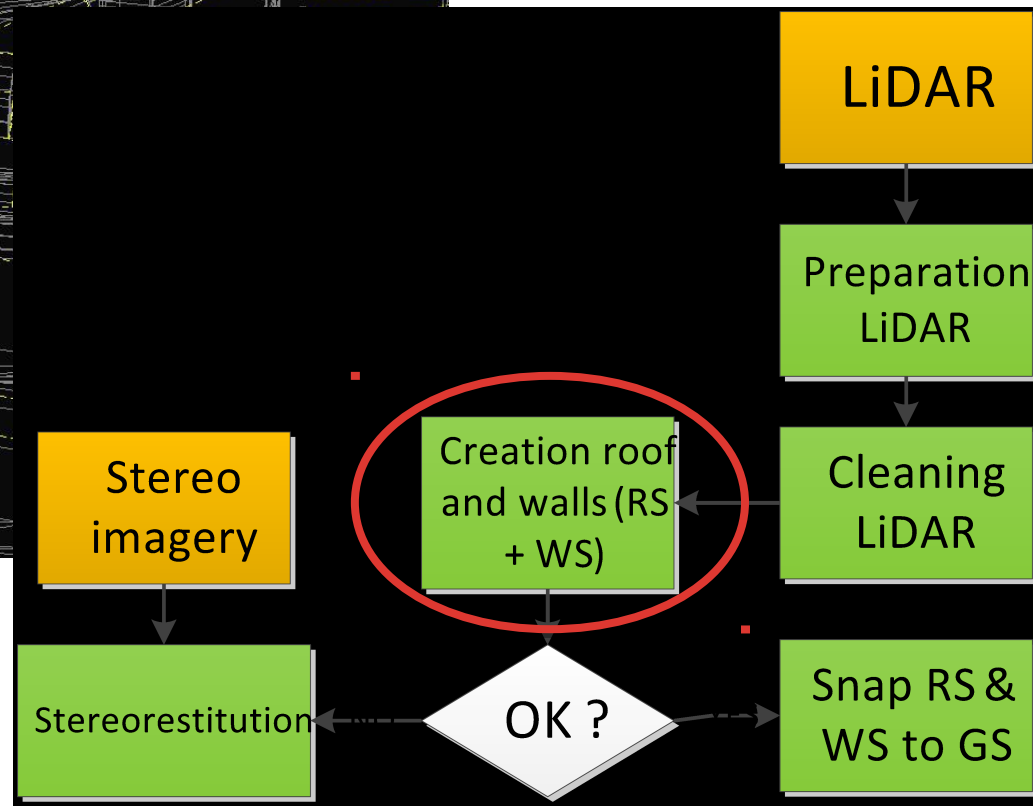
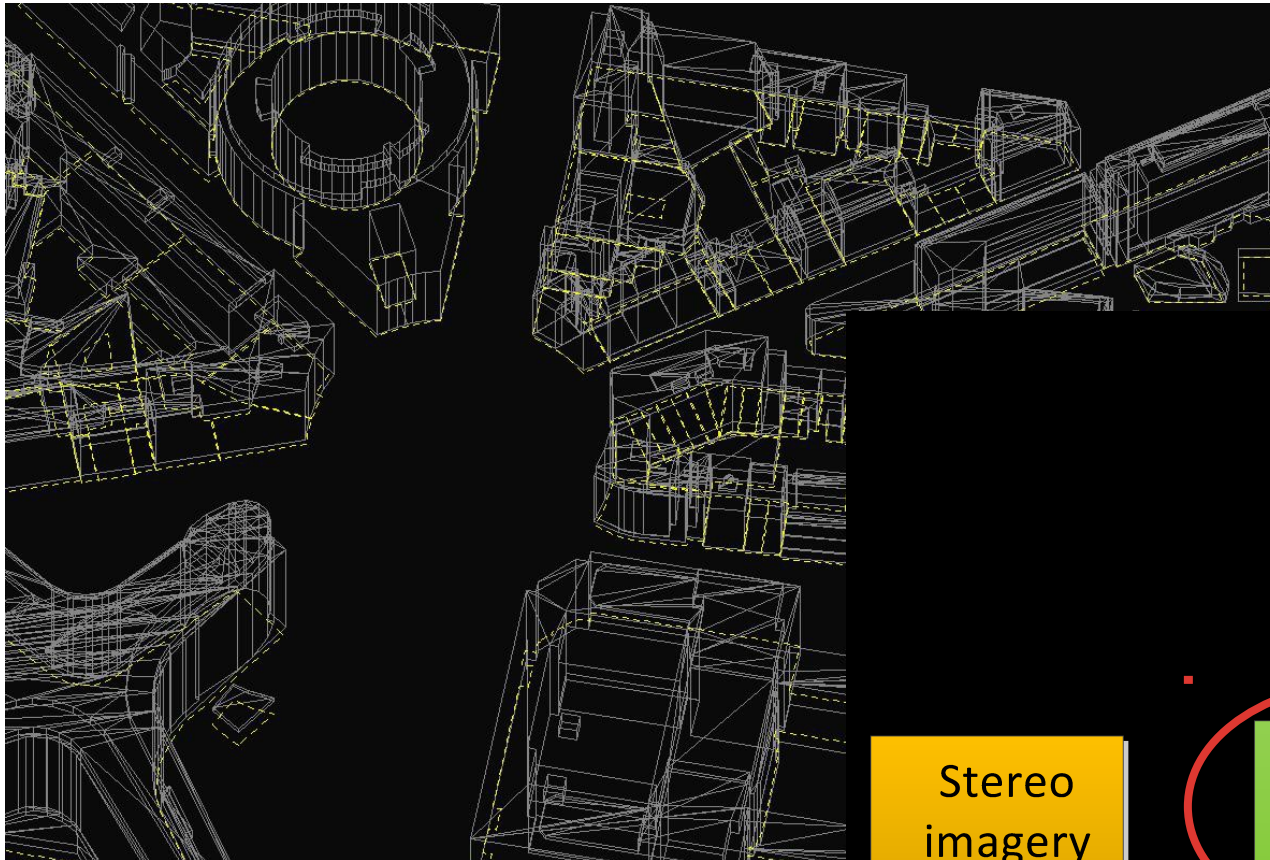


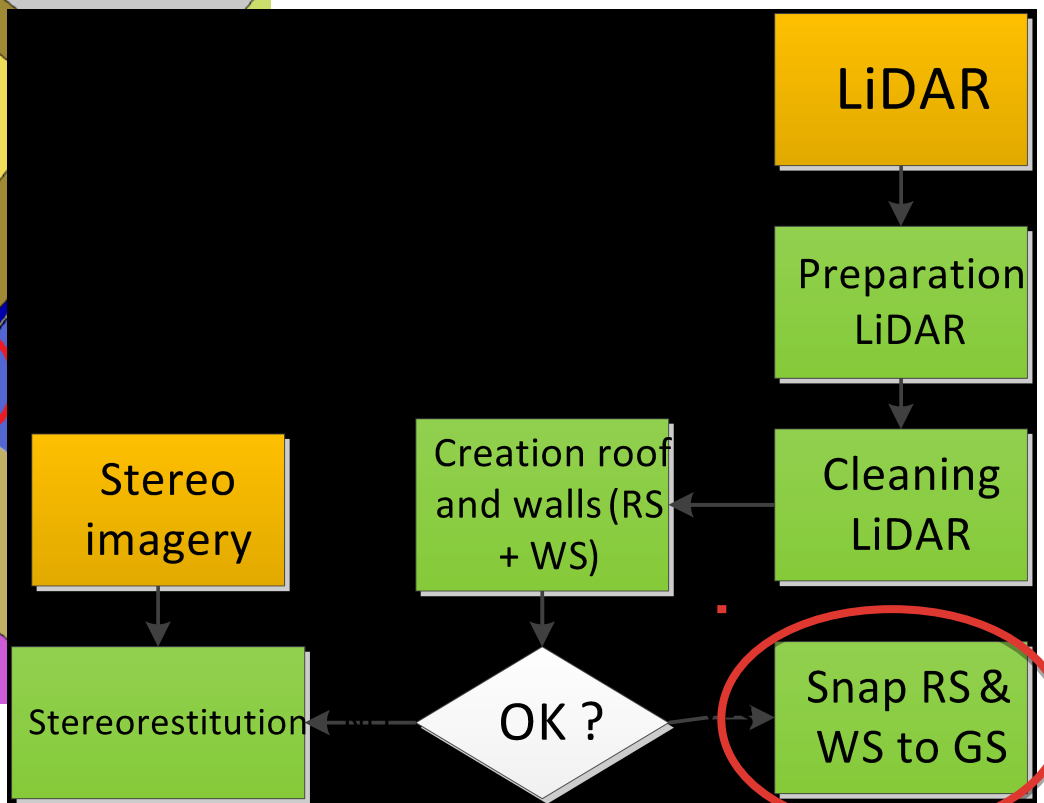
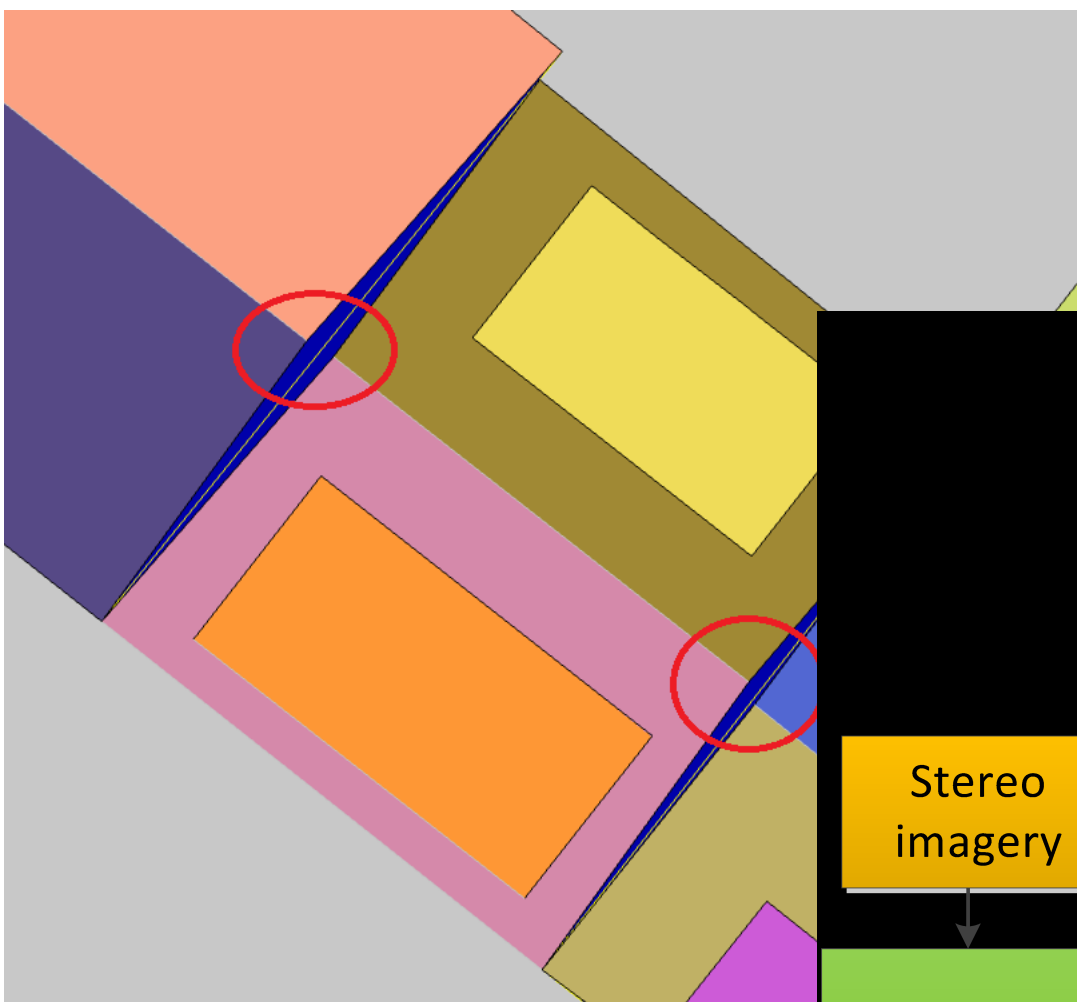


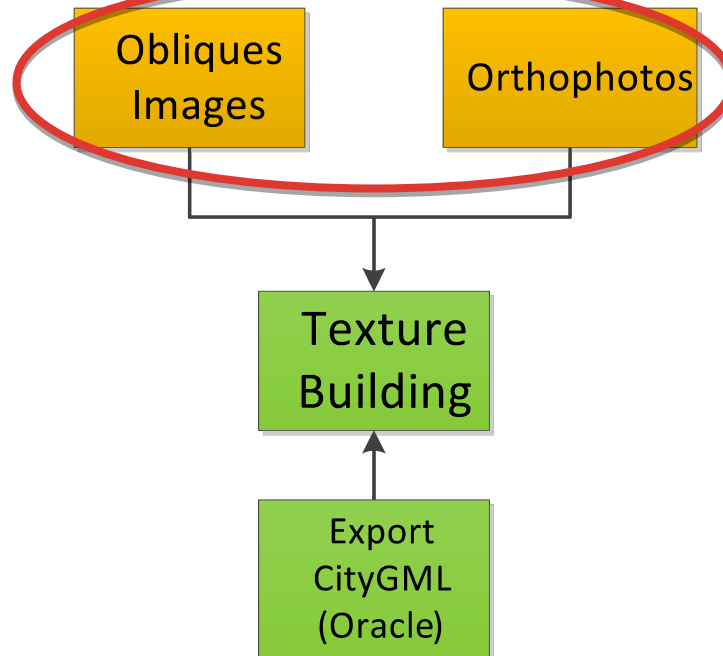
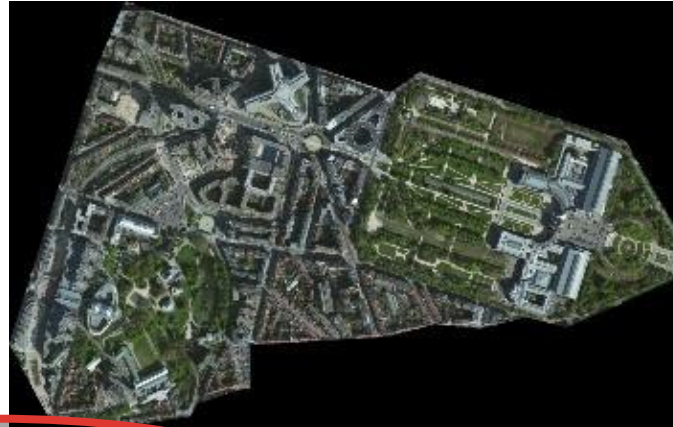












Some ideas to help us working on UrbIS data ...

- Identify new buildings (or places where buildings were removed) through change detection
- Implementation of quality checks on orthophotoplans
- Application of CityGML standard on other objects than buildings (eg bridges)
- Evaluation of 'light' and 'low-cost' photogrammetry solutions to operate stereophotos
- Implementation and Management of a collaborative GIS infrastructure (eg 3D buildings)
- ...

Thanks for your attention !

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