# AIRBORNE LIDAR FOR 3D MODELING OF URBAN AREAS

- In case of ALTM-DC data, semi-automatic approach was applied to generate 3D city model (Footprints extracted from Aerial Photographs and height information from LiDAR point cloud).
- Automatic extraction of building footprints and 3D model with high point density airborne LiDAR point cloud in Vaihengen and Toronto.

Reconstructed 3D model, Vaihengen, Germany
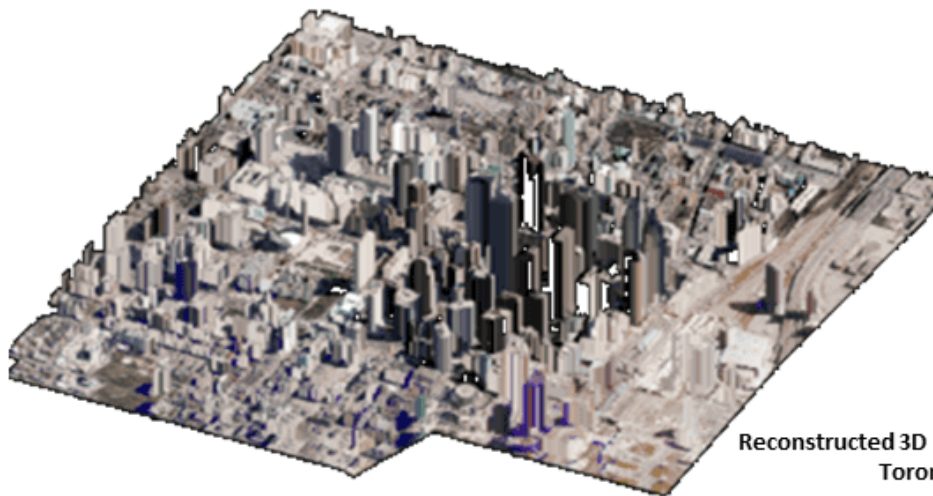
Reconstructed 3D Building Model, Toronto

Better results can be obtained with higher point density preferably 7-8 pts/m² of LiDAR data.
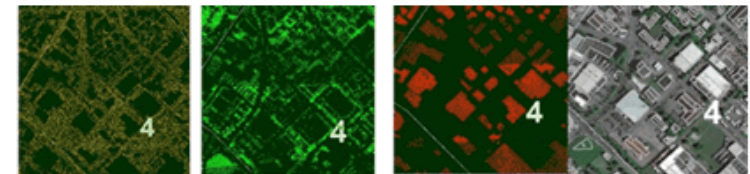
Step 1: Ground Classification

Step 2: Vegetation Classification

Step 3: Building Classification and Modeling

Accuracy Assessment of LiDAR derived building model against Photogrammetric methods		
	Vaihengen	Toronto
Average dz (m)	-0.08	-0.11
Minimum dz (m)	-0.77	-1.77
Maximum dz (m)	1.30	1.04
Average magnitude (m)	0.32	0.85
Root mean square (m)	0.48	0.96
Std deviation (m)	0.49	1.02
CRE	0.11%	1%