



ULTRACAM

**Microsoft Photogrammetry
Vexcel Imaging**

EuroSDR

Vienna, February 16th – 17th 2012

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Microsoft®

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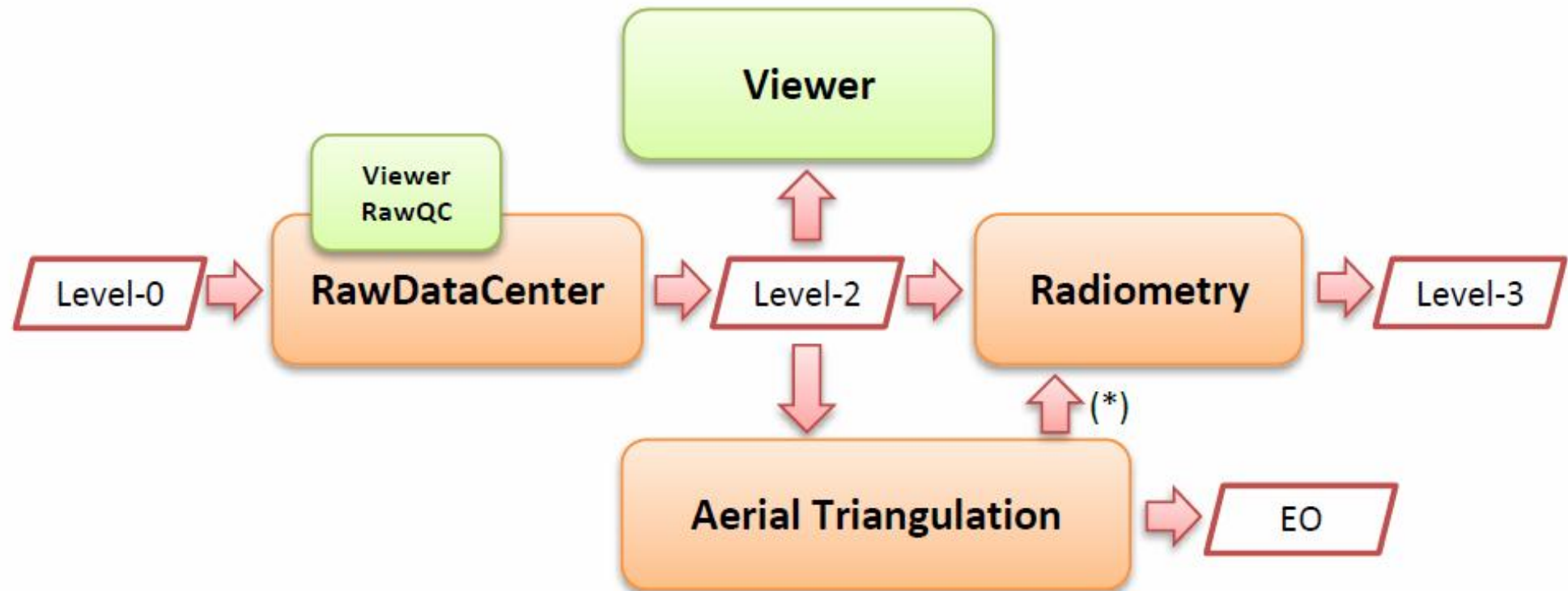
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***The Microsoft Approach
to Dense Matching***

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Overview

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Framework

Infrastructure & Distributed Processing

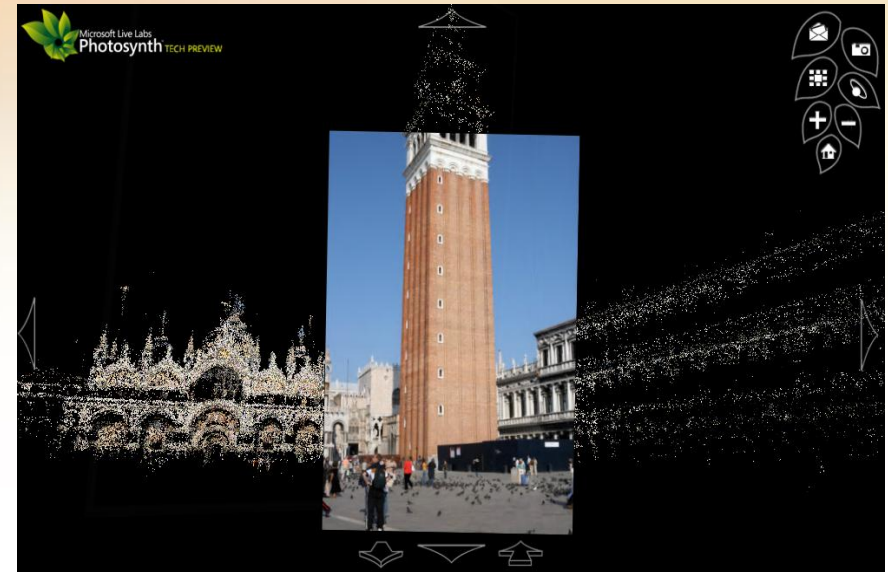
DragonFly

Interaction & Visualization

Seadragon Technology

ULTRACAM

- § Handles large blocks of images
- § Smooth transitions
- § Core technology for
 - Photosynth
 - Silverlight
 - UltraMap





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§ Huge image blocks

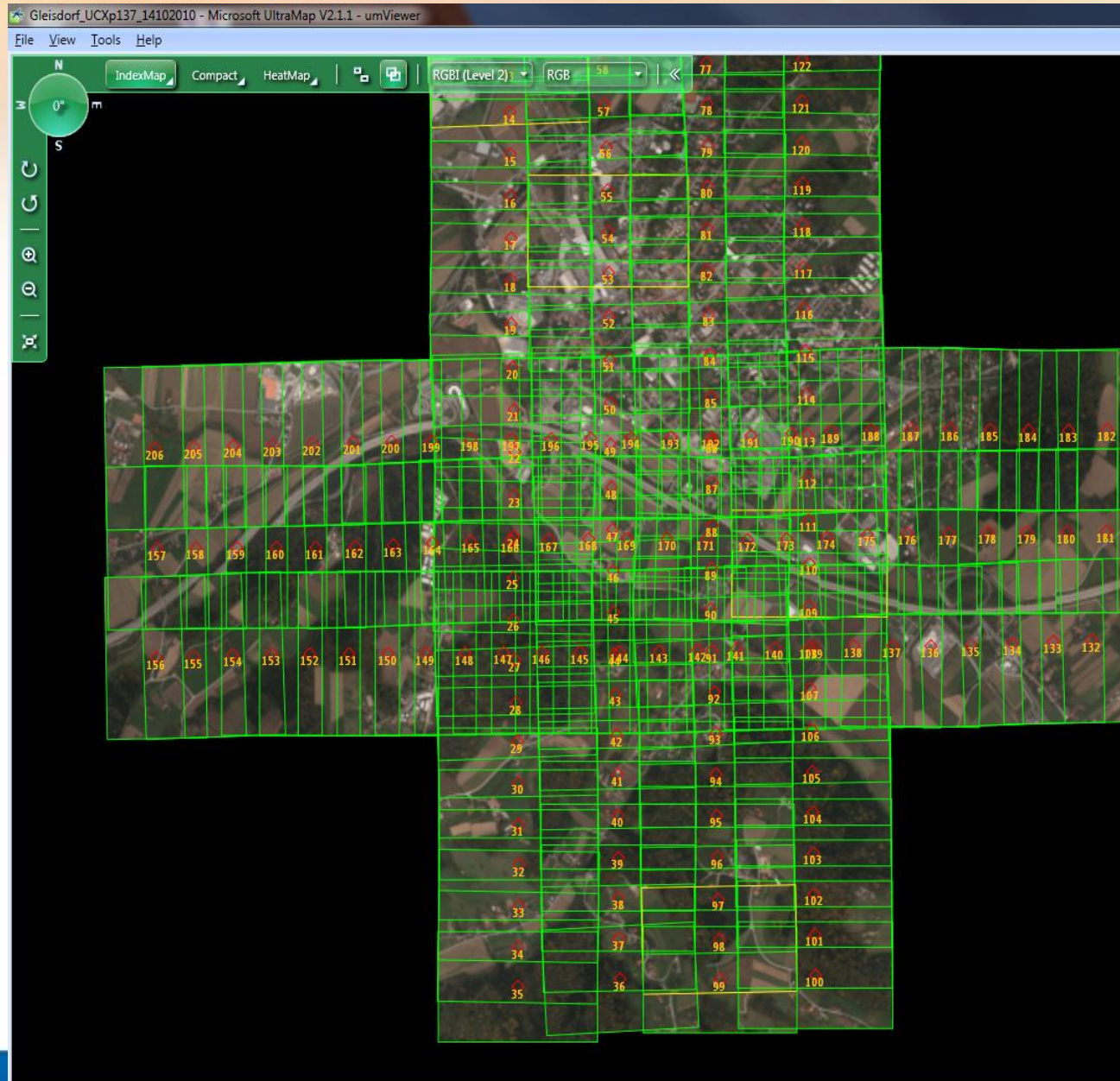
- Geo-located
- Image data 1,113 GB (> 1TB)
- Pixel count (130Mpix)
 - 440,000 Mpix

§ Quality control

- Per image
- Per block

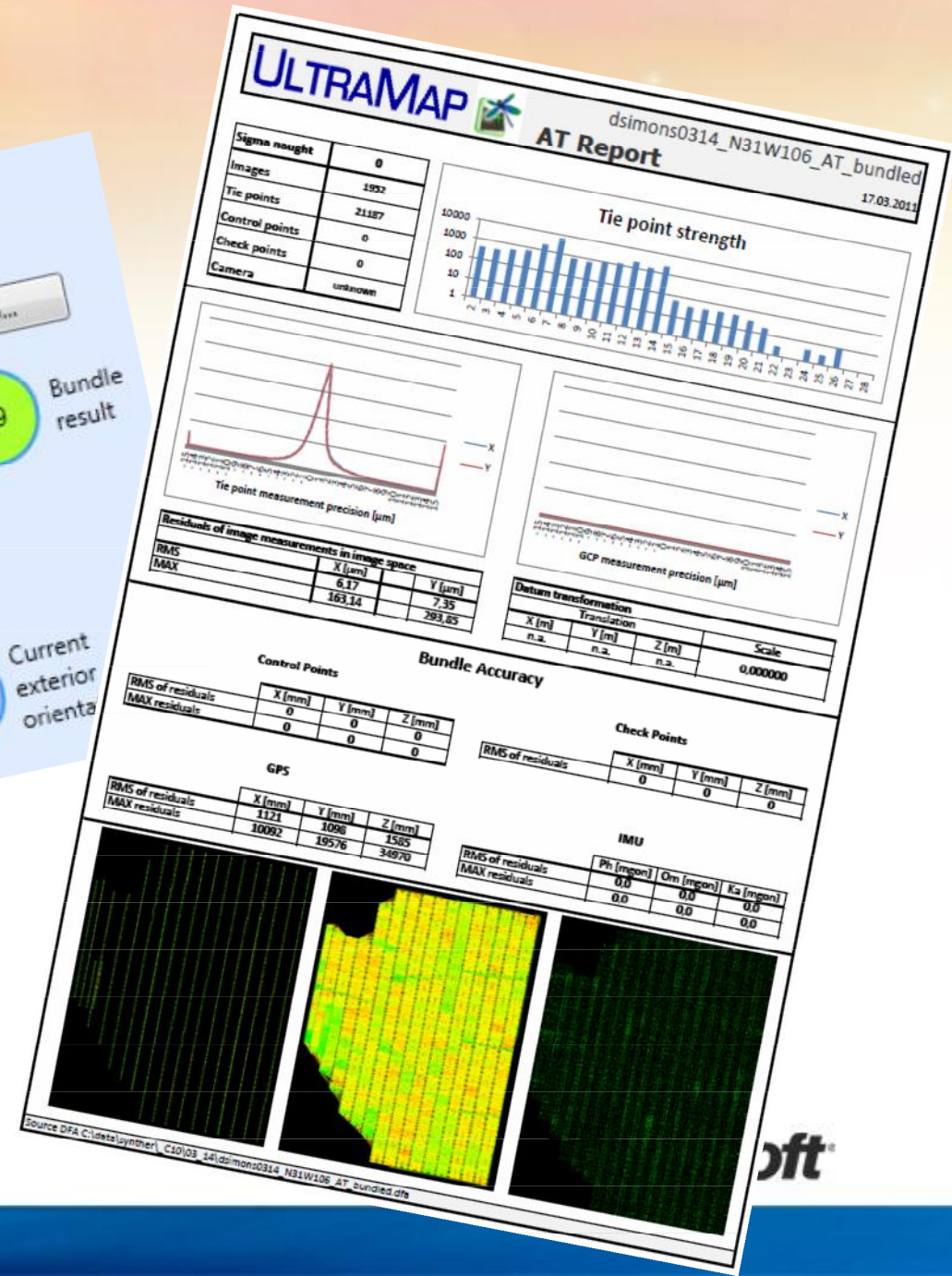
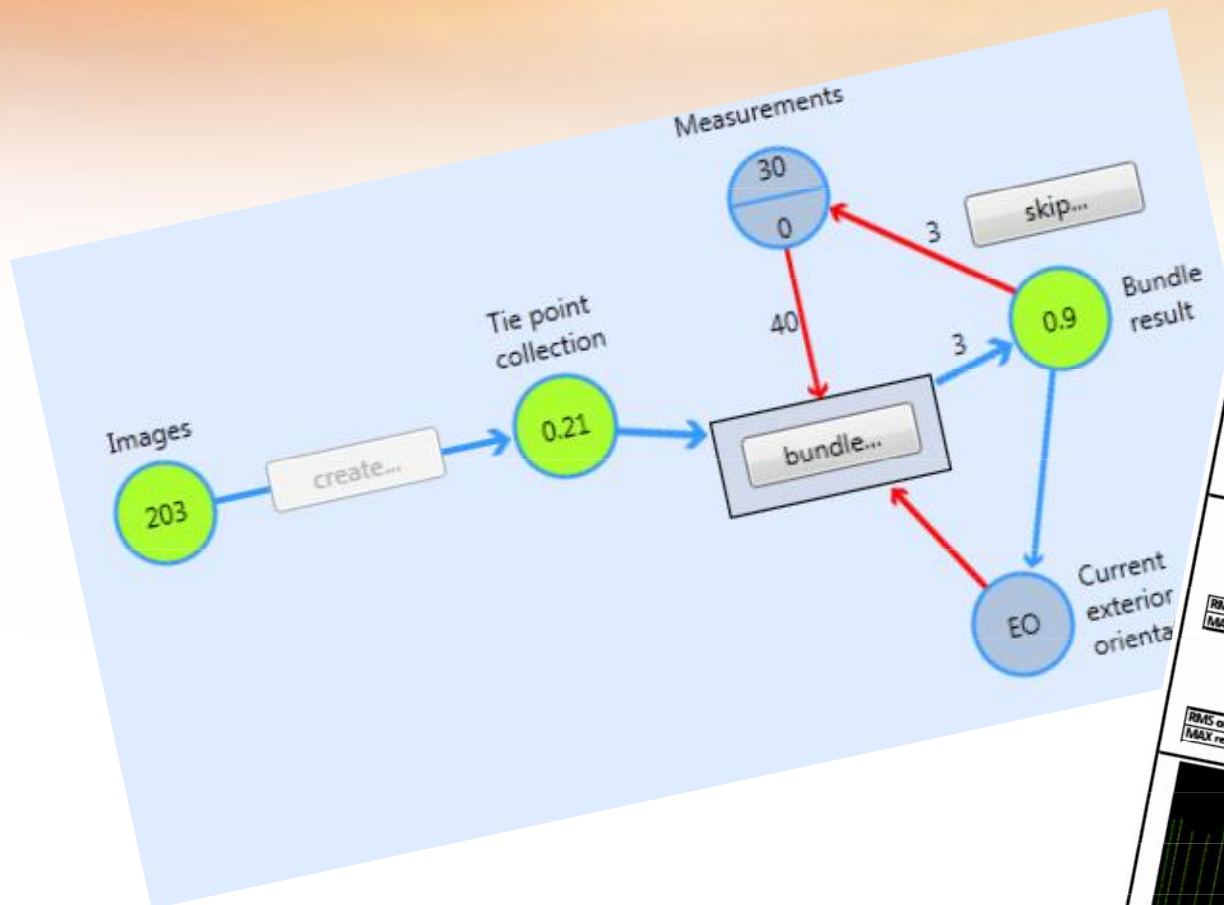
§ Interaction

- Working with data



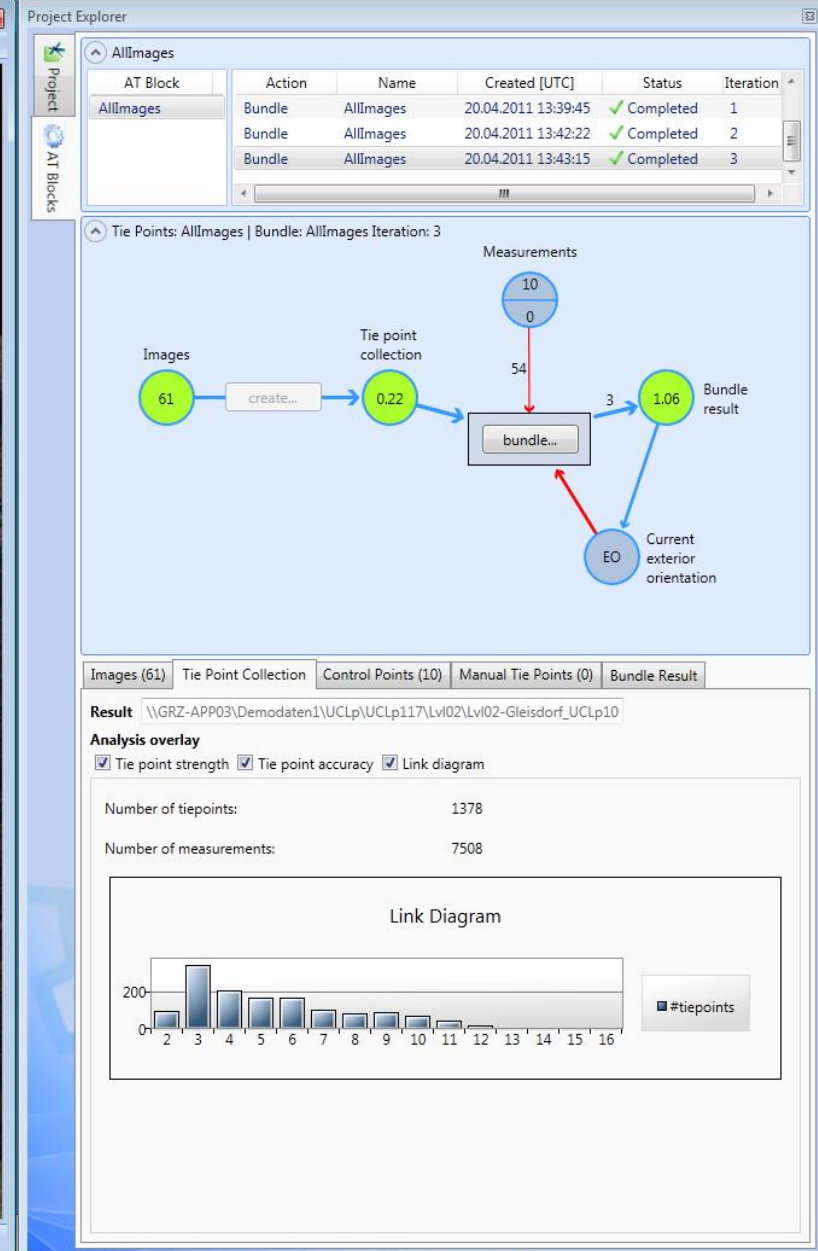
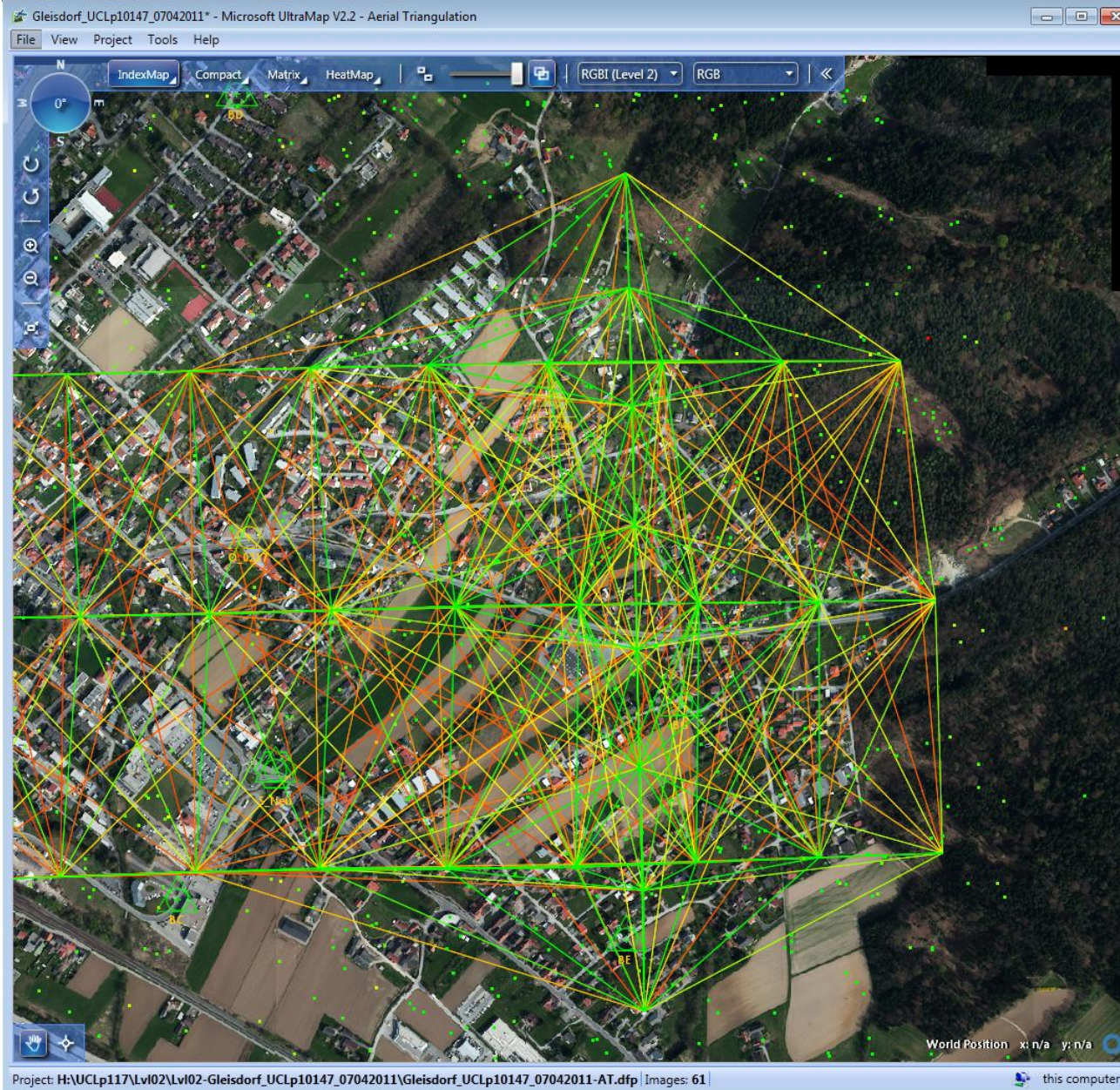
UltraMap-AT

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UltraMap-AT

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Project Based Color Balancing



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Existing Product - Components



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Framework



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Viewer



ULTRAMAP
RawDataCenter



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AT



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Radiometry

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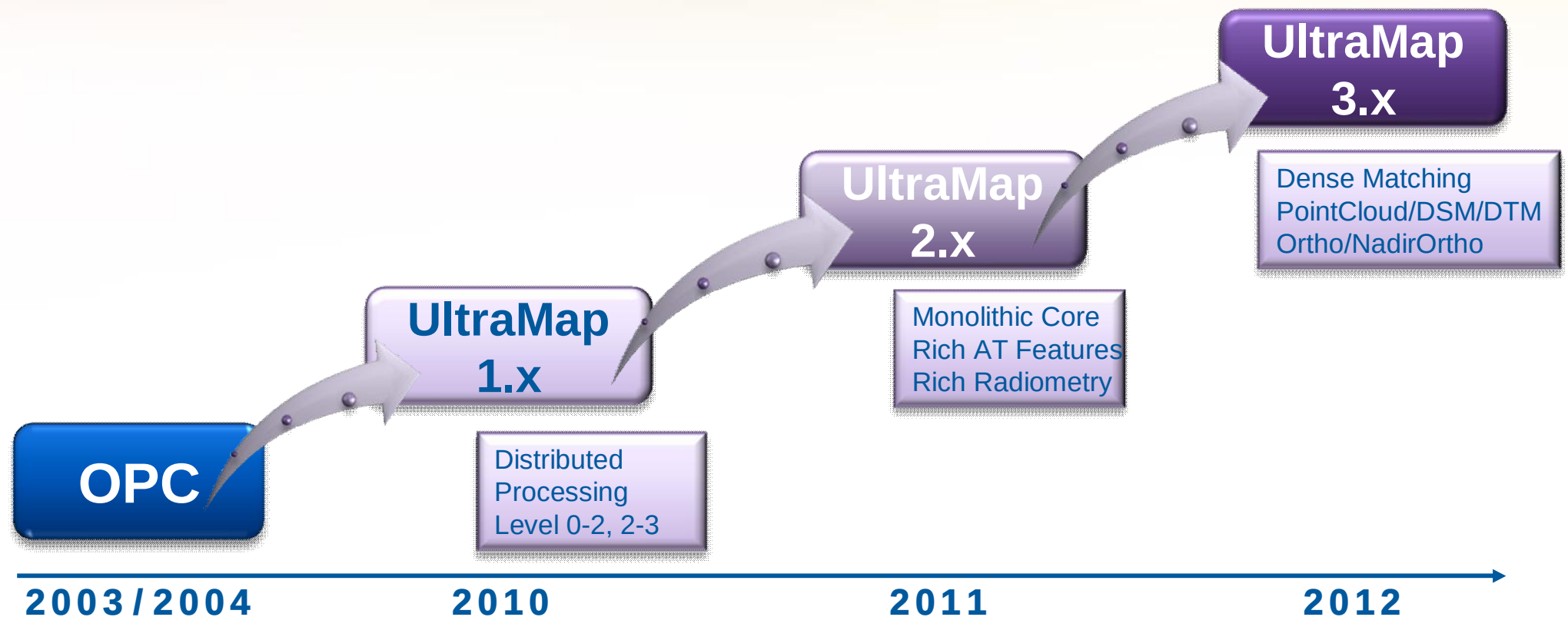
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V3.0

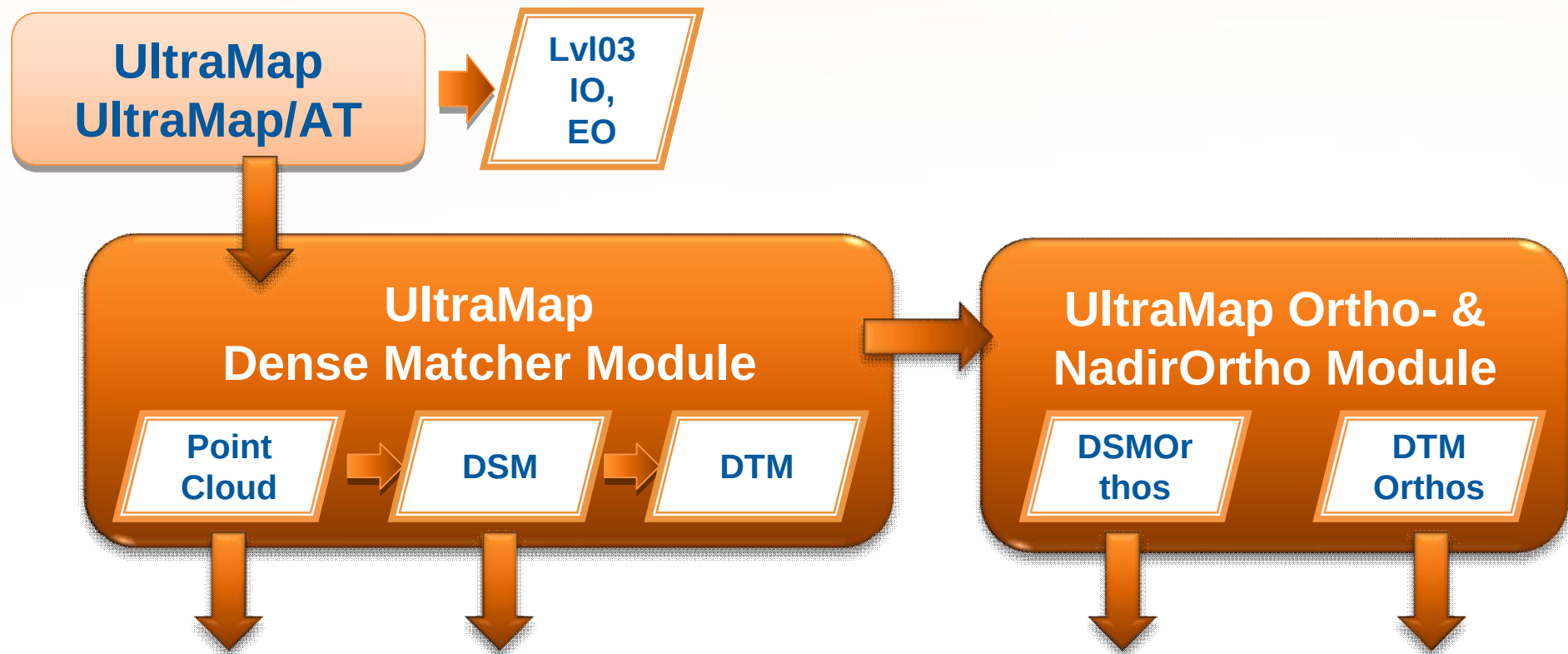
Technology Preview

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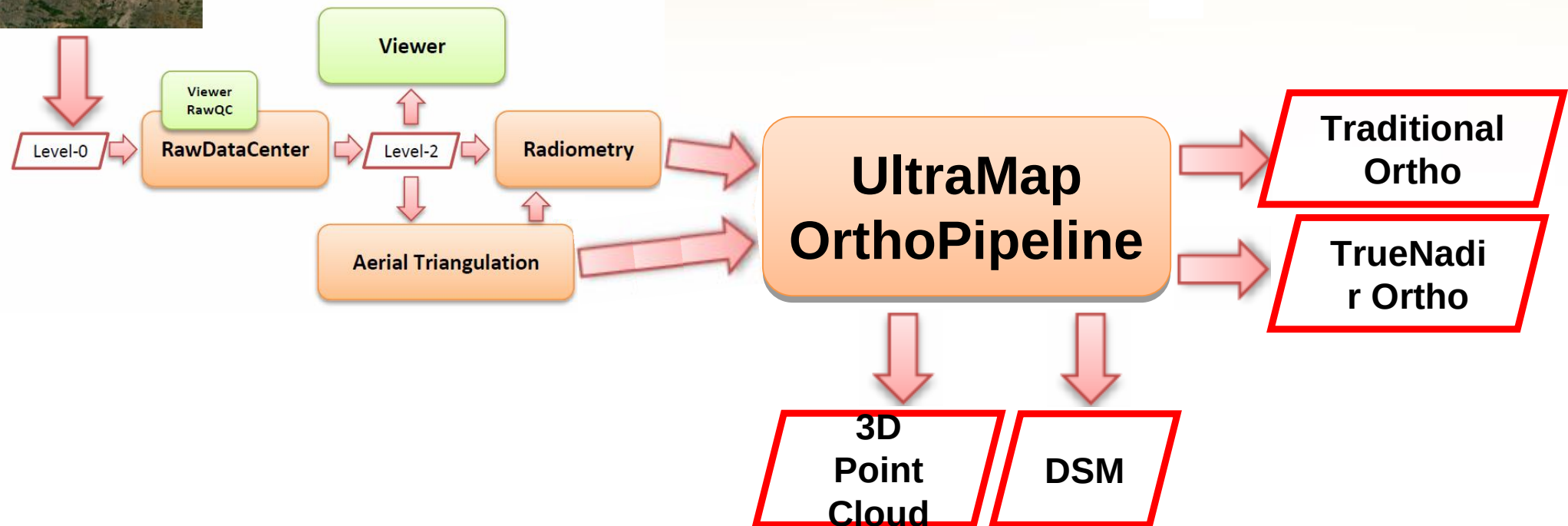
Software Roadmap

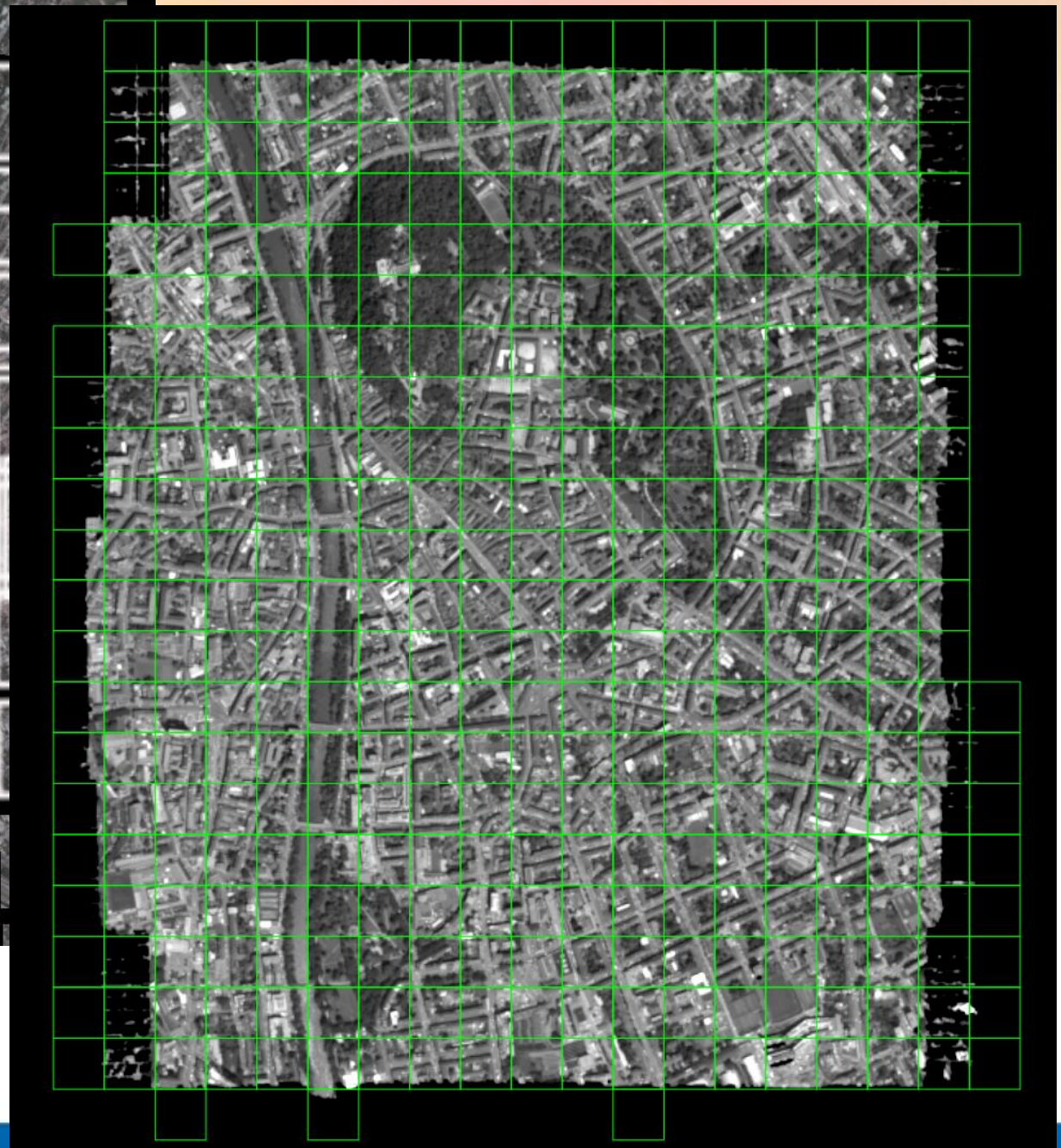
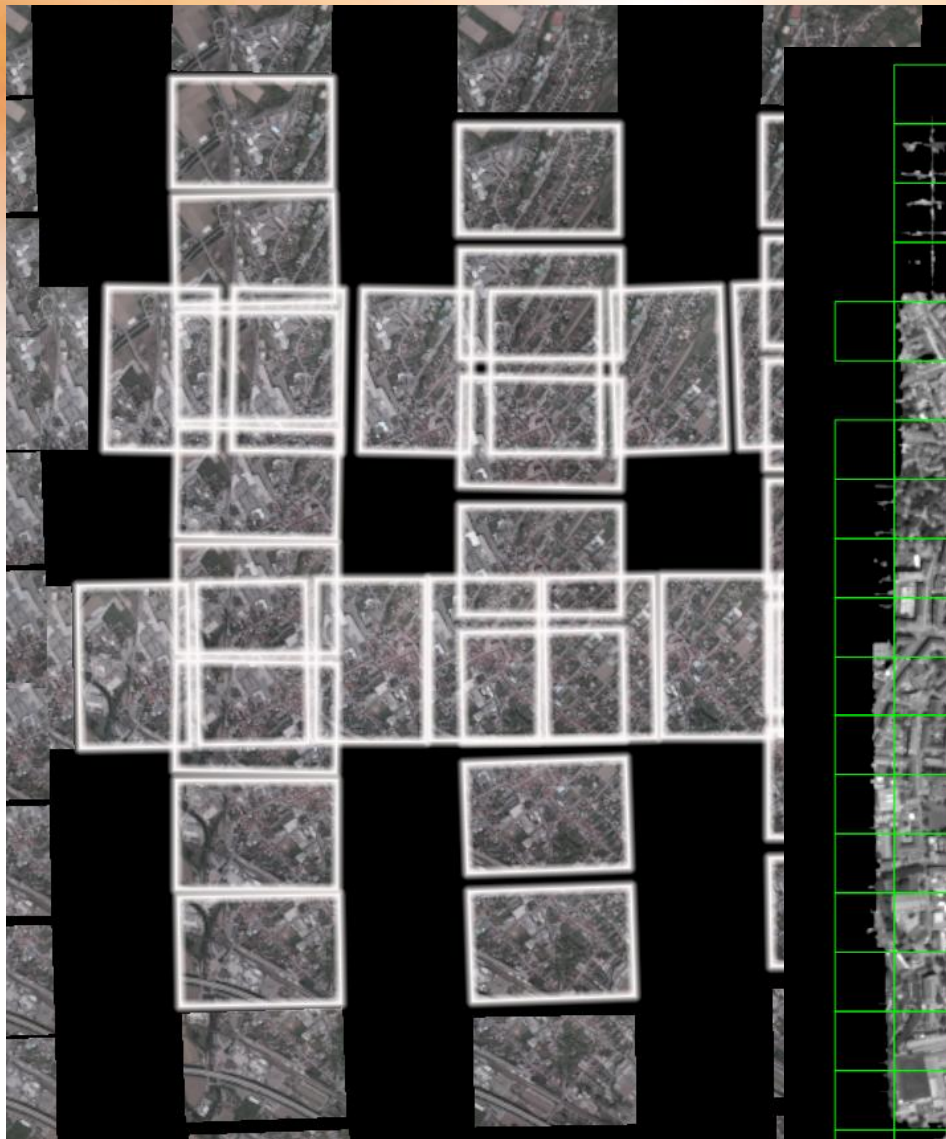


UltraMap 3.0 – New Modules



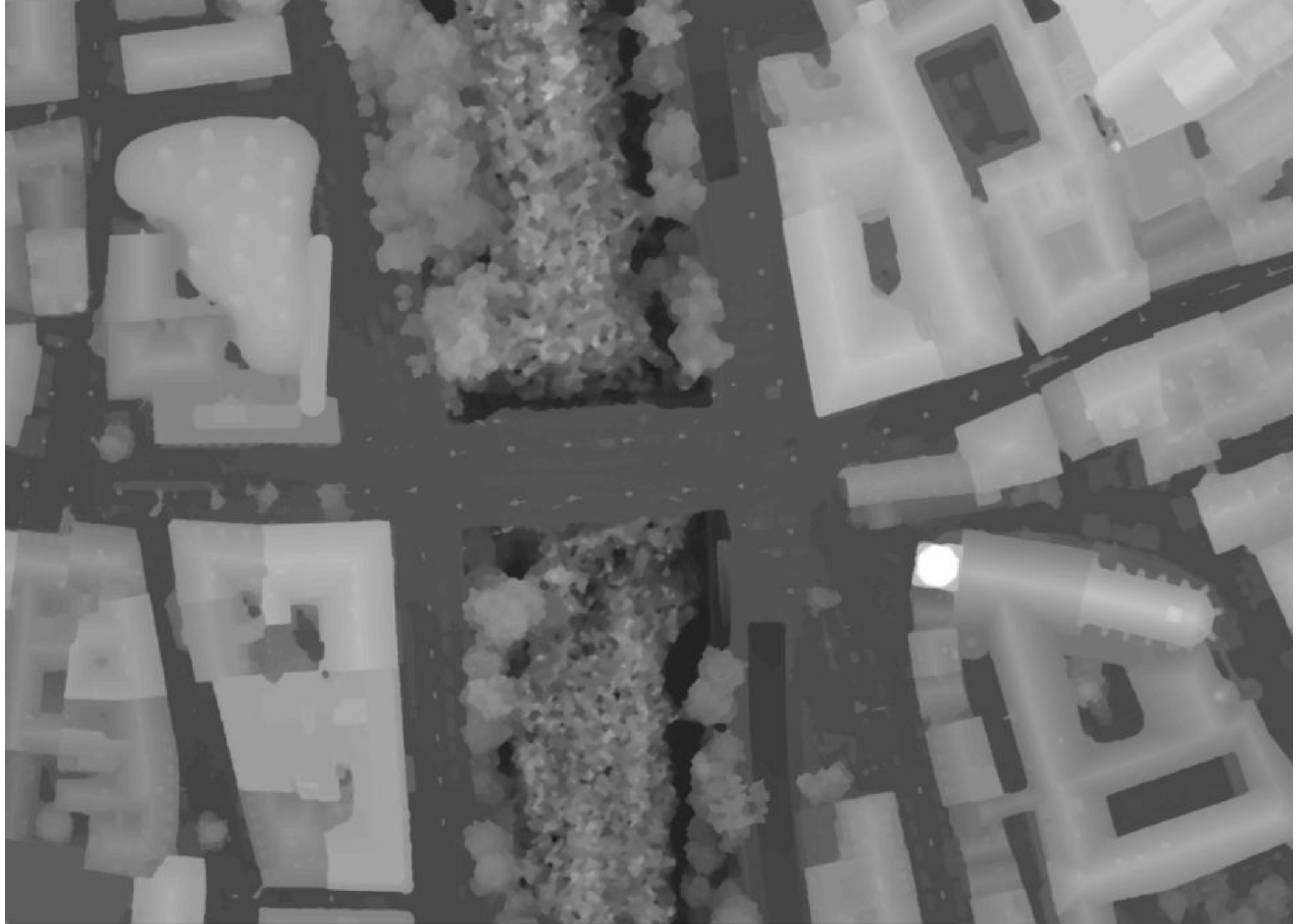
UltraMap v3.0 Workflow





1. AT Block
2. Tiled Ortho Output

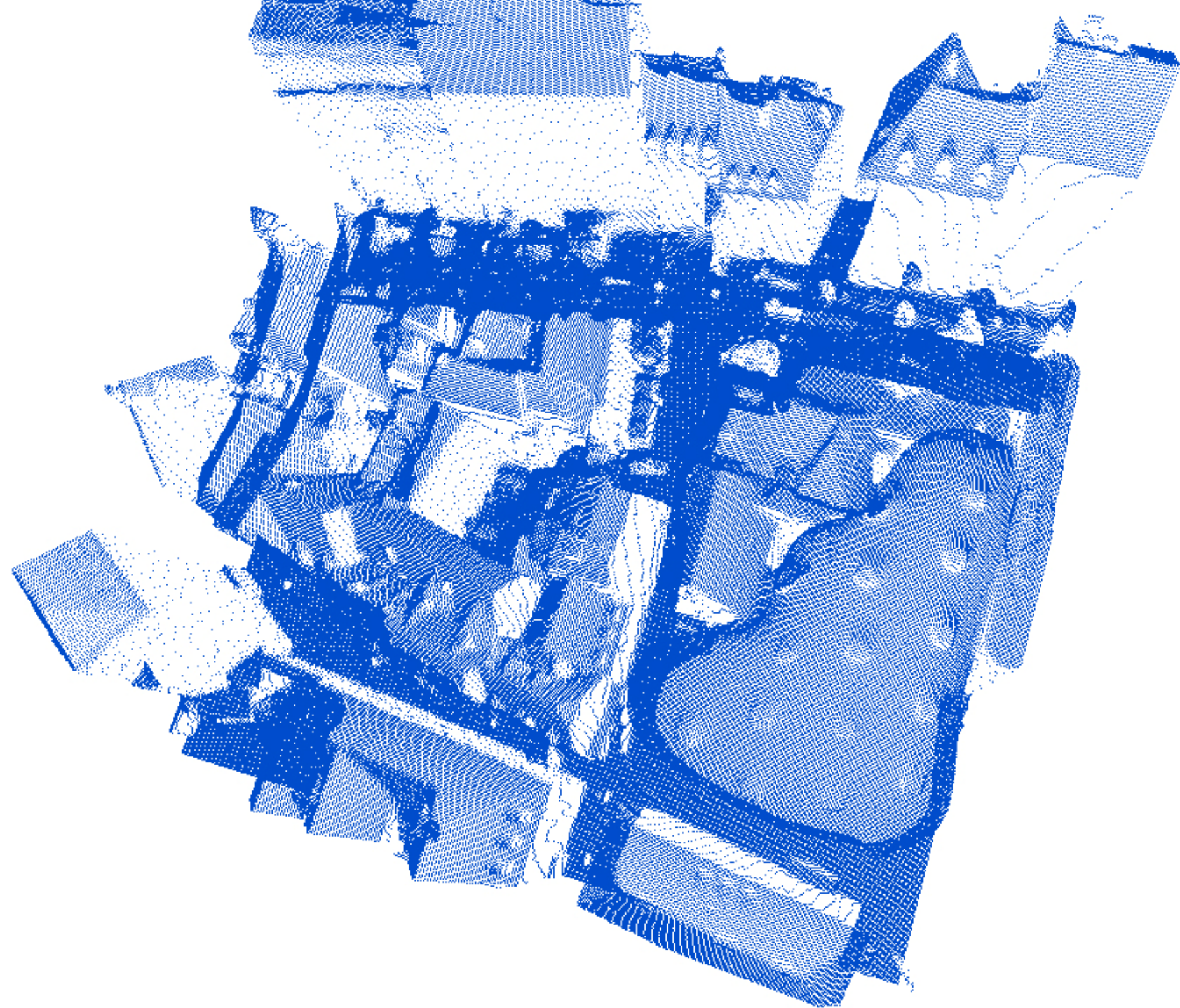




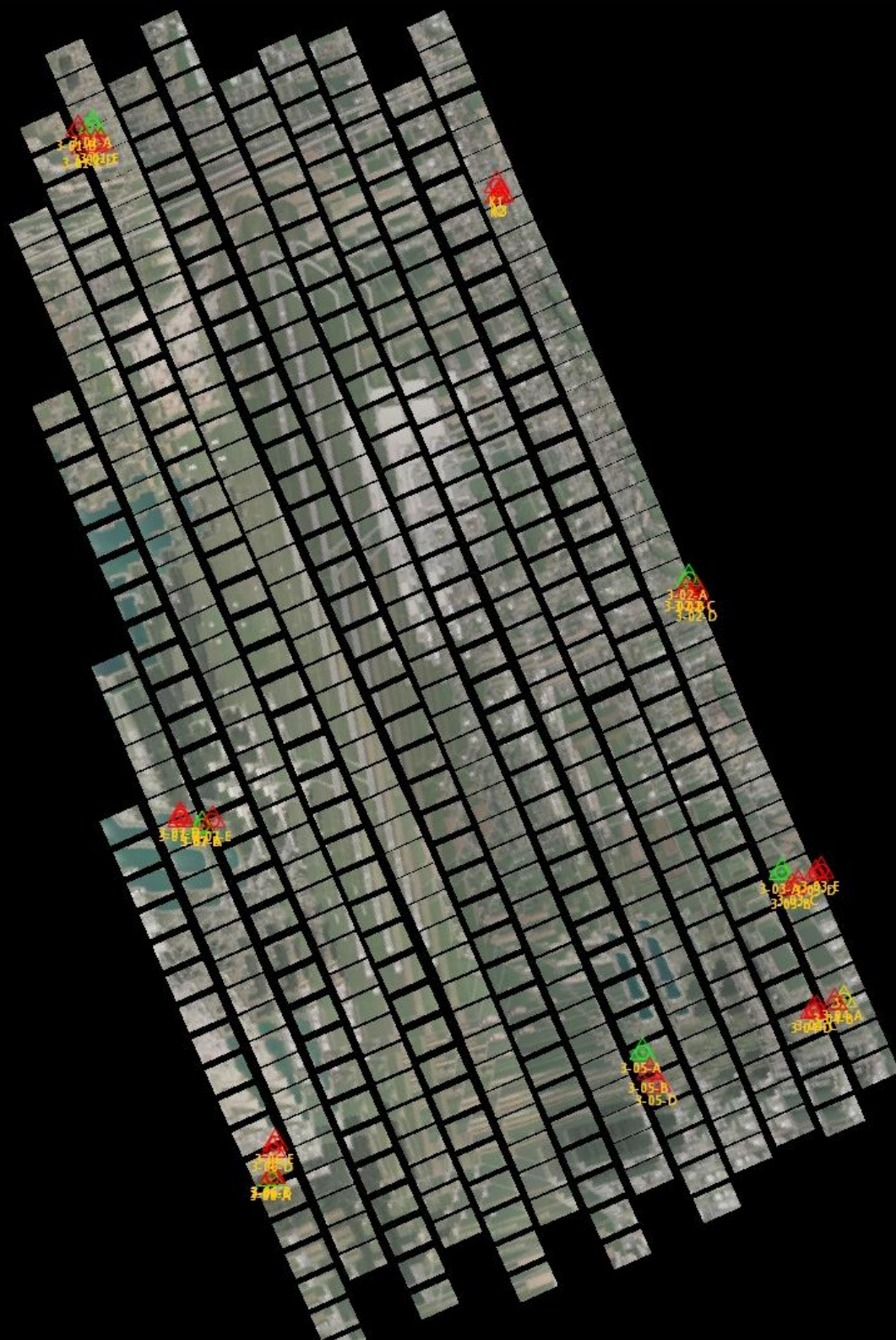
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Graz,
BV 2011, GSD 7 cm



ULTRACAM

Graz, Airport BV 2011 GSD 3 cm

Microsoft

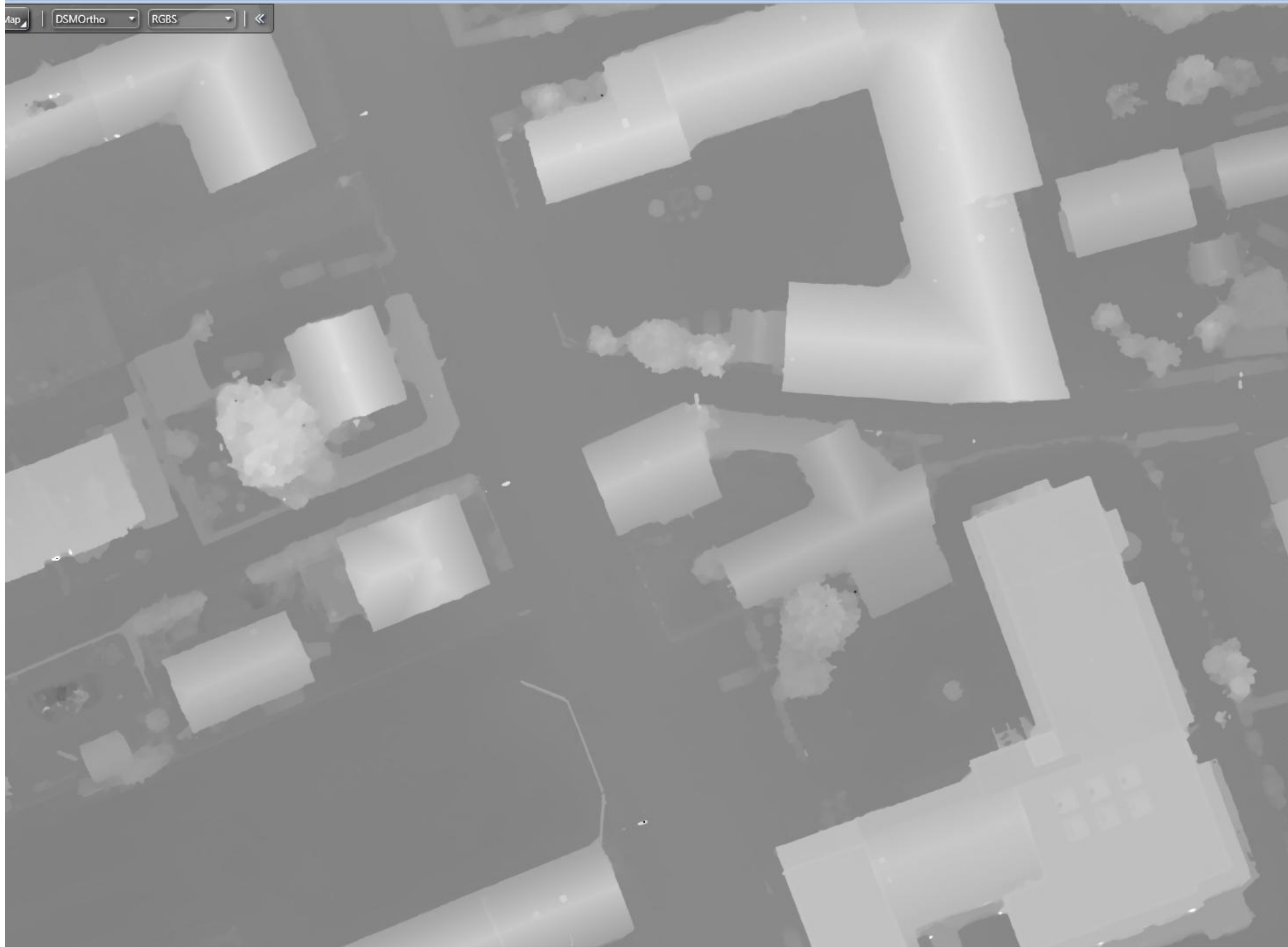
462 Photos (UltraCam Xp)

3 Envidia TESLA

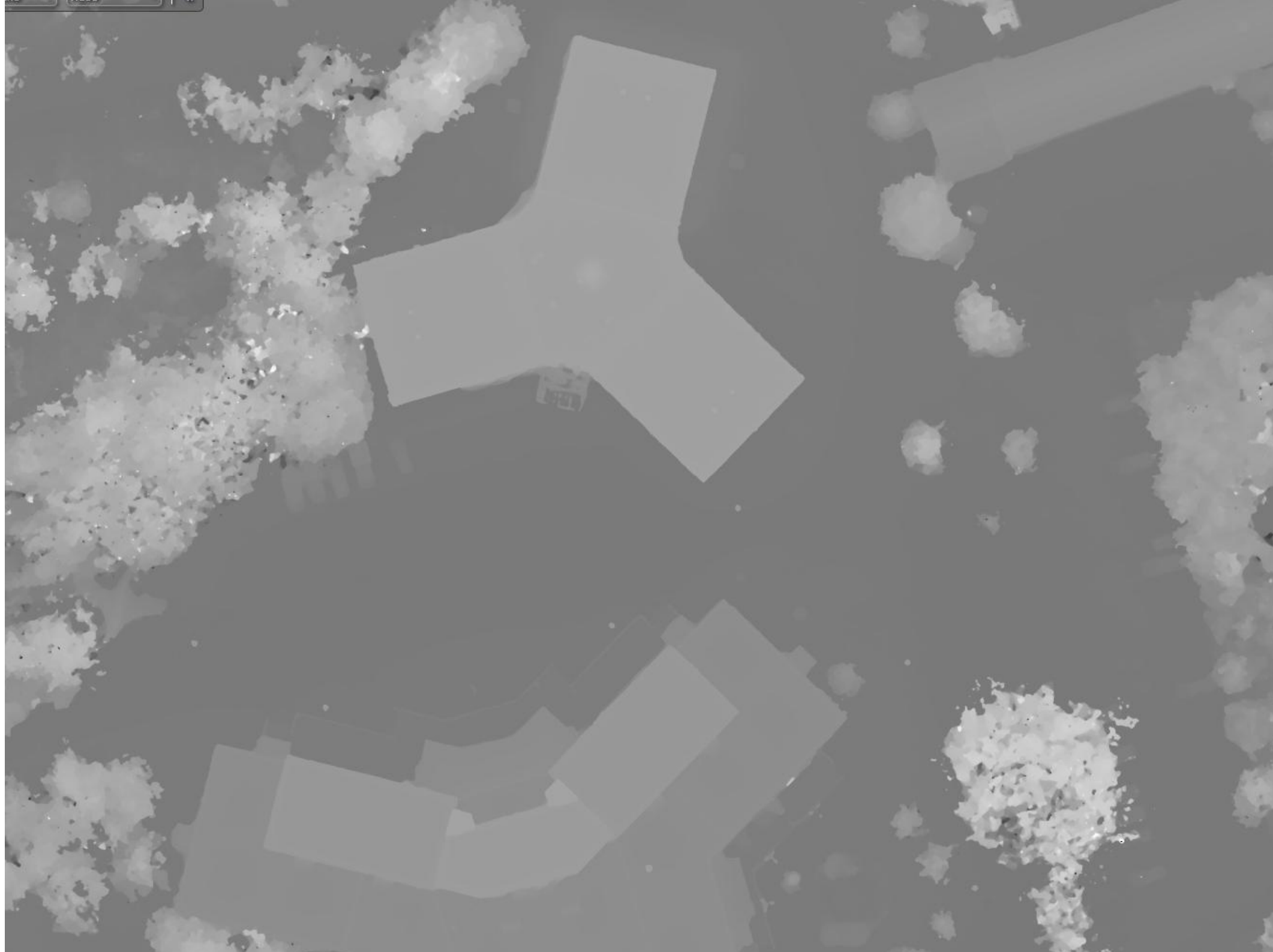
8 CPU, 3.2 GHz, 32 GB RAM

4 GPU T10, 16 GB

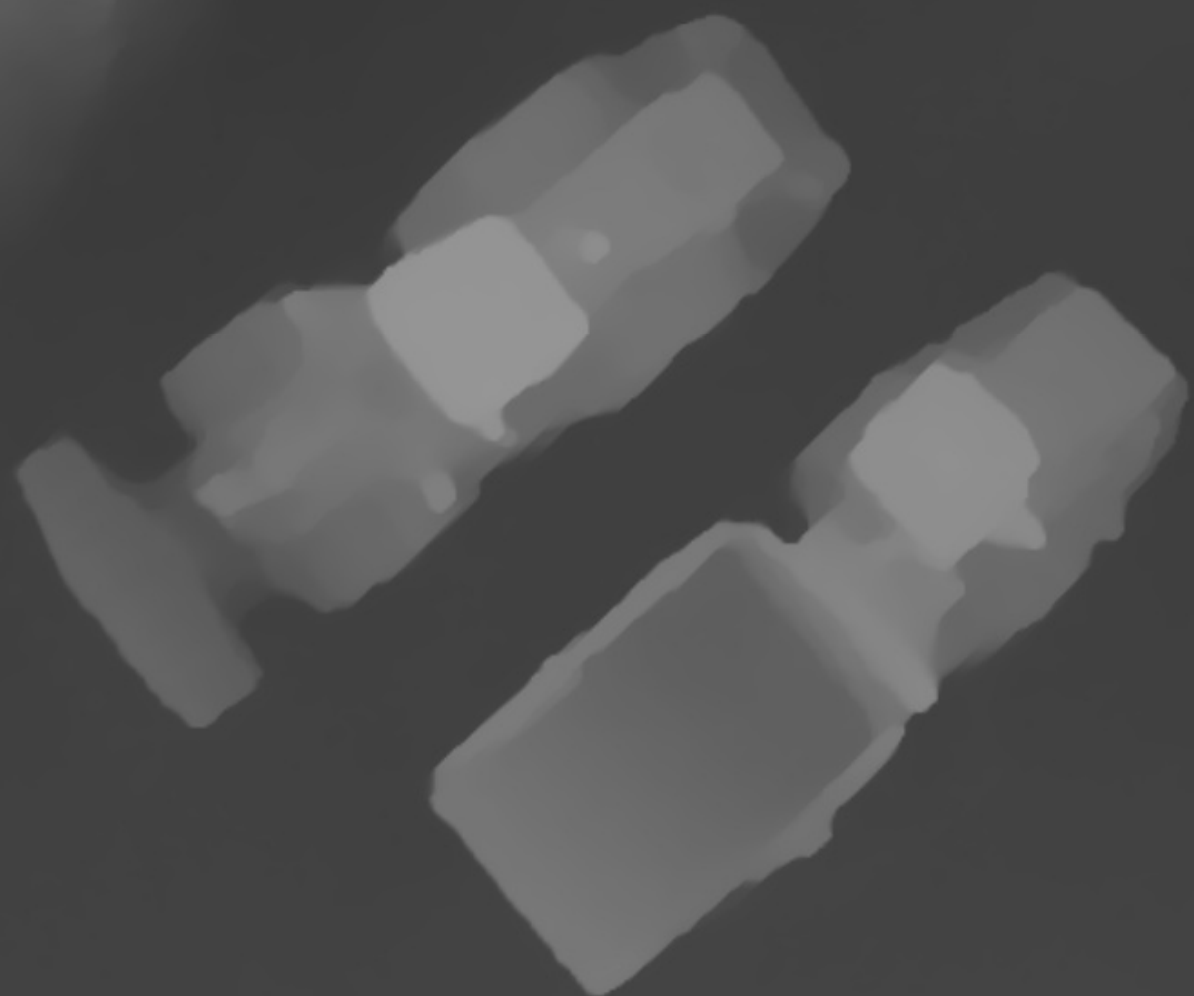
1.2 min / Photo (DSM)







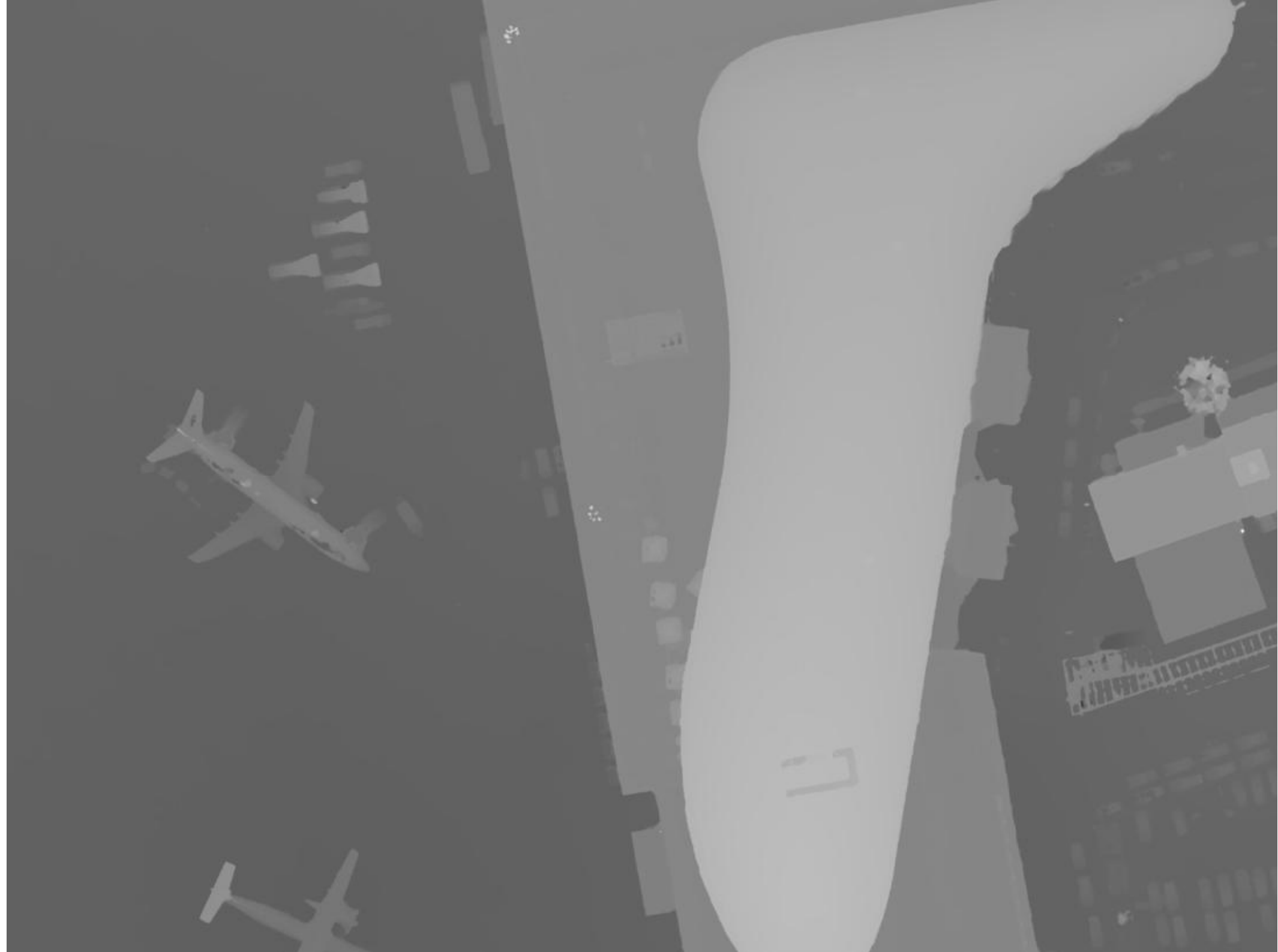


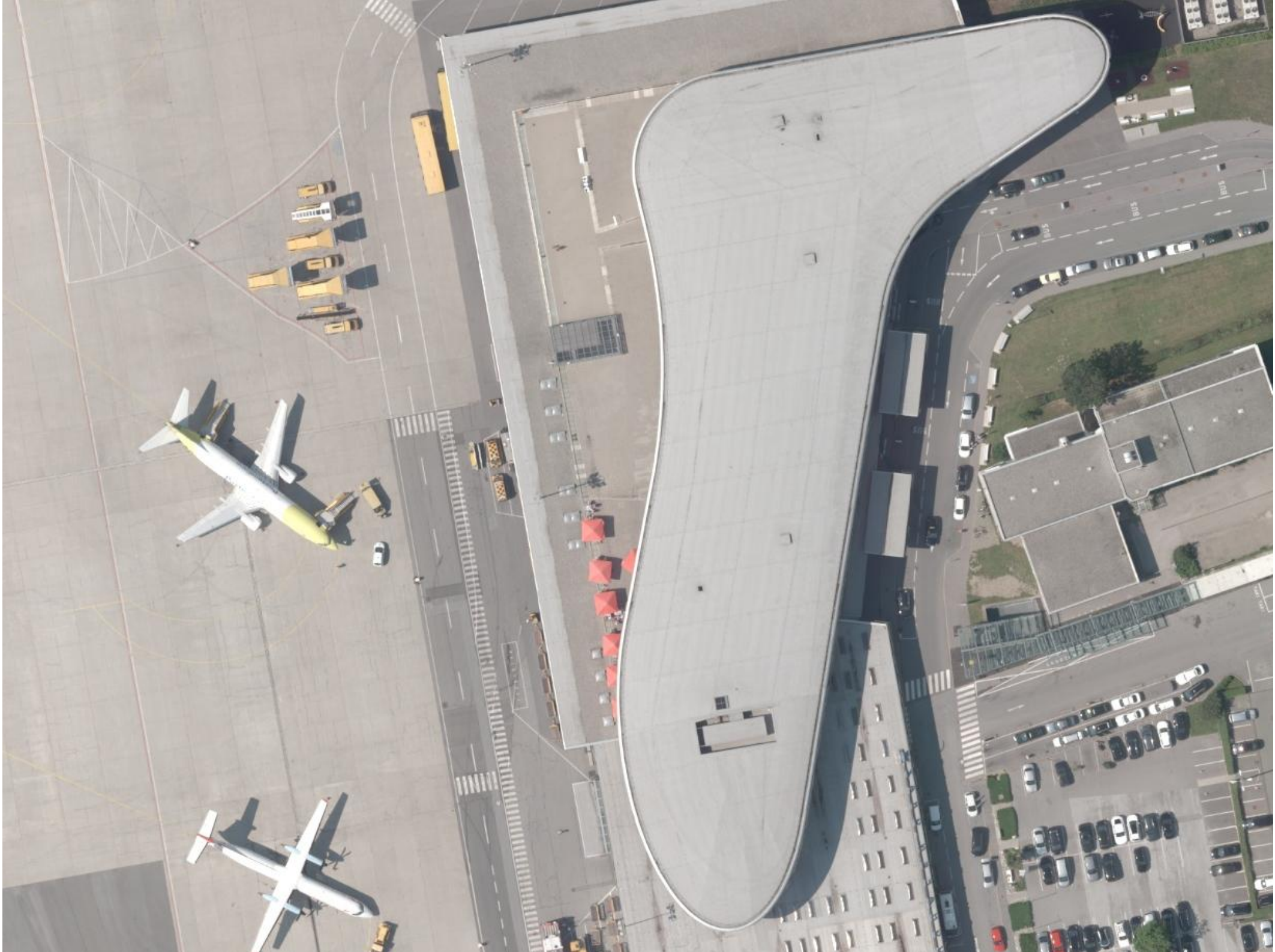


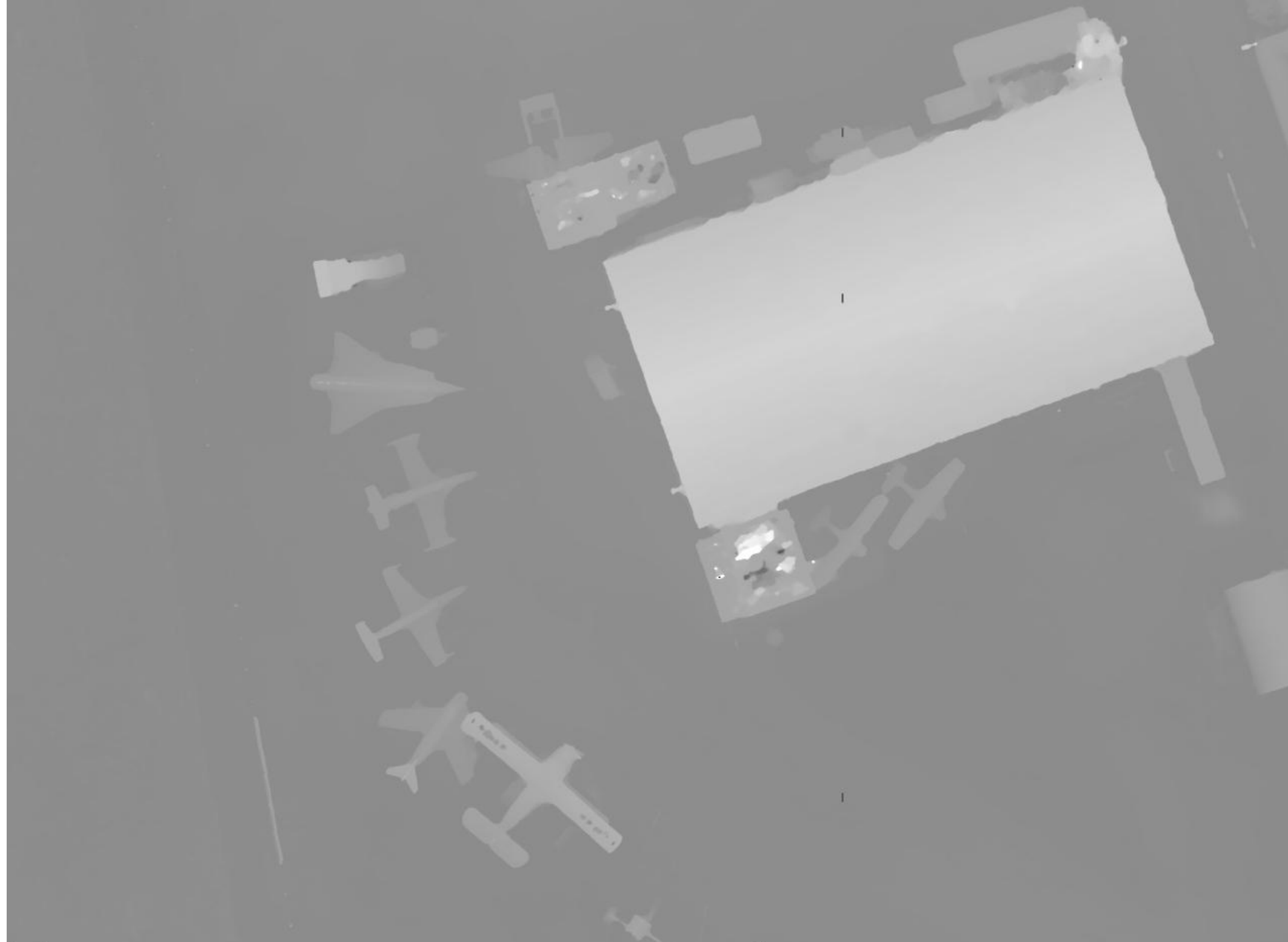














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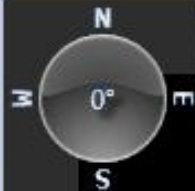
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V3.0

PROTOTYPE

Technology Preview

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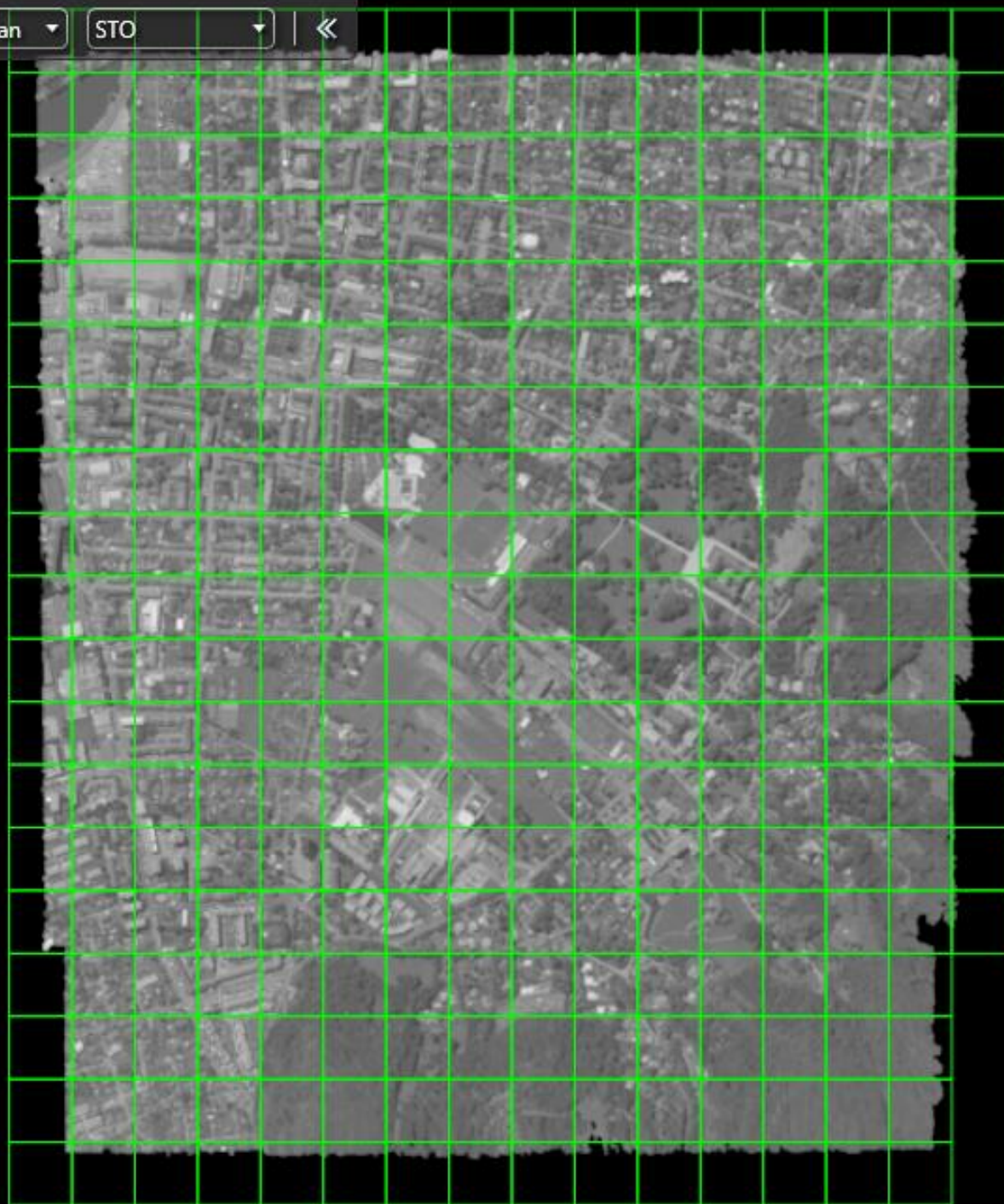
World Position x:



IndexMap

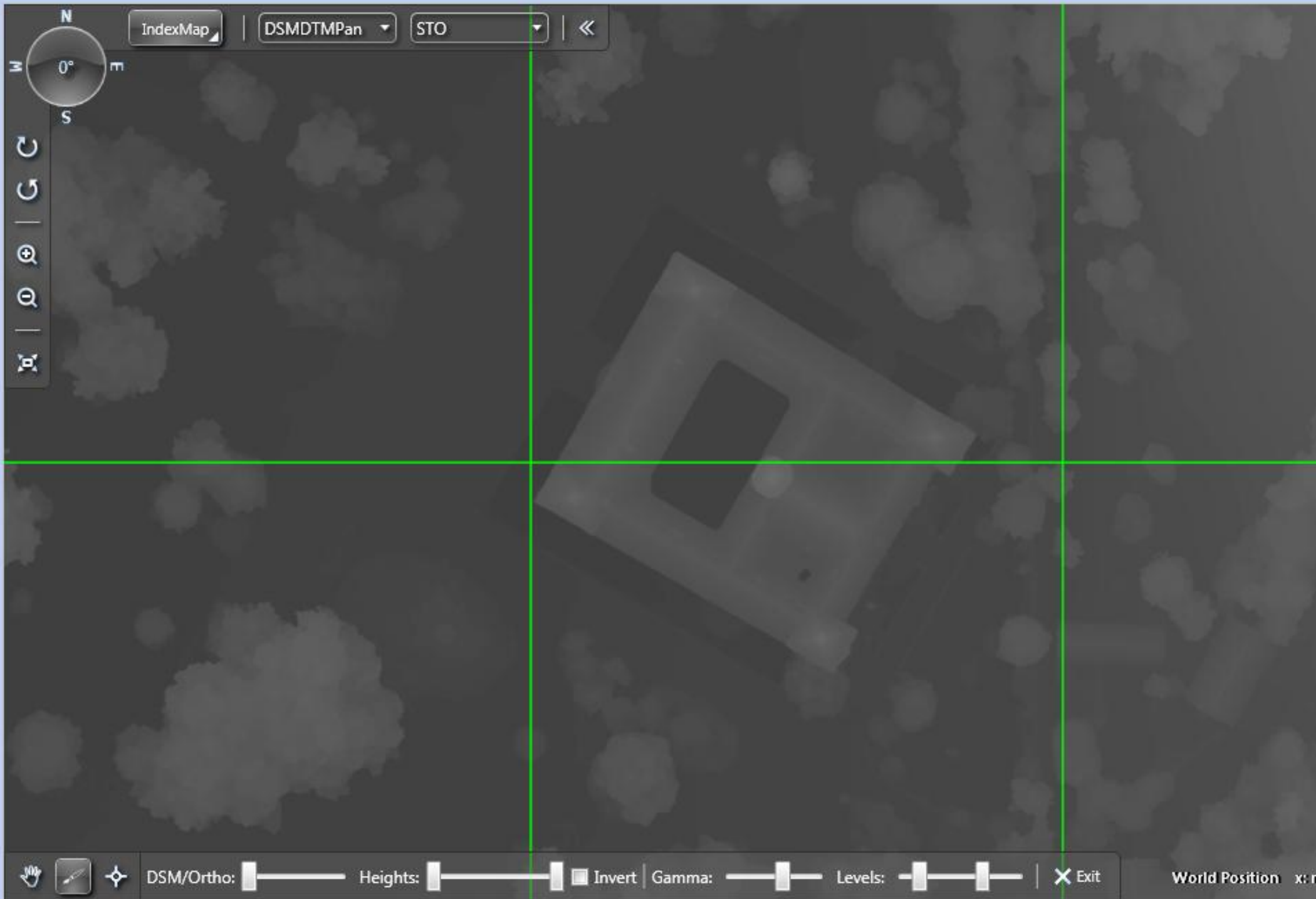
DSMDTMPan

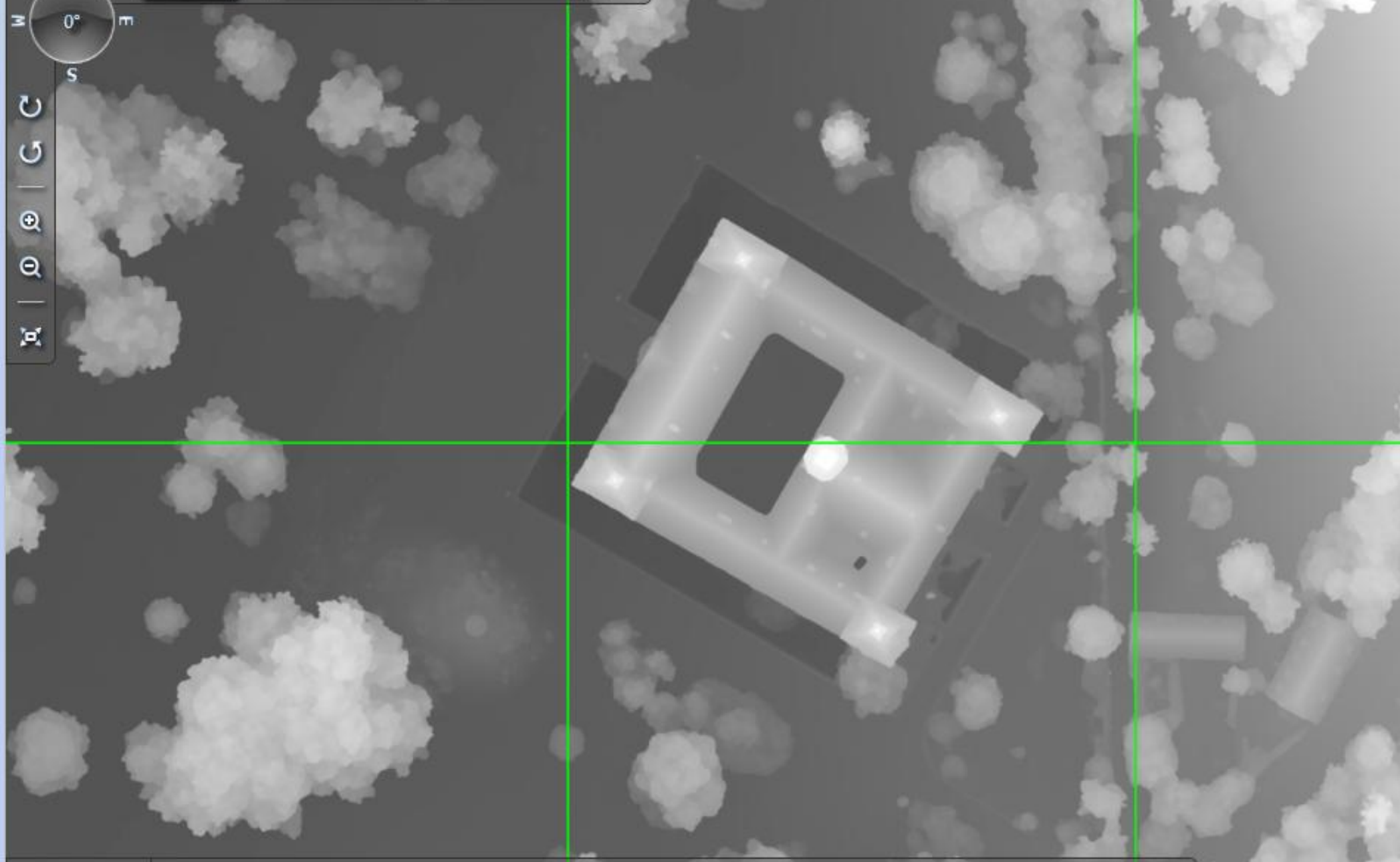
STO

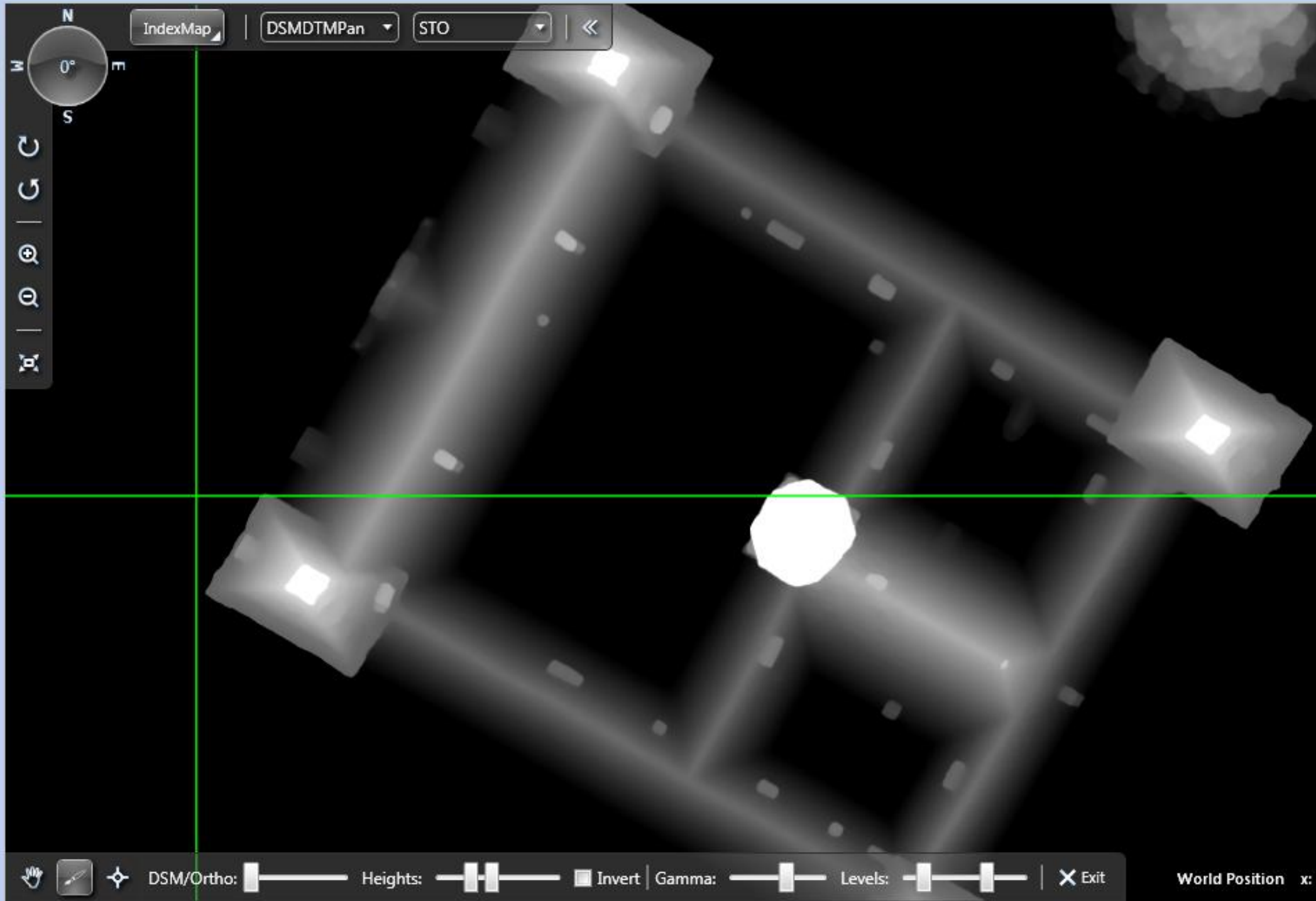


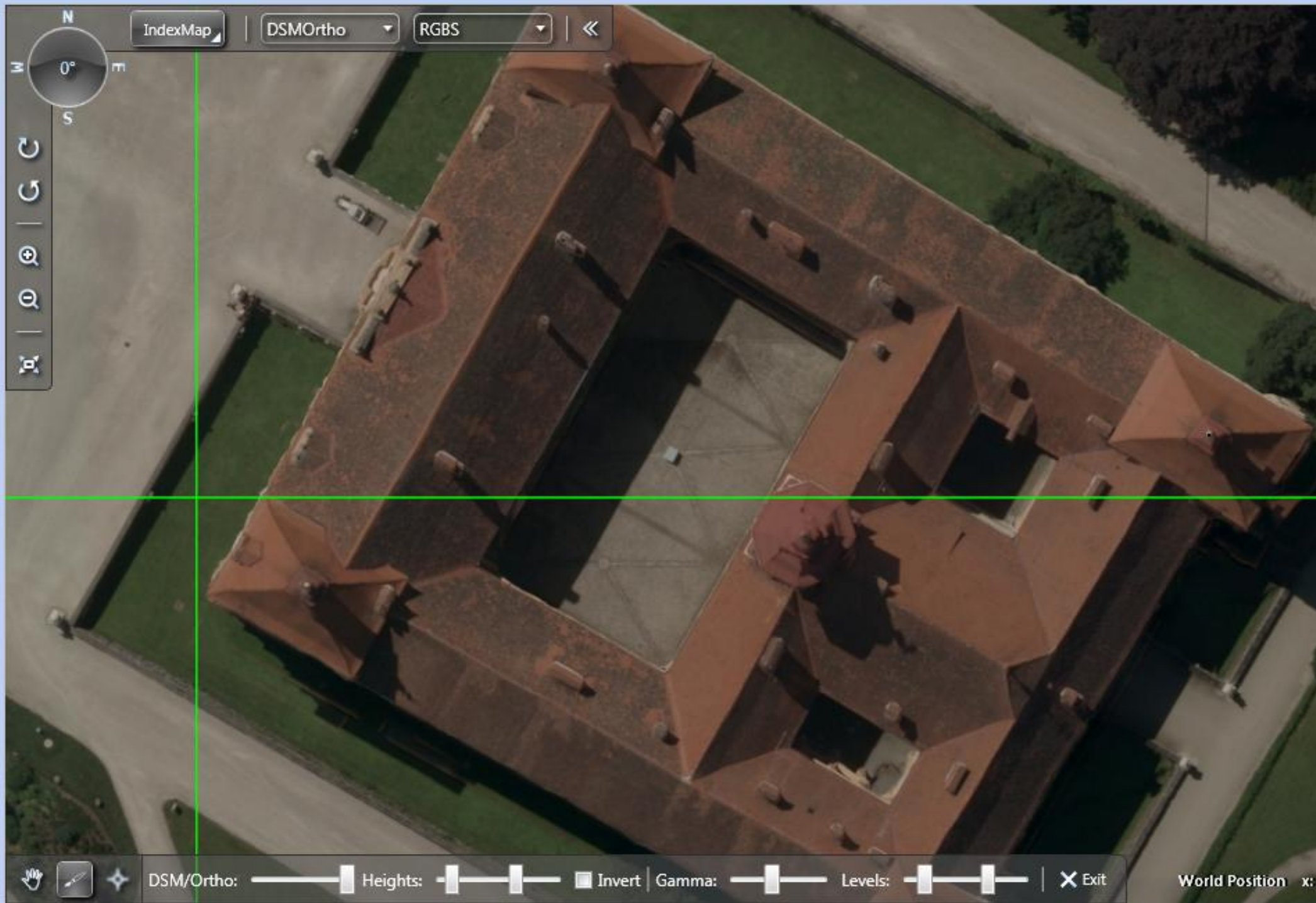
World Position x:

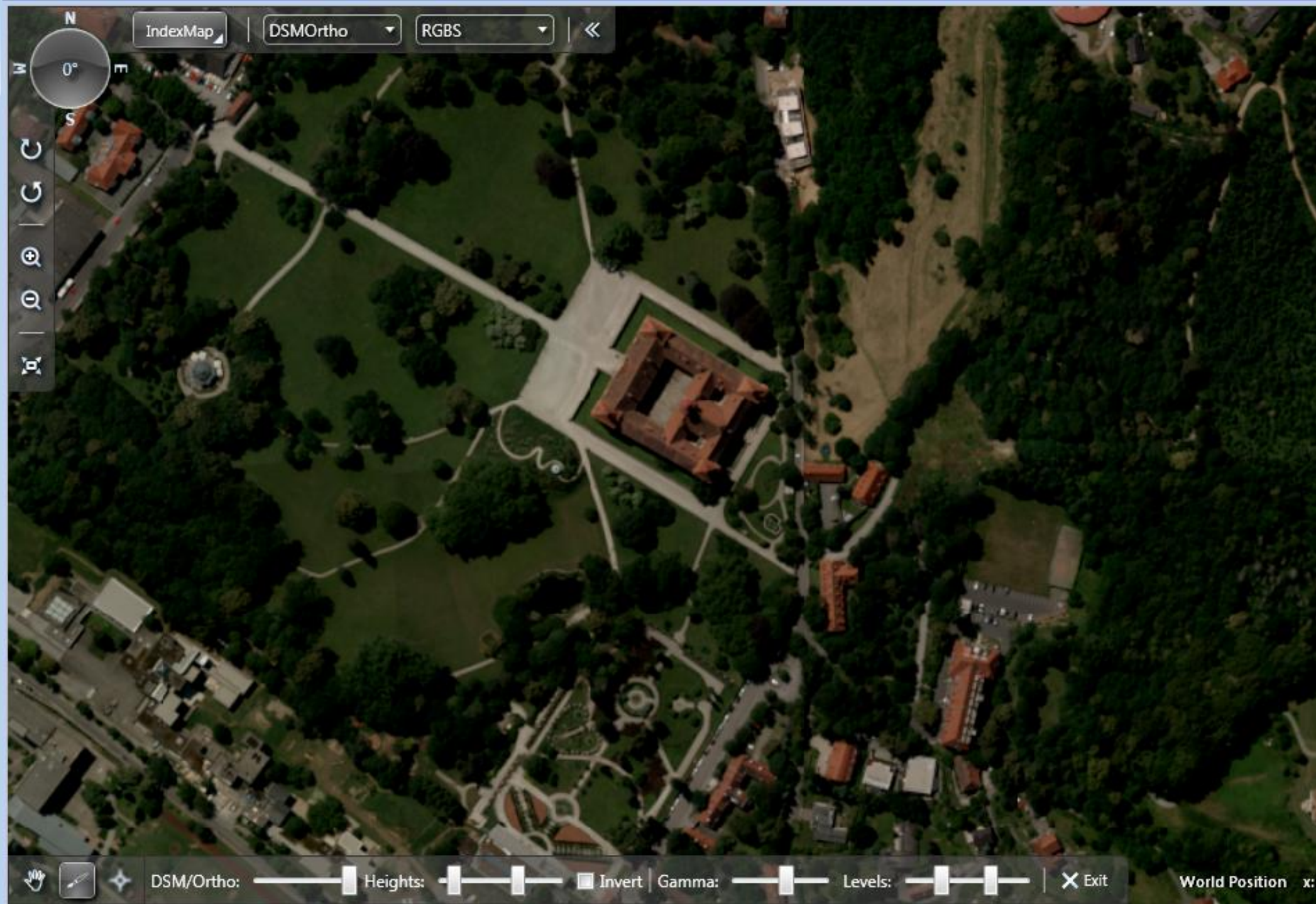


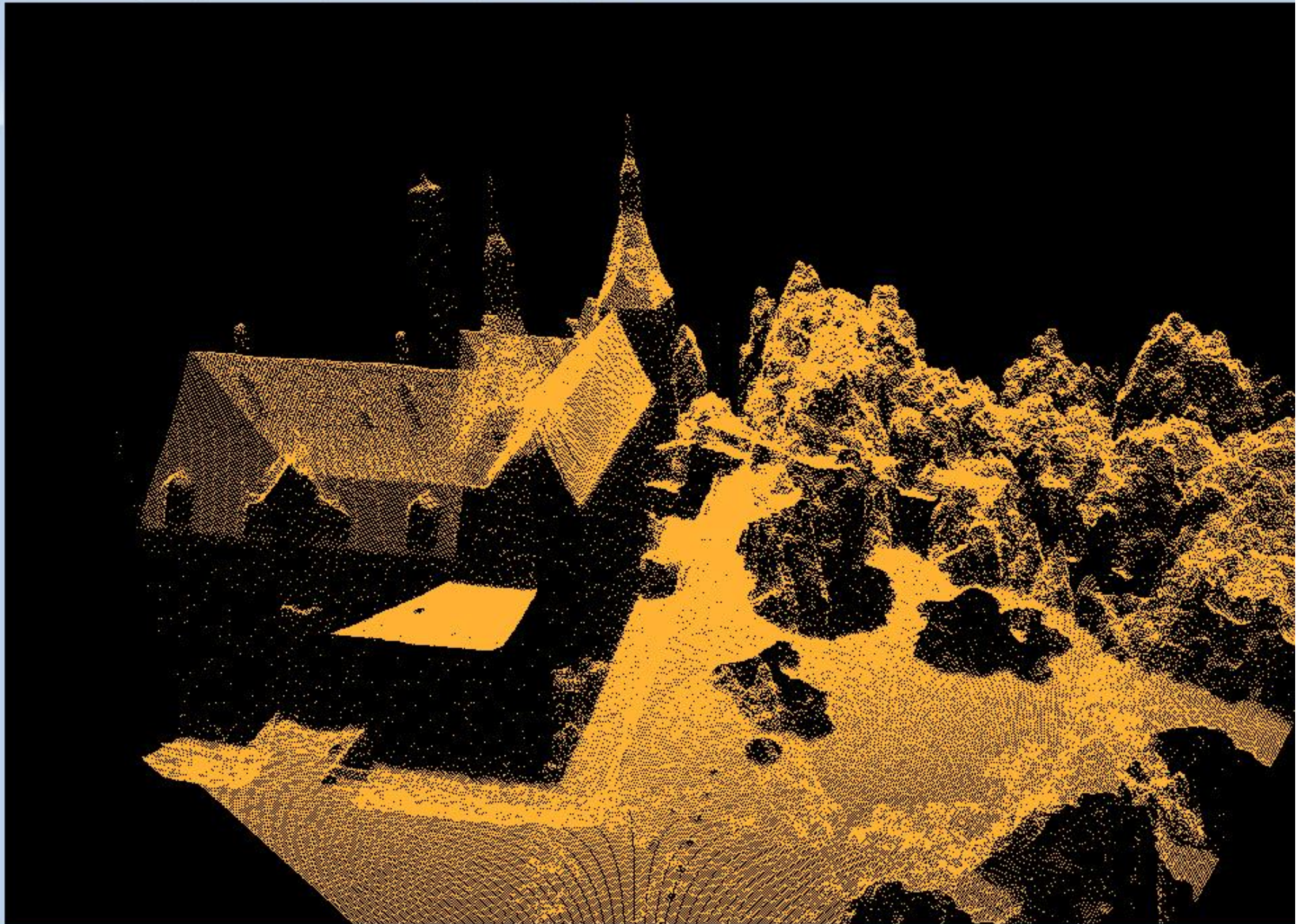


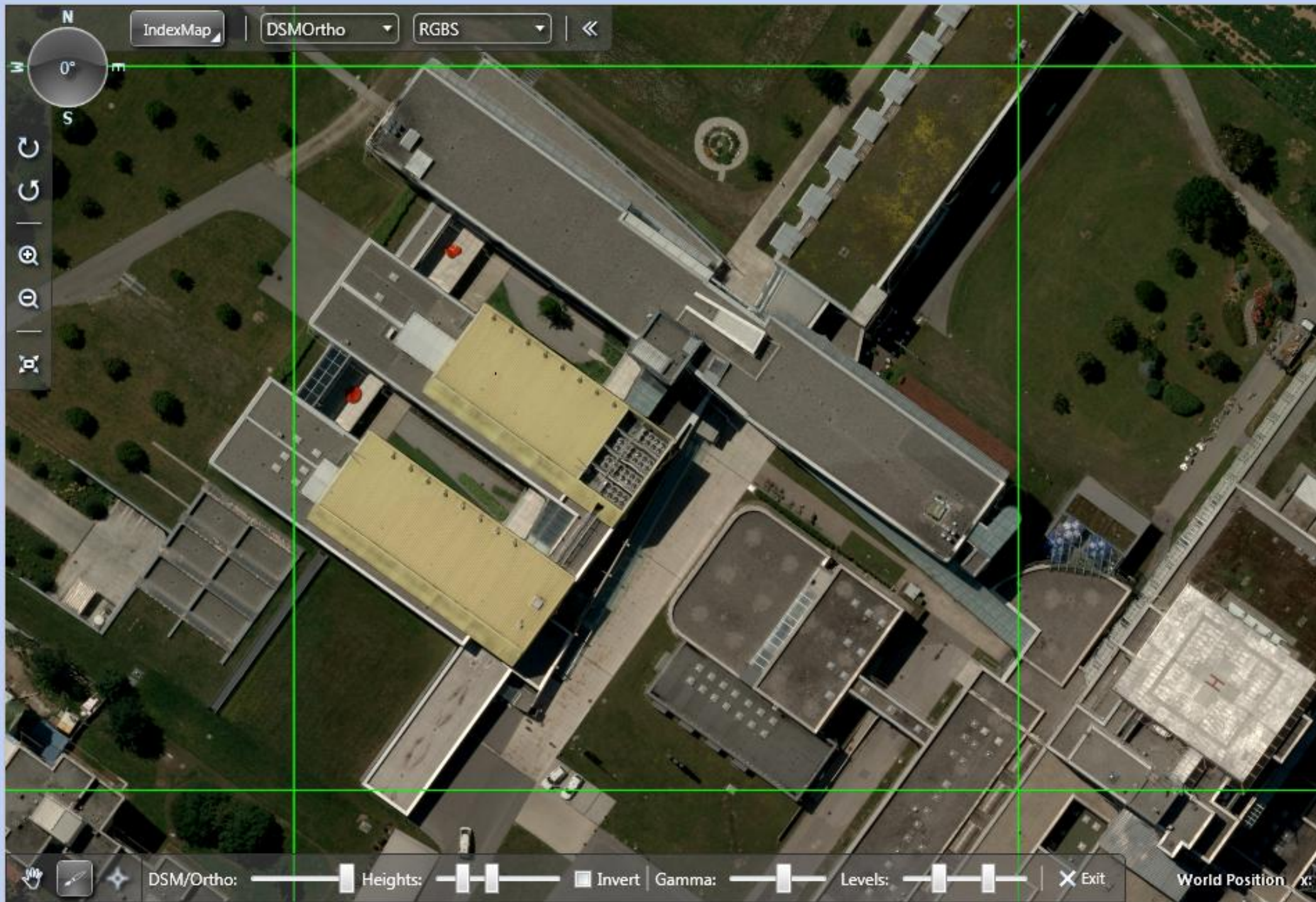


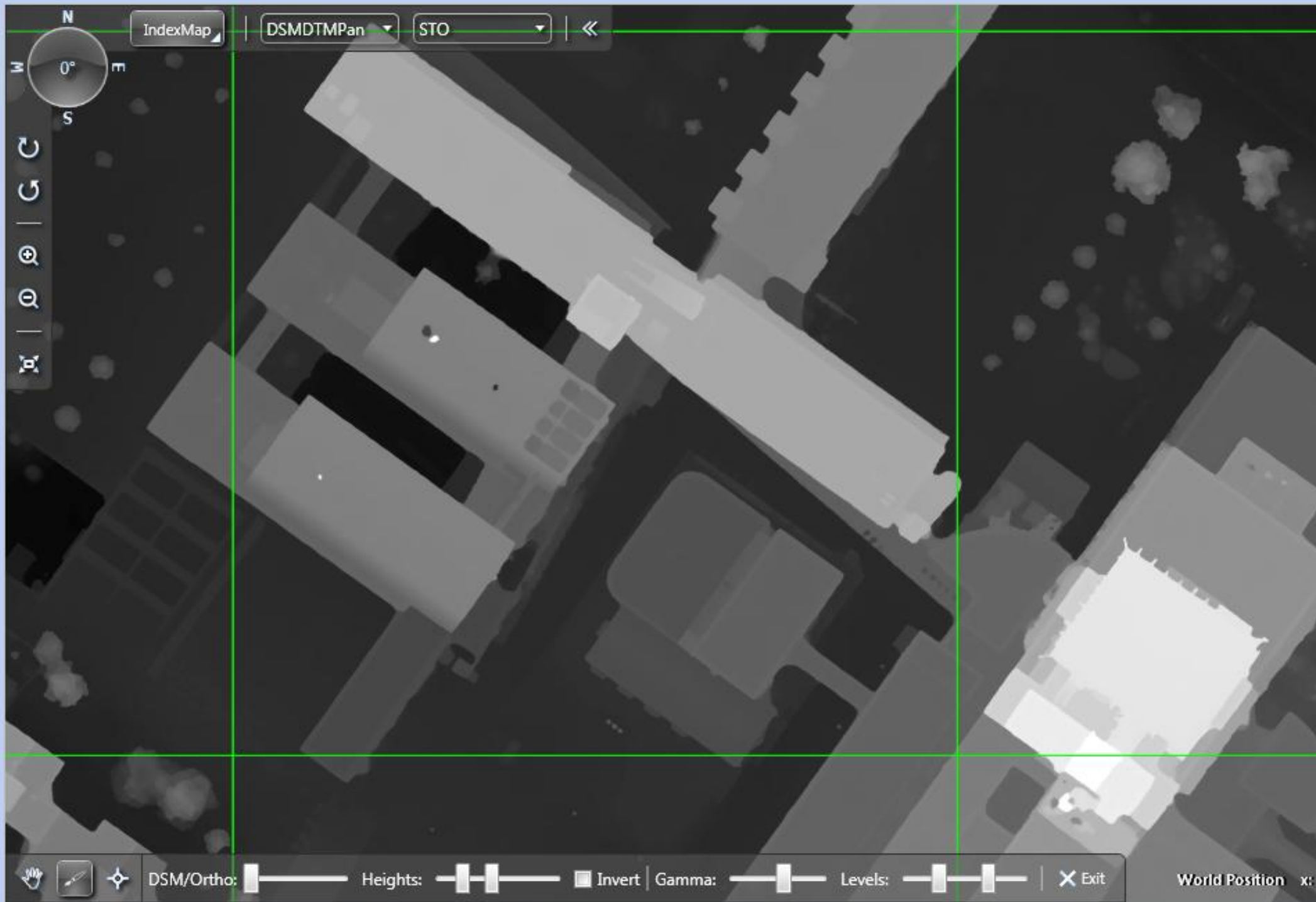


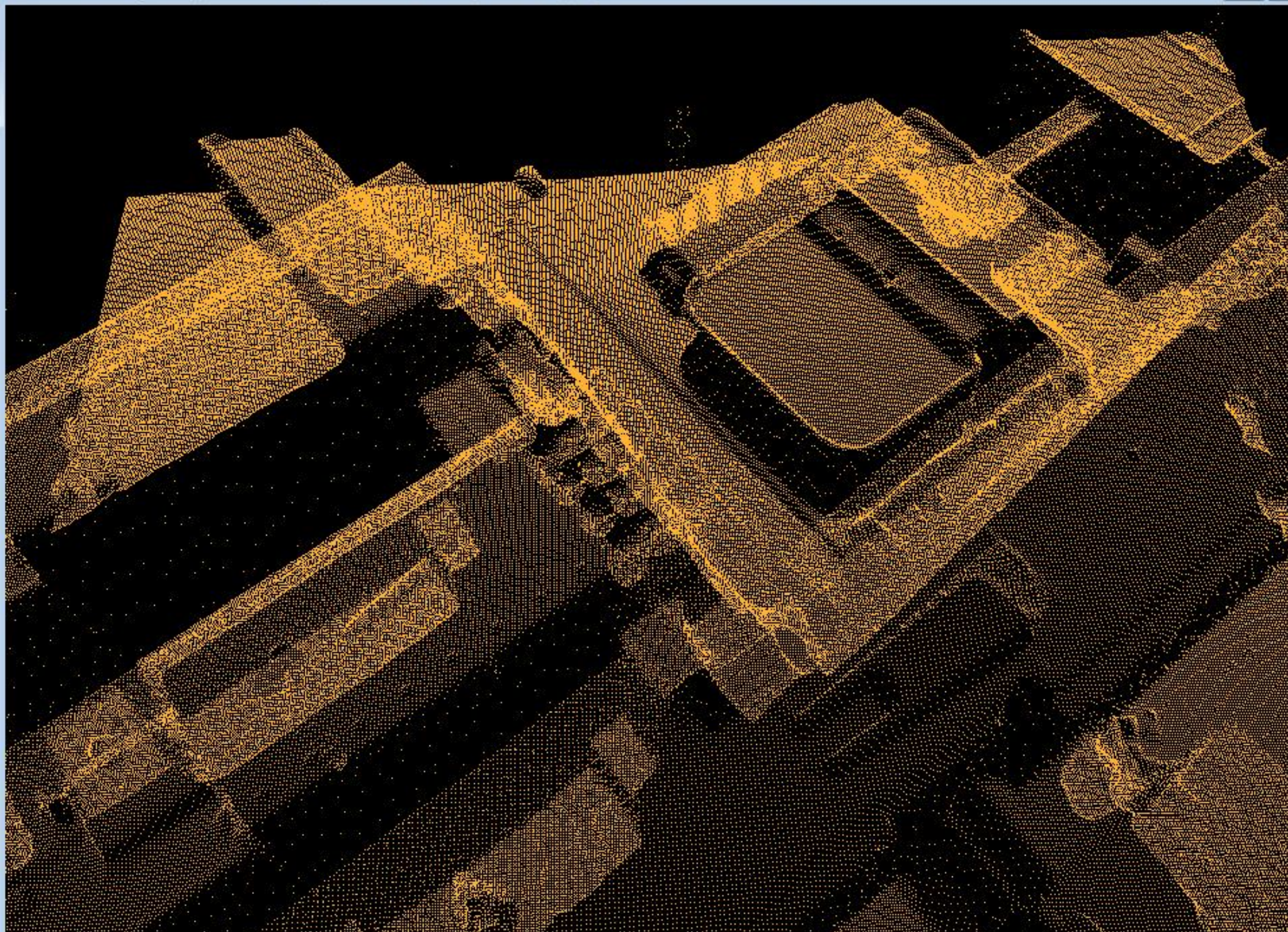


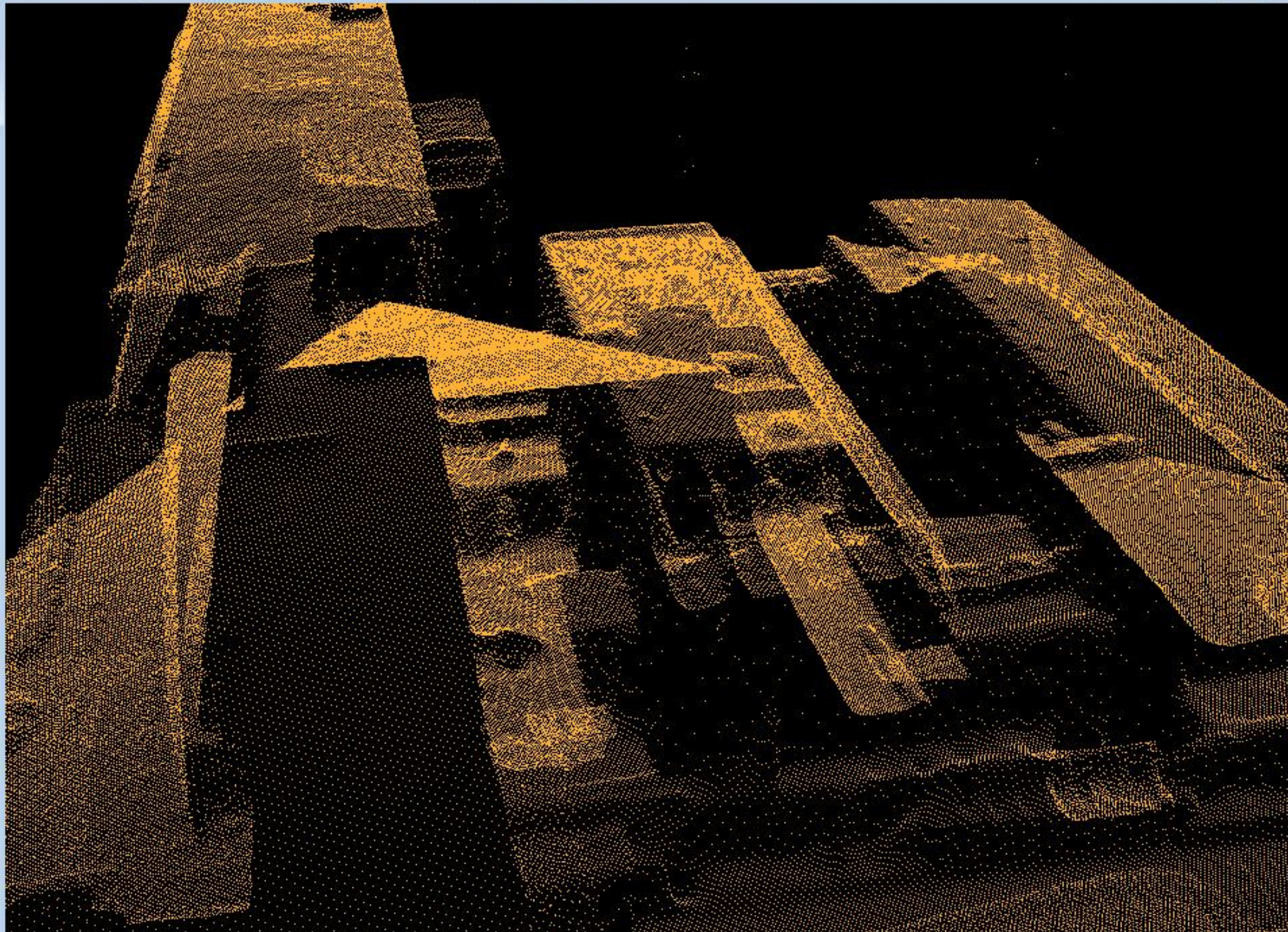












An aerial photograph of an airport tarmac. Three white Lufthansa aircraft are parked in a diagonal line. The top aircraft is a large wide-body jet with 'Lufthansa' and 'STEWART & SONS' visible on its fuselage. The middle aircraft is a smaller twin-engine jet, and the bottom one is a small propeller plane. Yellow ground support vehicles are positioned near the middle and bottom aircraft. Yellow directional signs with numbers 20, 30, 21, 31, 22, and 32 are visible on the right side of the tarmac. The text 'Thank You' is overlaid in the center in a large, white, sans-serif font.

Thank You