The Worldâ€™s Largest and Most High-res Neighbourhood Model

Spotscale has produced a 3D model of a whole downtown area in unique sub-centimetre imagery resolution. NASA and Swedish researchers will use the model to study how unmanned aerial systems (UASs) will affect our urban environment and future air traffic control. The purpose of the project is to simulate how drone traffic will affect the regular flight traffic and the urban landscape in terms of landing areas, charging areas and other gathering places for the drones.

In order to base the simulations on a truthful and realistic view of the urban landscape (as it appears today), in the summer of 2016 Spotscale initiated the most massive urban multi-copter image capture project ever pursued.

World’s Largest 3D Reconstruction of a Neighbourhood

Source: Spotscale

Sky Full of Drones

NASA Ames Research Center have defined four steps of how human life together with drones will evolve from today to a state where the sky is full of drones:

- transporting packages;
- transporting peoples;
- mapping the city for different purposes.

Swedish scientists at LFV Research & Innovation and LiU will together with NASA develop a realistic 3D simulation of the future scenario (step four of the NASA definition).

Photo-based Model of 40 City Blocks

Spotscale, known for its urban 3D processing software, contracted drone pilots to photograph an area of 40 city blocks of a central part of Norrköping, Sweden from all possible angles. The multi-copter has been sweeping along every street, façade and roof to photograph all angles possible in a total of 140.000 images in 24 megapixel resolution. Then the imagery have been uploaded to the Spotscale cloud processing, where computer vision algorithms have calculated an extremely large and detailed 3D model.

Ludvig Emgård, founder and CEO of Spotscale mentioned that to achieve this model, they been pushing the limits of UAS capture, processing methodology and visualisation. Today it still requires a lot of manual drone flying and he expects that when drones are allowed to fly autonomously this kind of urban drone 3D mapping will explode.

Potential for Larger Areas

The Swedish startup, known in the 3D mapping industry for its ability to generate realistic models of the built environment for real estate developers, architects and construction companies see huge potential for these larger areas.

The plan with the 3D model is to do research on the drone future and to look at all kinds of useful applications. Through a regional consortium called Visual Sweden, the Municipal urban planning department will use the model for public participation in the building process. Furthermore, the model will be used to improve location based services by locating a smart phone in 3D, just by pointing the mobile camera to a façade.

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