PHOTOMOD 6.3

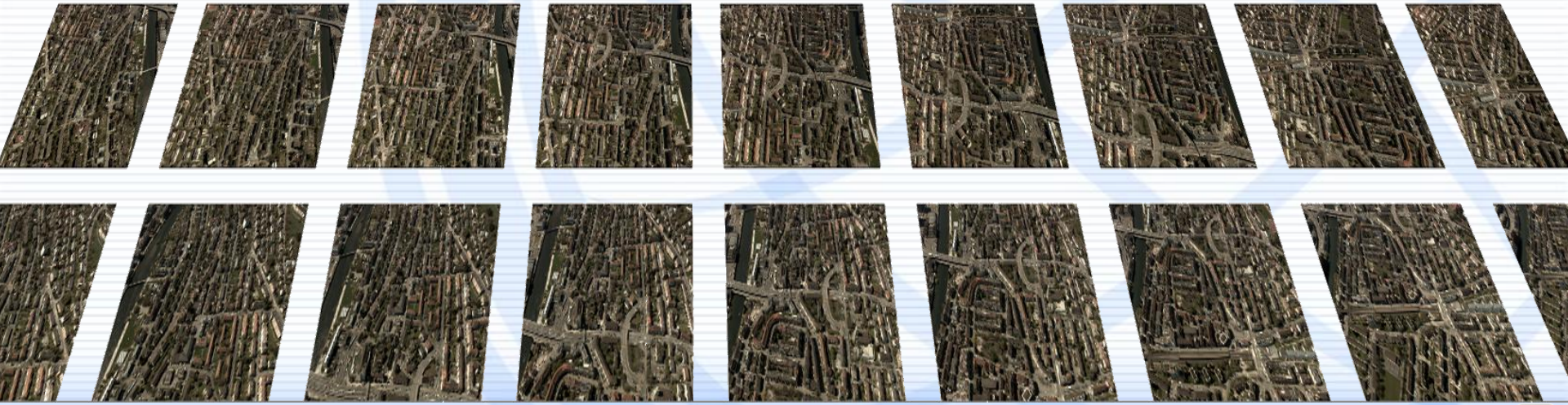
new features

Dmitry Kochergin
Head of Technical support department
Racurs, Russia

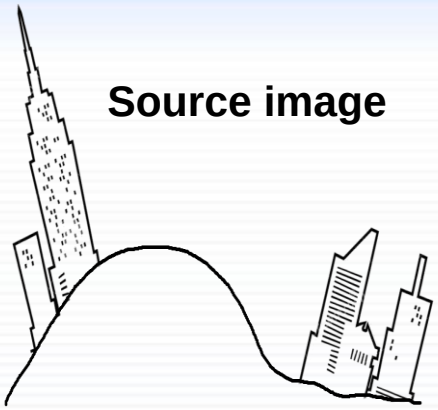
Hadera. Israel. October 2017

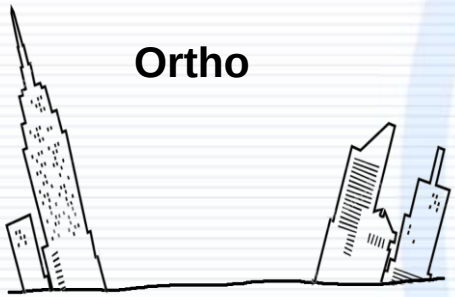
PHOTOMOD 6.3 highlights

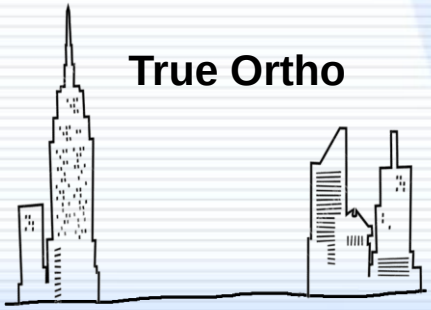
- ✓ Fully automatic generation of True-Ortho
- ✓ Improved dense DSM quality
- ✓ Point cloud filtering capabilities
- ✓ New pan-sharpening method (EPCA)
- ✓ Additional stereovectorization tools
- ✓ Increased reliability of UAS aerial triangulation
- ✓ Accelerated orthorectification for urban and mountain area
- ✓ New report of UAS-project processing
- ✓ Export of RPC
- ✓ PHOTOMOD UAS interface changes
- ✓ UltraCam metadata import improvements

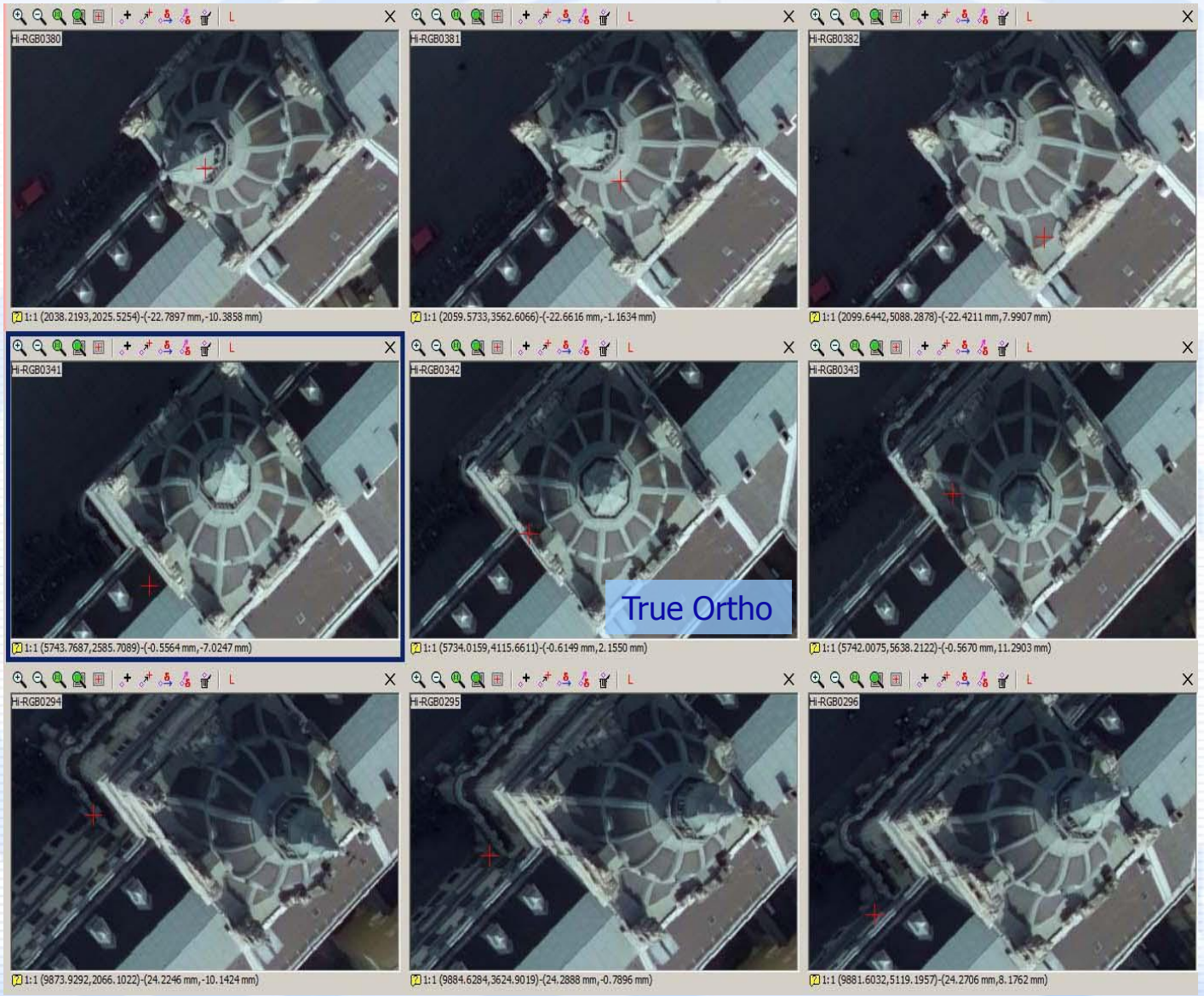


True Ortho


Source image

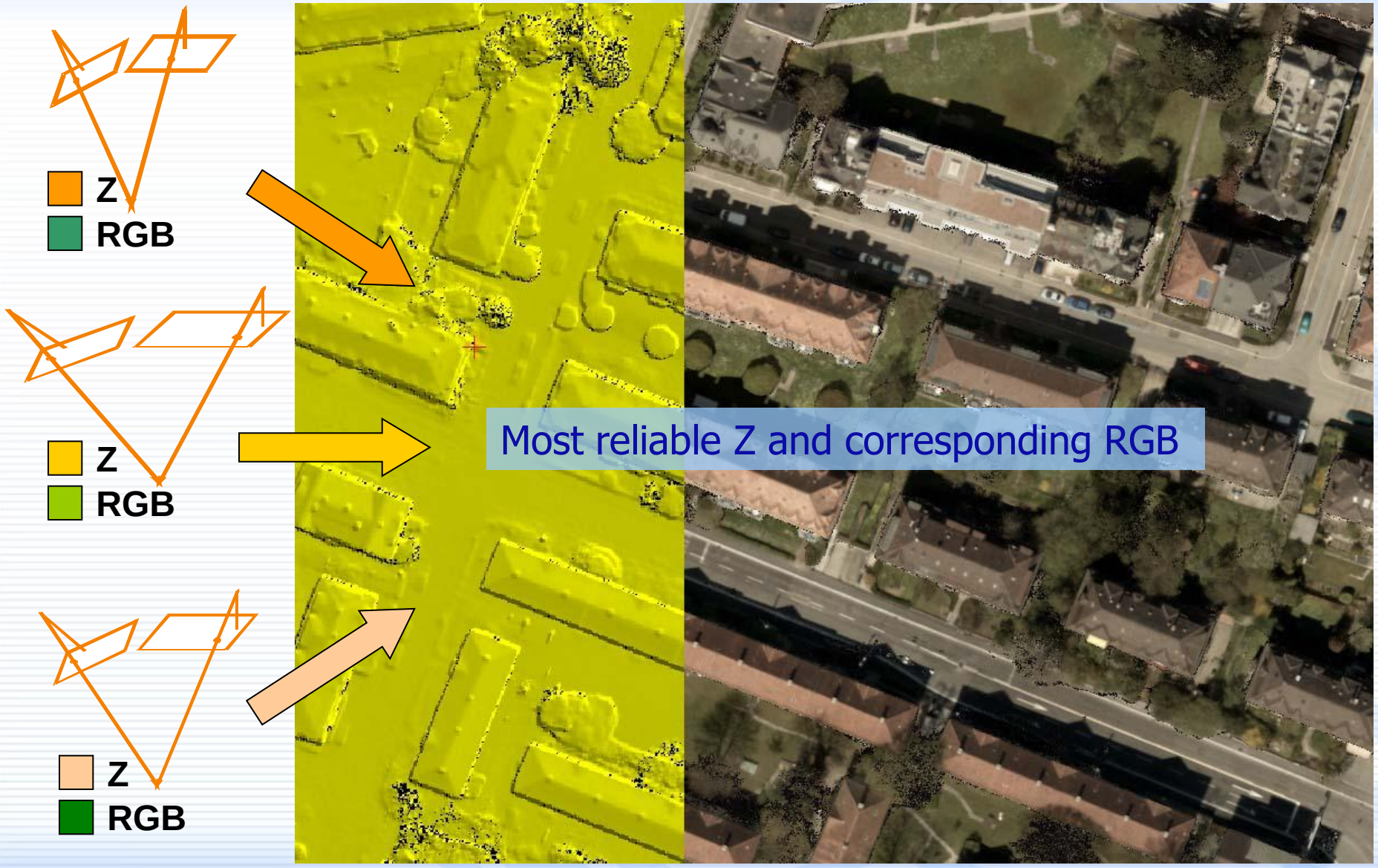

Ortho


True Ortho

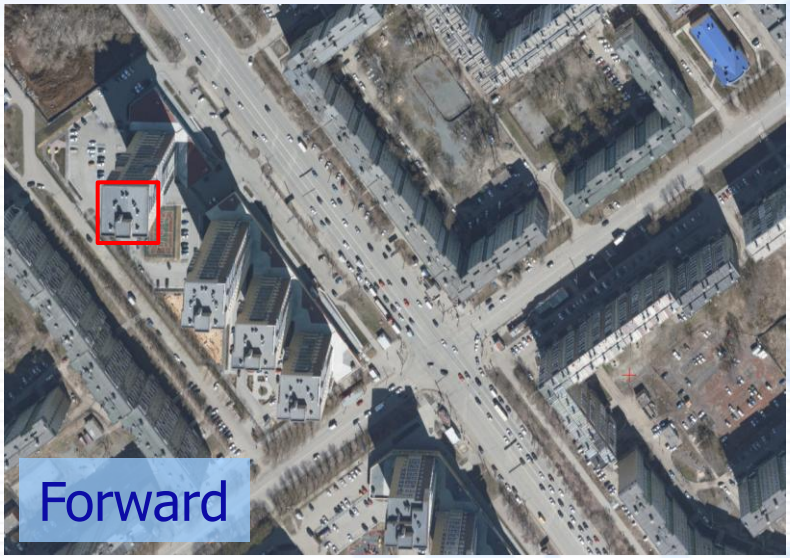

Hi-RGB0380
1:1 (2038.2193,2025.5254)-(-22.7897 mm,-10.3858 mm)
Hi-RGB0381
1:1 (2059.5733,3562.6066)-(-22.6616 mm,-1.1634 mm)
Hi-RGB0382
1:1 (2099.6442,5088.2878)-(-22.4211 mm,7.9907 mm)
Hi-RGB0341
1:1 (5743.7687,2585.7089)-(-0.5564 mm,-7.0247 mm)
Hi-RGB0342
True Ortho
1:1 (5734.0159,4115.6611)-(-0.6149 mm,2.1550 mm)
Hi-RGB0343
1:1 (5742.0075,5638.2122)-(-0.5670 mm,11.2903 mm)
Hi-RGB0294
1:1 (9873.9292,2066.1022)-(24.2246 mm,-10.1424 mm)
Hi-RGB0295
1:1 (9884.6284,3624.9019)-(24.2888 mm,-0.7896 mm)
Hi-RGB0296
1:1 (9881.6032,5119.1957)-(24.2706 mm,8.1762 mm)

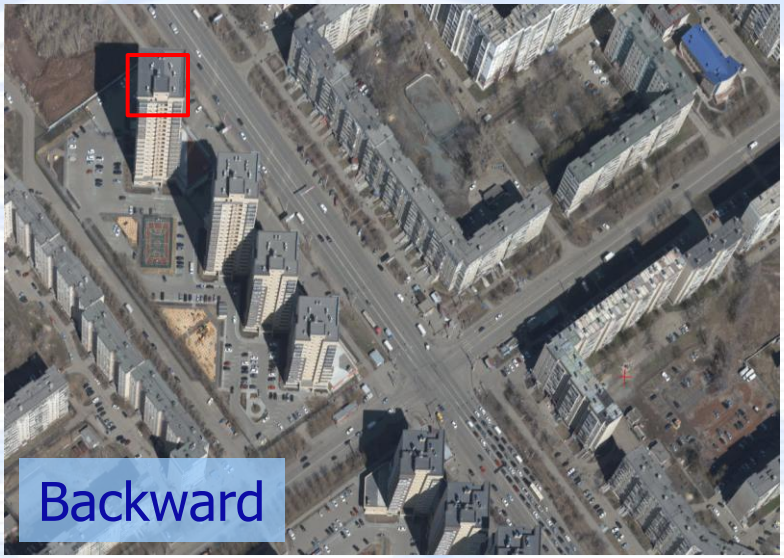
True-Ortho in PHOTOMOD

True Ortho pixel value (RGB)



True Ortho (Leica RCD-30 Oblique)





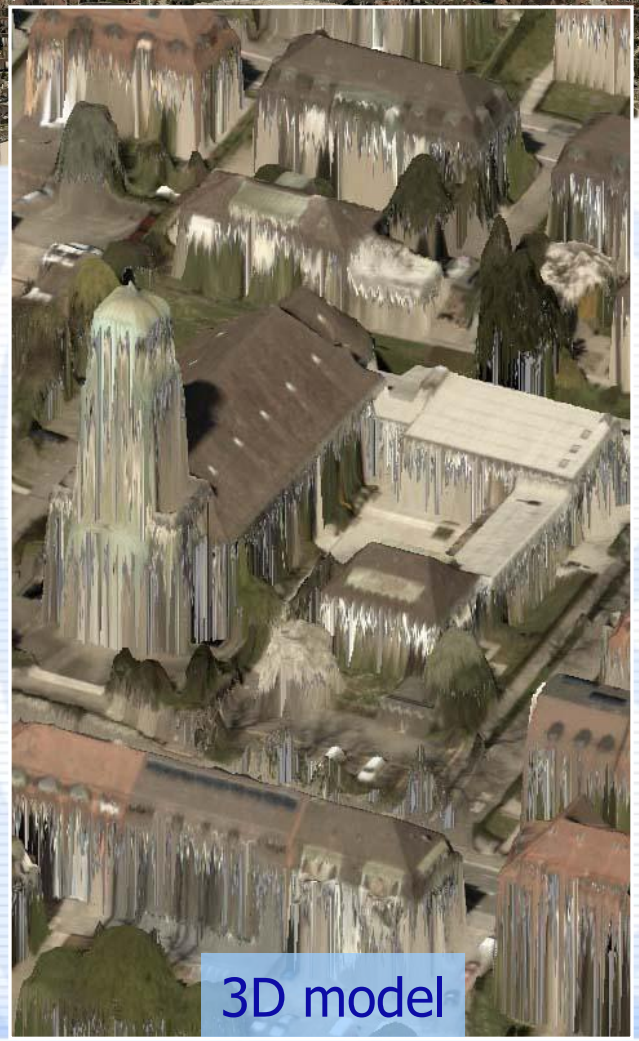
UltraCam Osprey

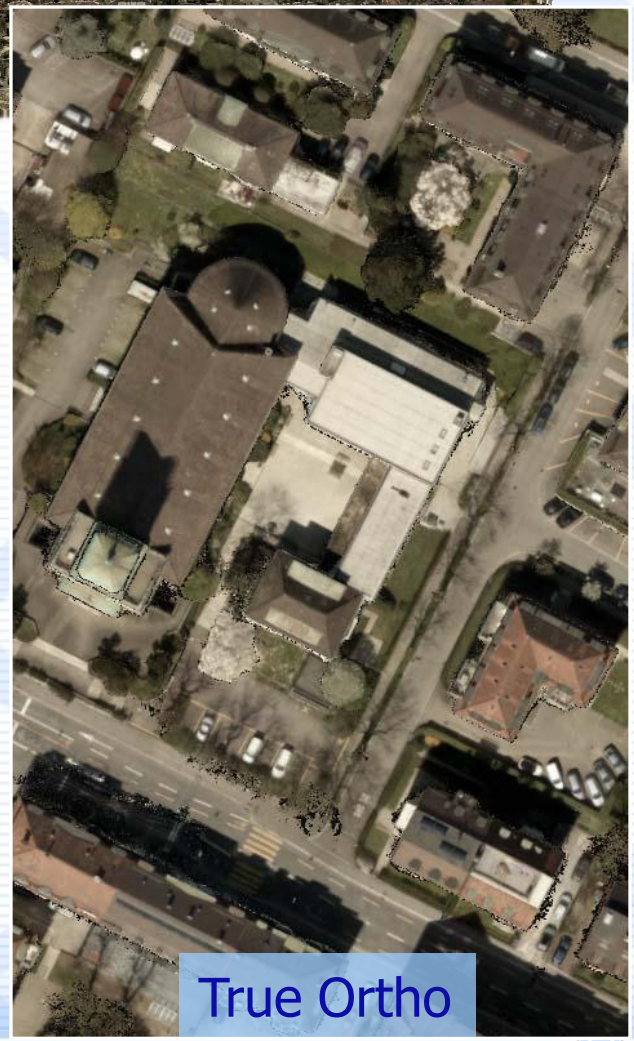
Point cloud

3D model

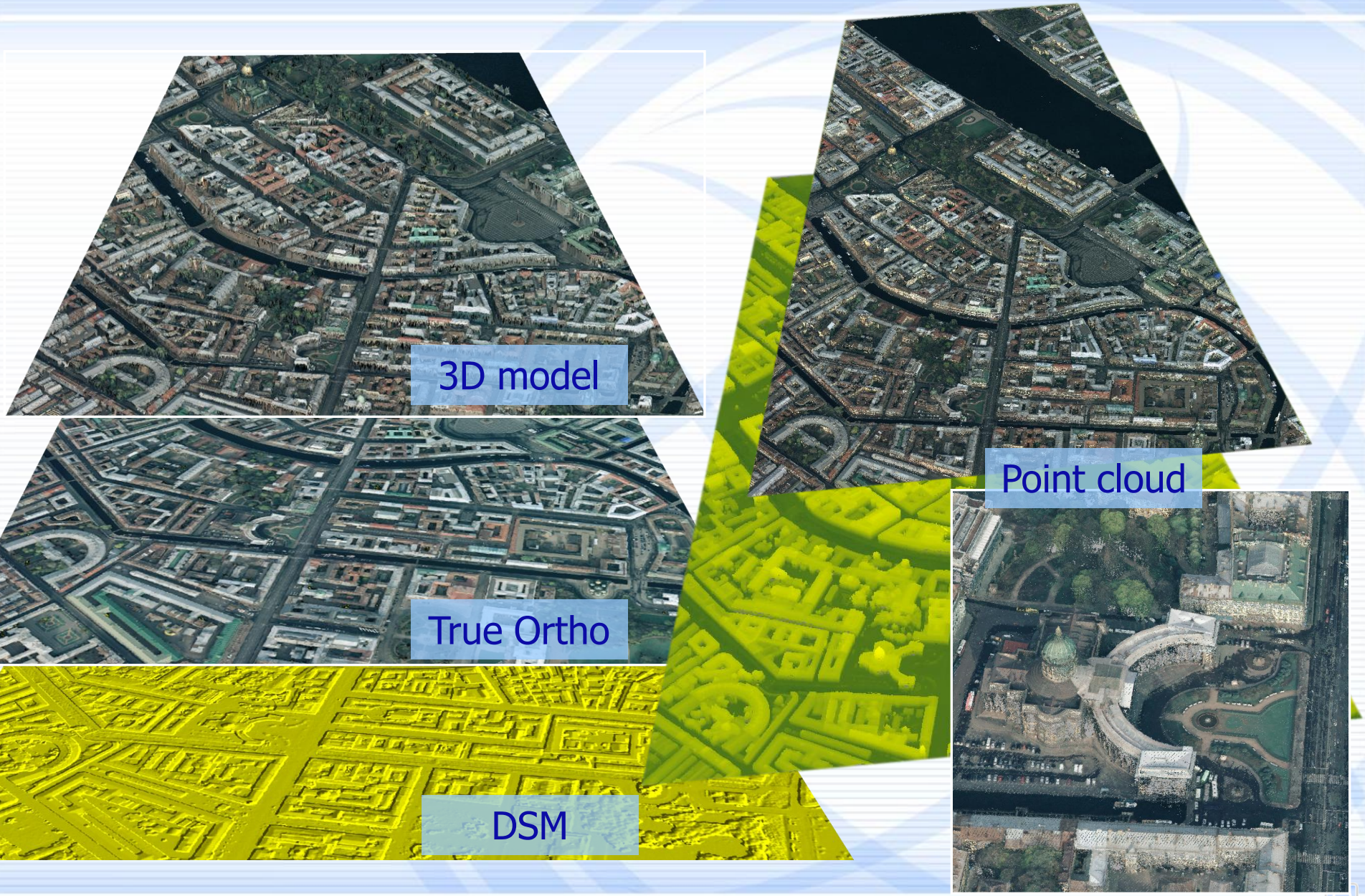
True Ortho

Leica RCD-30 Oblique

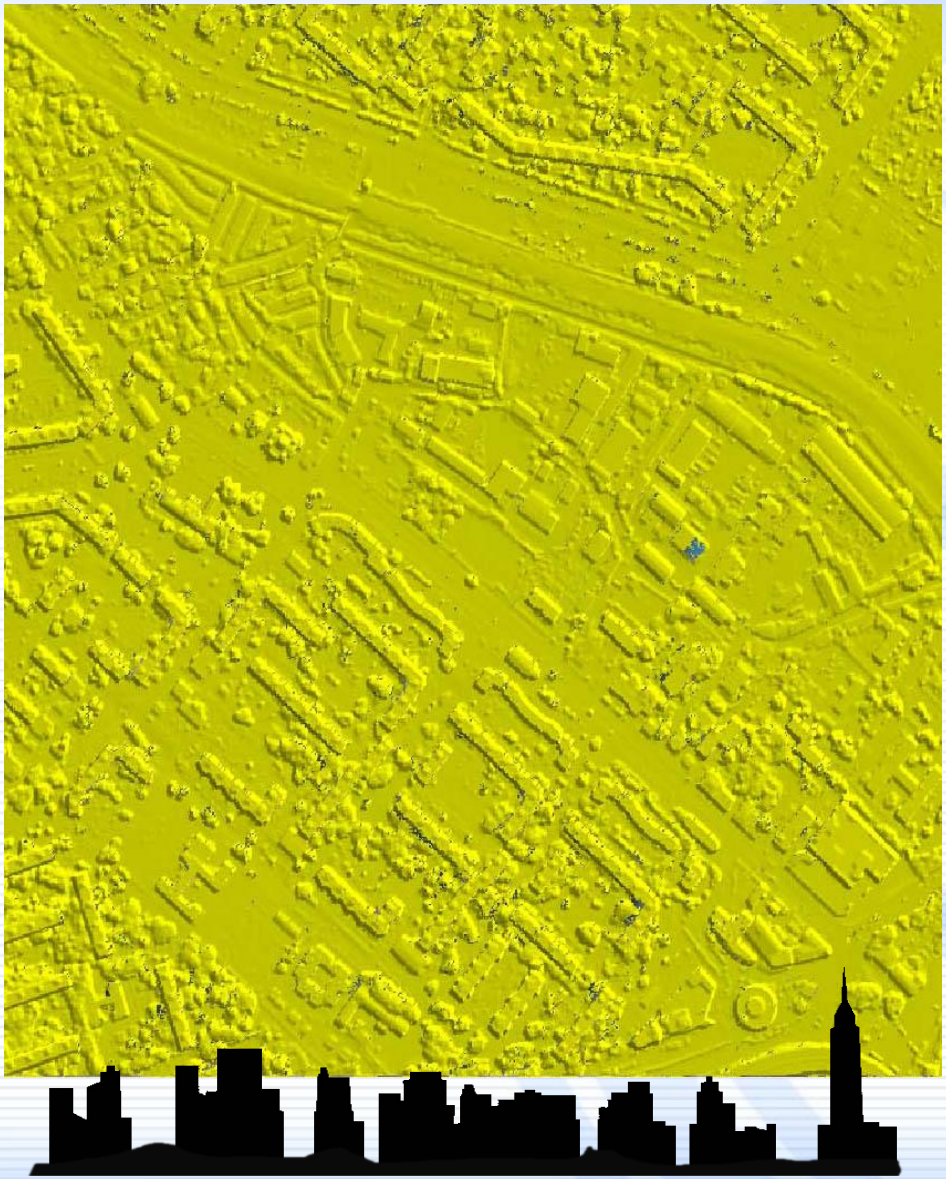


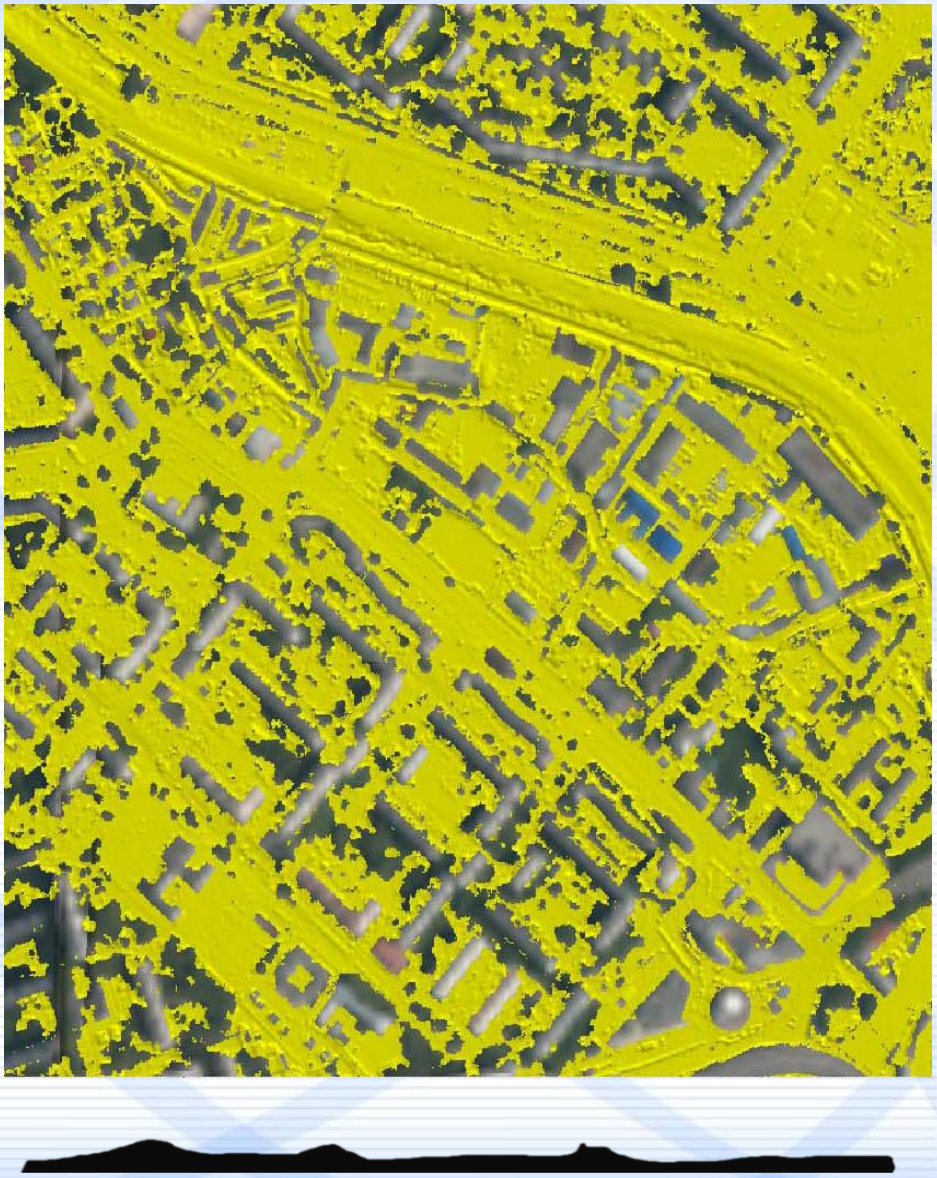


3D model vs Point cloud

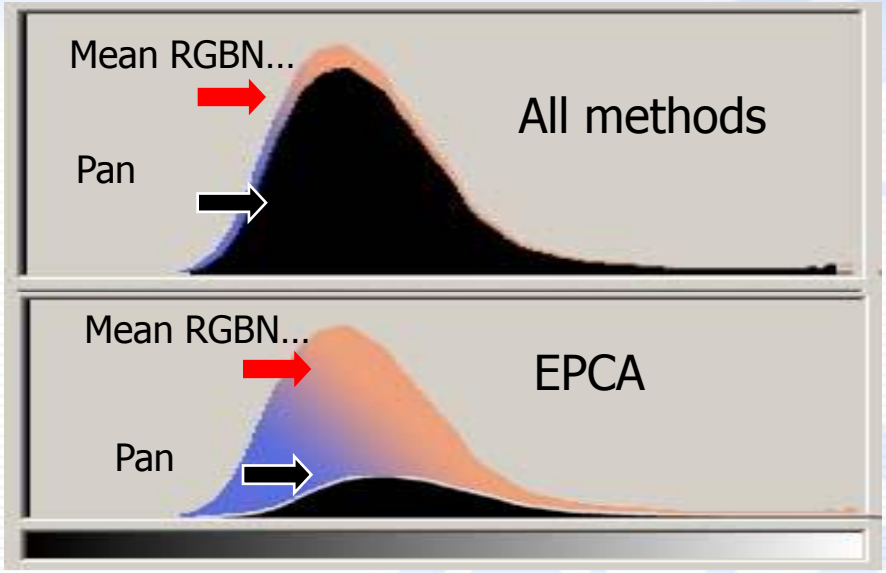


Filtering by slope angle (DSM - DTM)

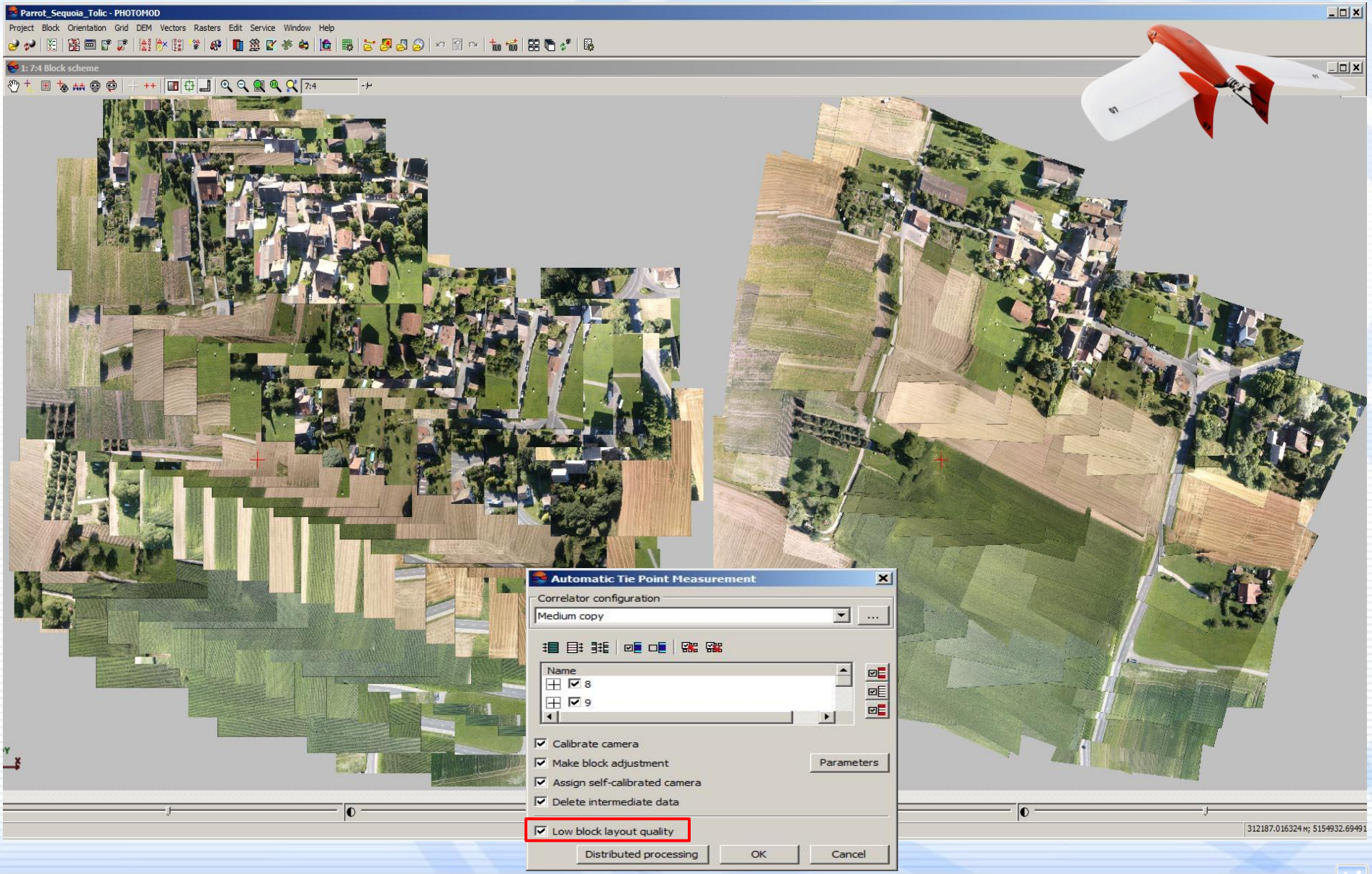




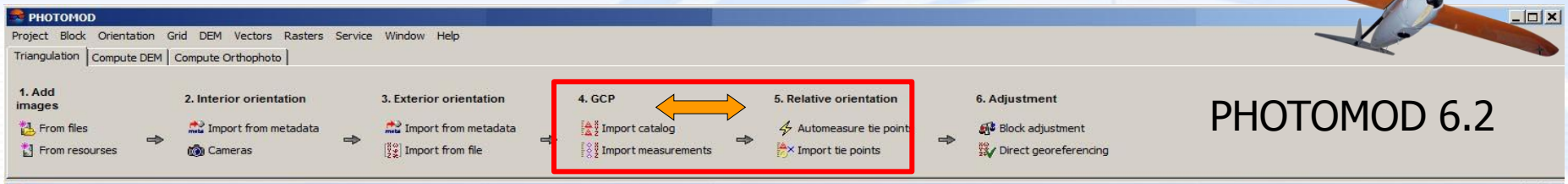
EPCA. New Pan-sharpening method



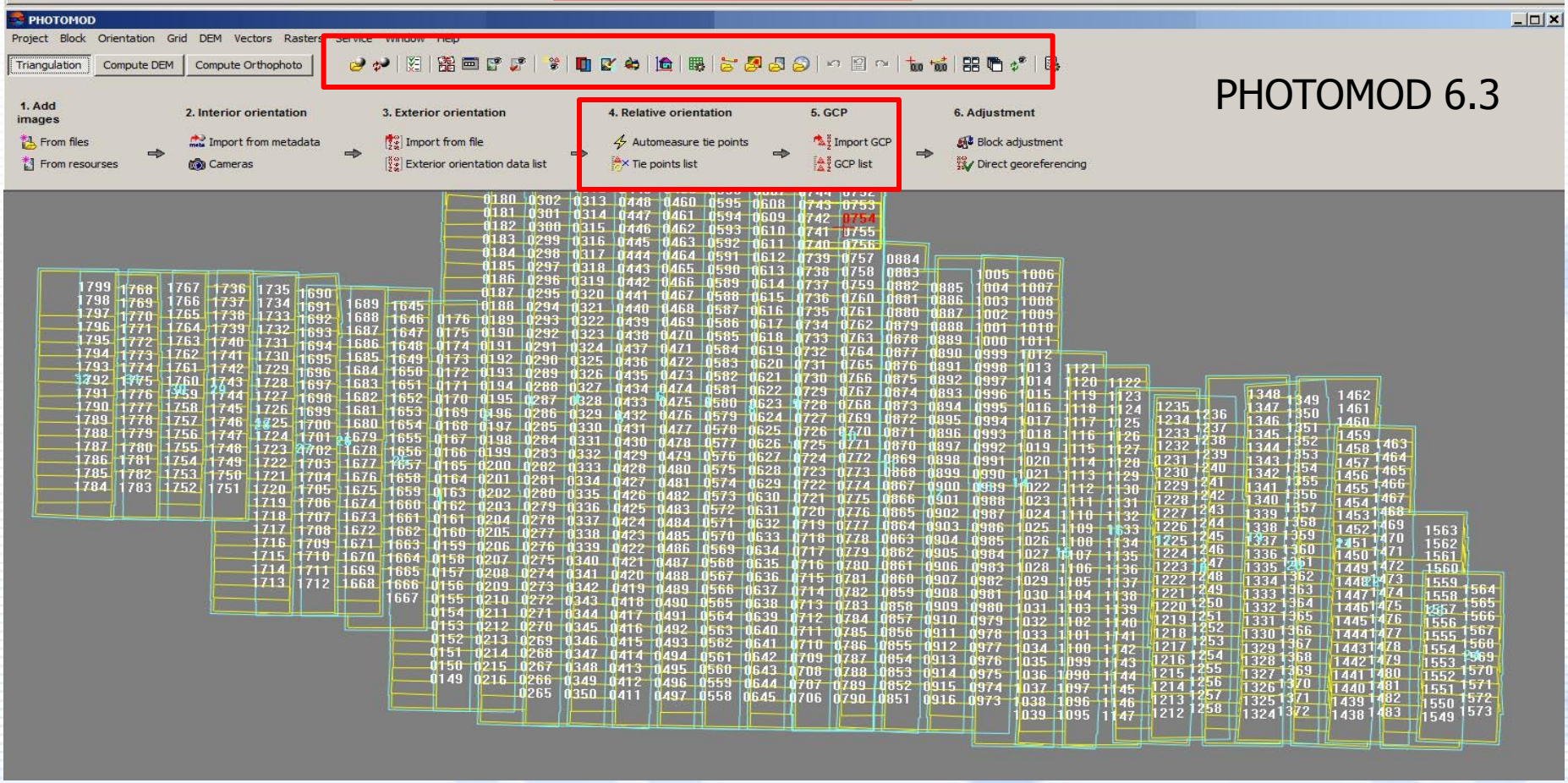
PHOTOMOD UAS. Low quality of block layout



PHOTOMOD UAS. Interface changes



PHOTOMOD 6.2



PHOTOMOD 6.3

PHOTOMOD UAS. Processing report

Polygon_test_Ptero_SGM_DIMA_test_new_fb - PHOTOMOD

Project Block Orientation Grid Terrain Vectors Rasters Edit Service Window Help

Report

Correlator configuration	----
Calibrate camera	On
Make an adjustment	On
Apriori accuracy of measurements on images, pix	1.000
Assign the camera after calibration	On
Delete temporary data	On
Adjustment parameters	
Initial approximation method:	By block scheme
Adjustment method:	Bundle adjustment
Systematic error compensation	For block
Calibration type:	Physical
Time of processing	----

Processing results

Results of camera calibration

	Initial data	Optimized data
Camera	NikonD800[dist_avg][tripl_avg] [selfcal] 2.x-cam	NikonD800[dist_avg][tripl_avg] [selfcal] 2.x-cam
Focal length, mm	52.136	52.136
Principal point (X/Y), mm	-0.048 / 0.148	-0.048 / 0.148
Pixel size, mm	0.005	0.005
Type of distortion	Formula	Formula
Point of symmetry (X/Y), mm	-0.048 / 0.148	-0.048 / 0.148

Ground control and check points accuracy

Ground control point residuals

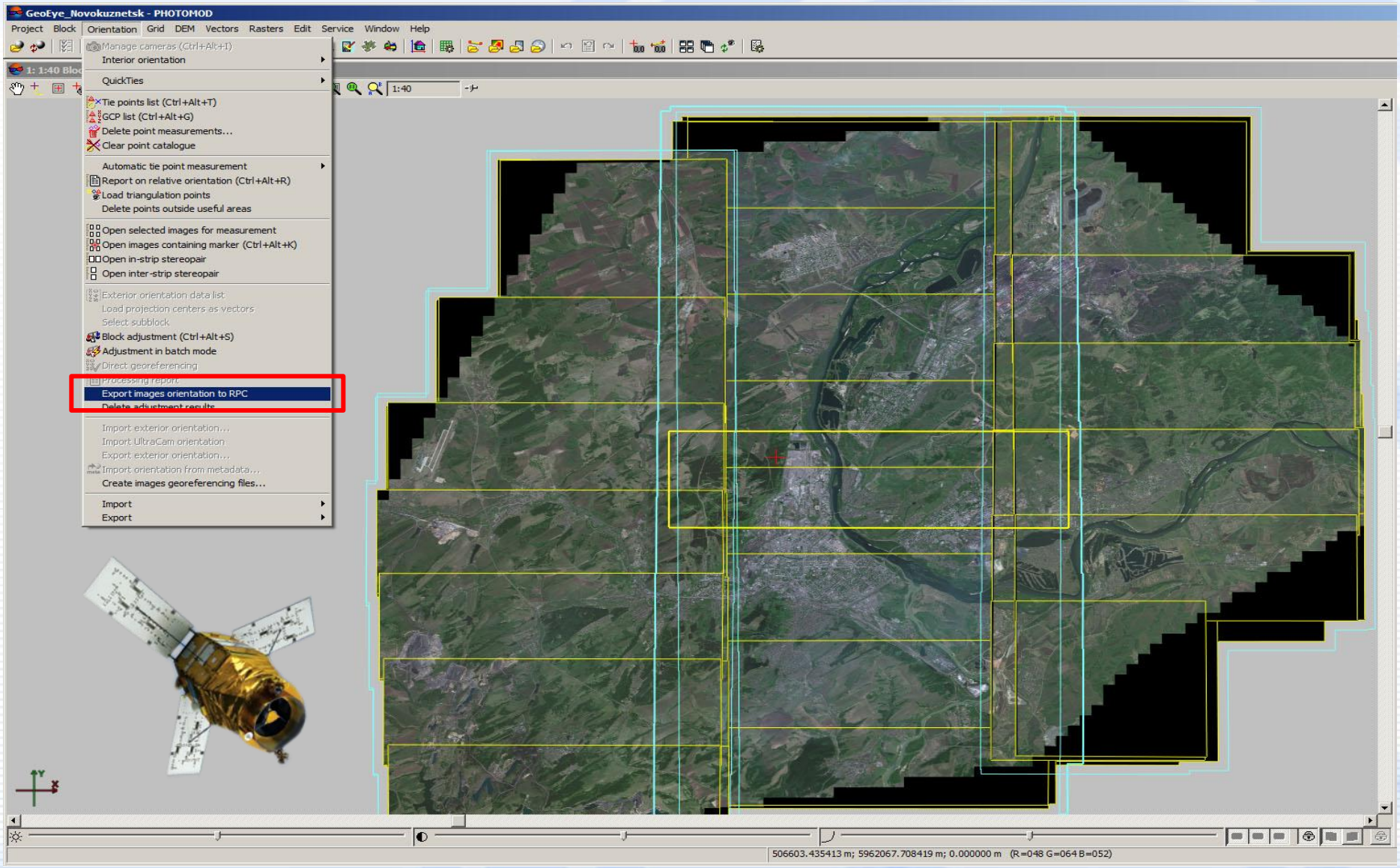
N	Apriori X/Y/Z accuracy	Ex, метр	Ey, метр	Ez, метр	Exy, метр
OP05	0.020000/0.020000/0.050000	-0.073102	0.076732	-0.109174	0.105980
OP13	0.020000/0.020000/0.050000	-0.000389	-0.111450	-0.047207	0.111451
OP14	0.020000/0.020000/0.050000	0.011480	-0.054531	0.000151	0.055726
OP47	0.020000/0.020000/0.050000	-0.005572	-0.035510	-0.048554	0.035945

Close

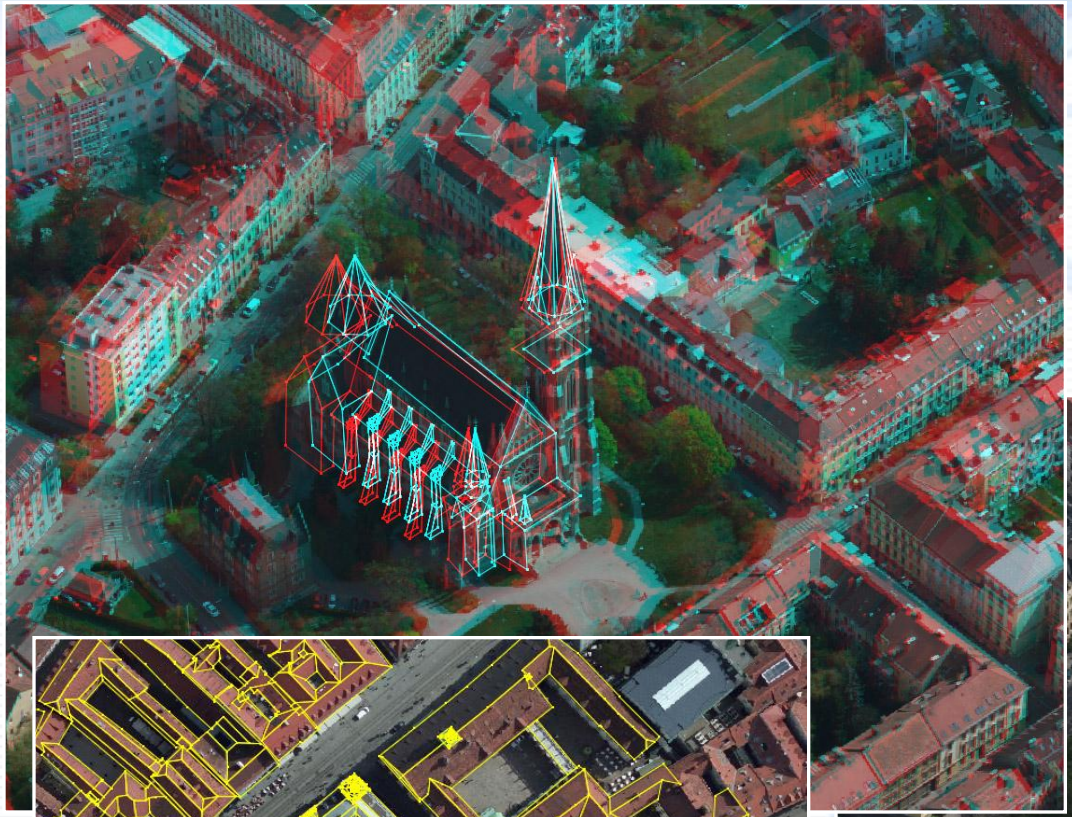
349 м; 6077759.525645 м; 0.000000 м (R=192 G=192 B=192)

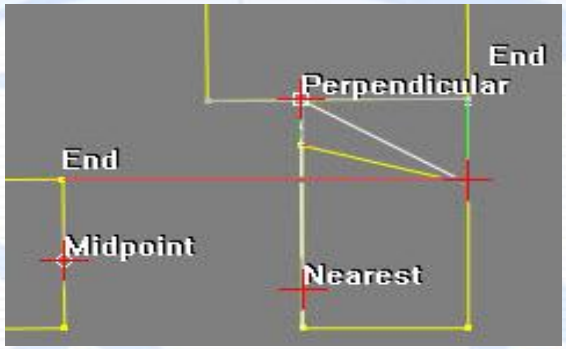
WGS 84 / UTM 37N

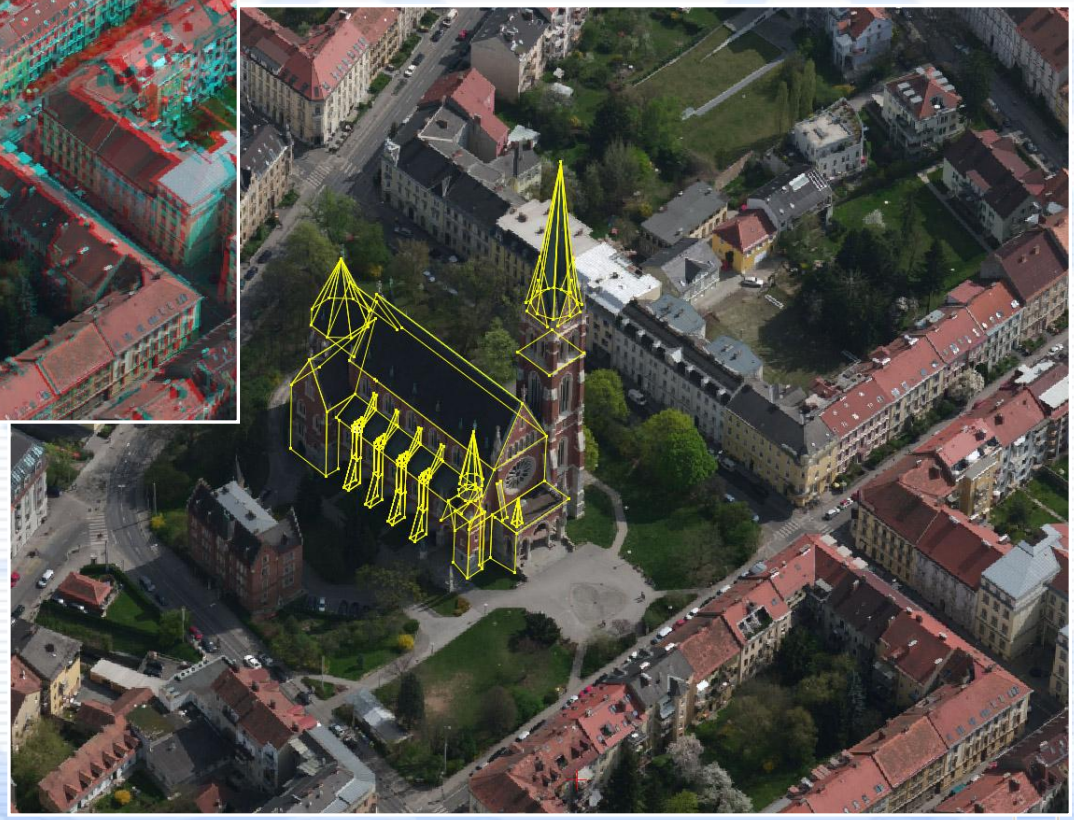
Export of RPC coefficients



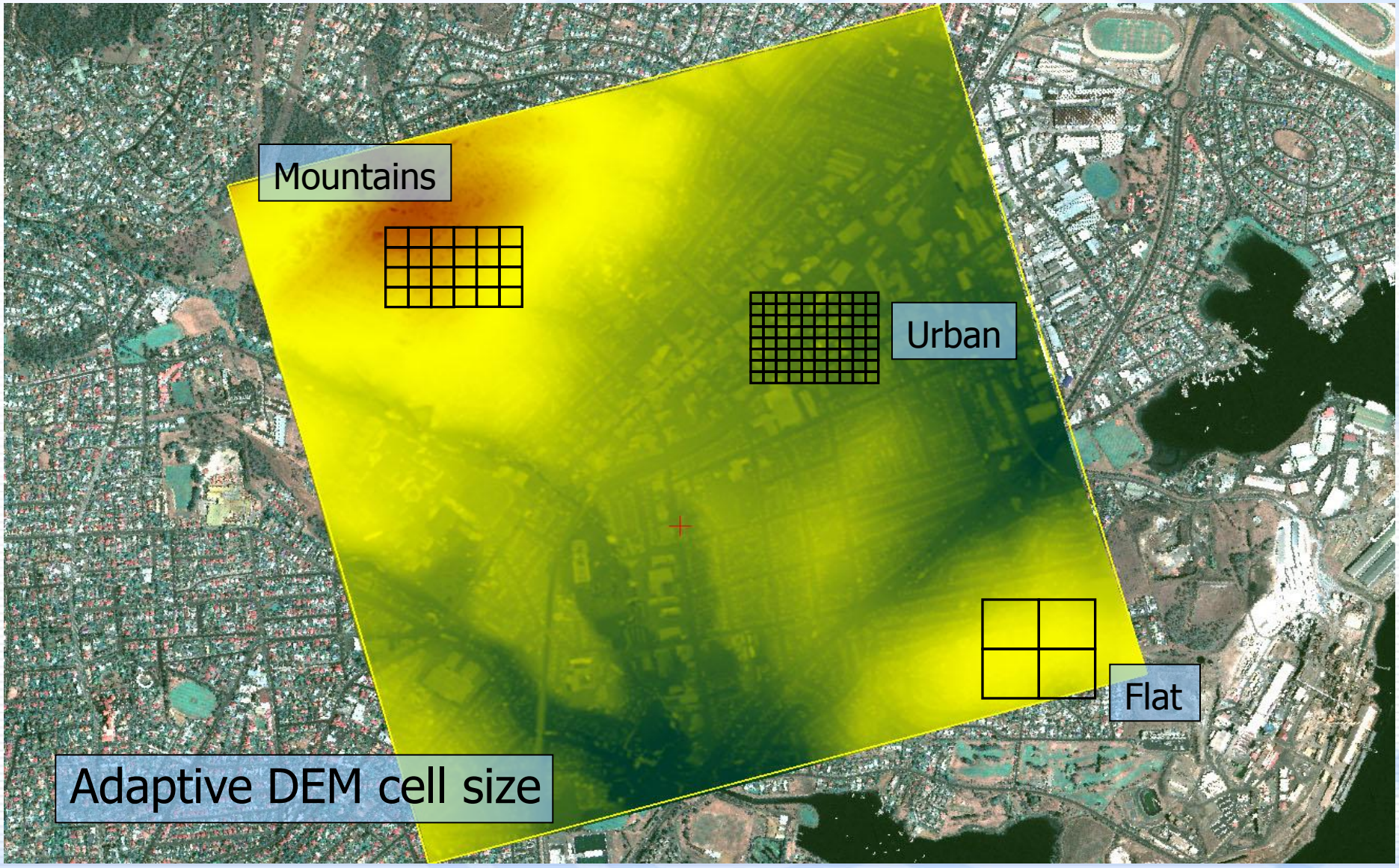
New snapping and 3D-vectorization tools







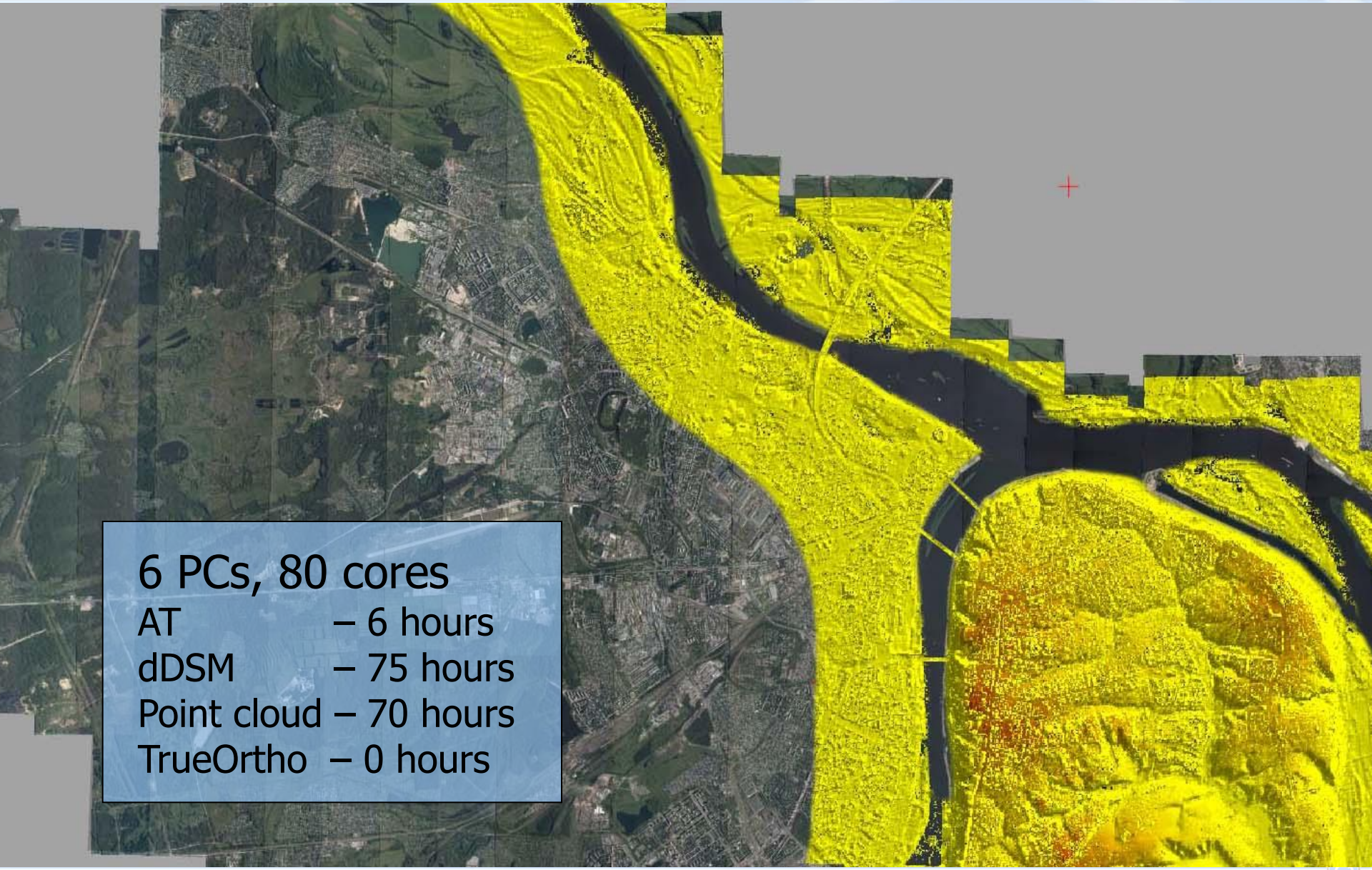
Accelerated orthorectification for urban and mountain area



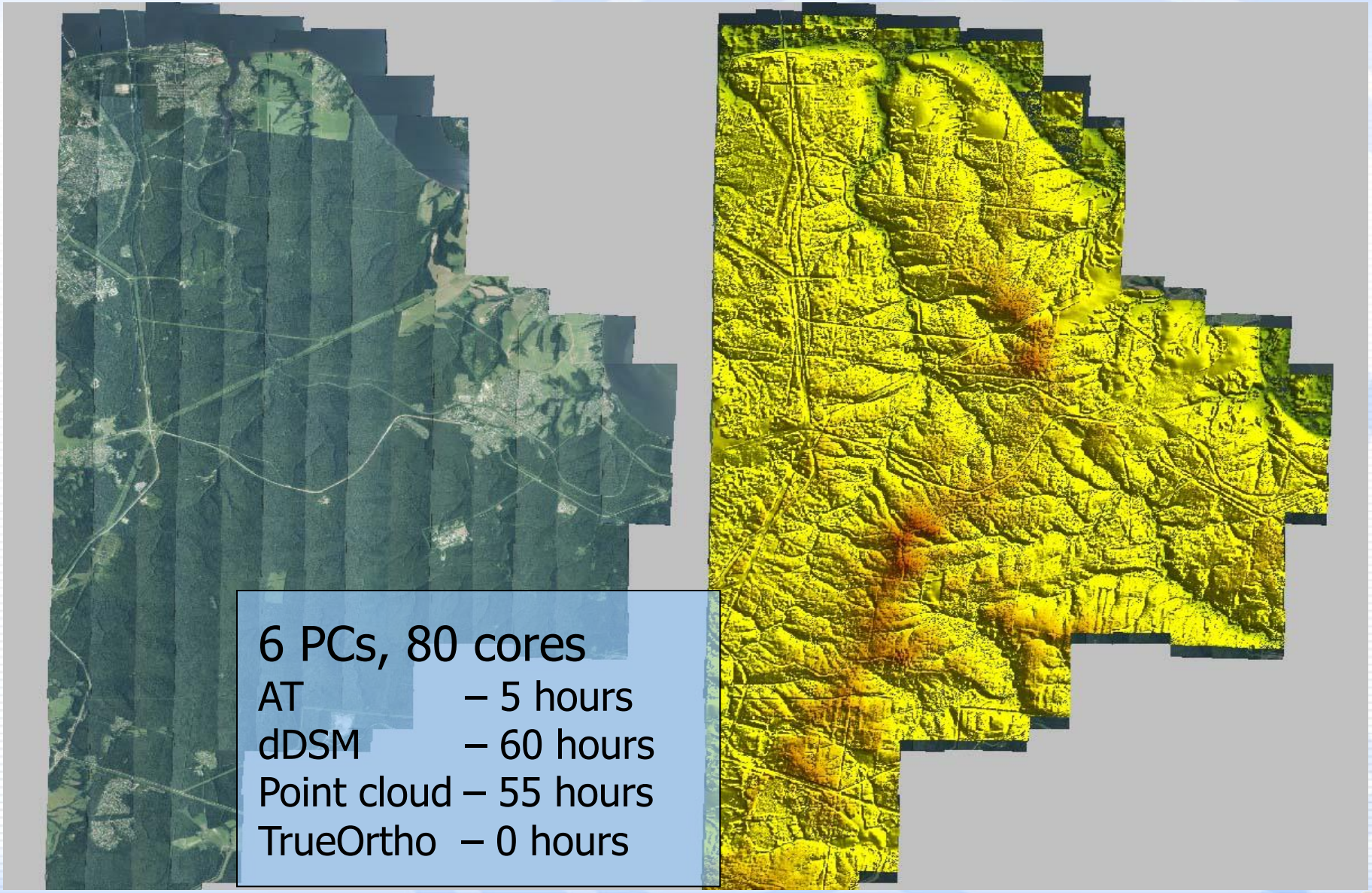
Productivity. AT + dDSM(SGM) + Point cloud + True Ortho

Xeon(R) X5650
2.67 GHz
32 Gb, RAM
10 Gbit, Net

UltraCam Eagle, 922 images (13080 x 20010 pix), H=2000m, GSD=0.1m



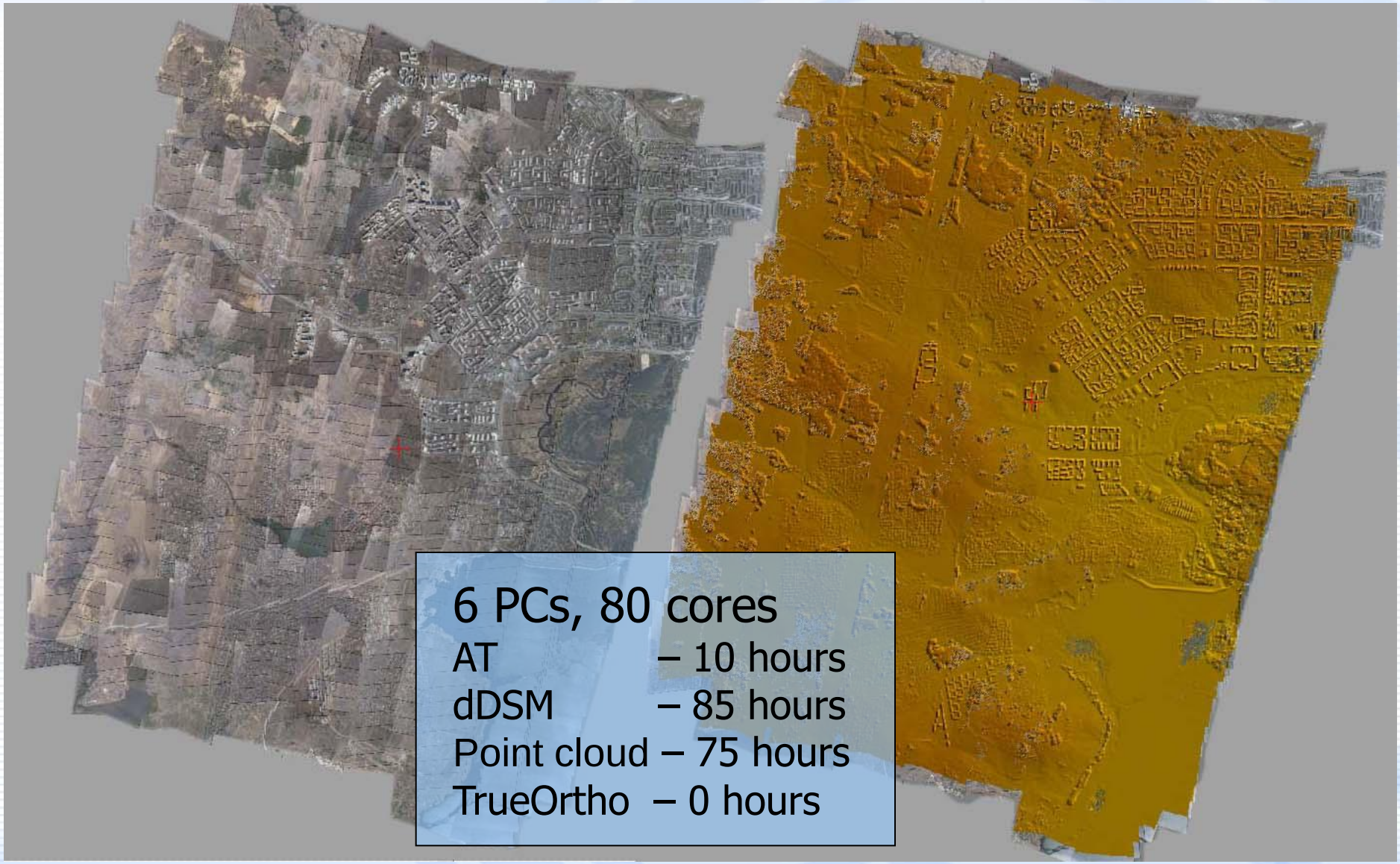
UltraCam Eagle, 714 images (13080 x 20010 pix), H=2000m, GSD=0.1m



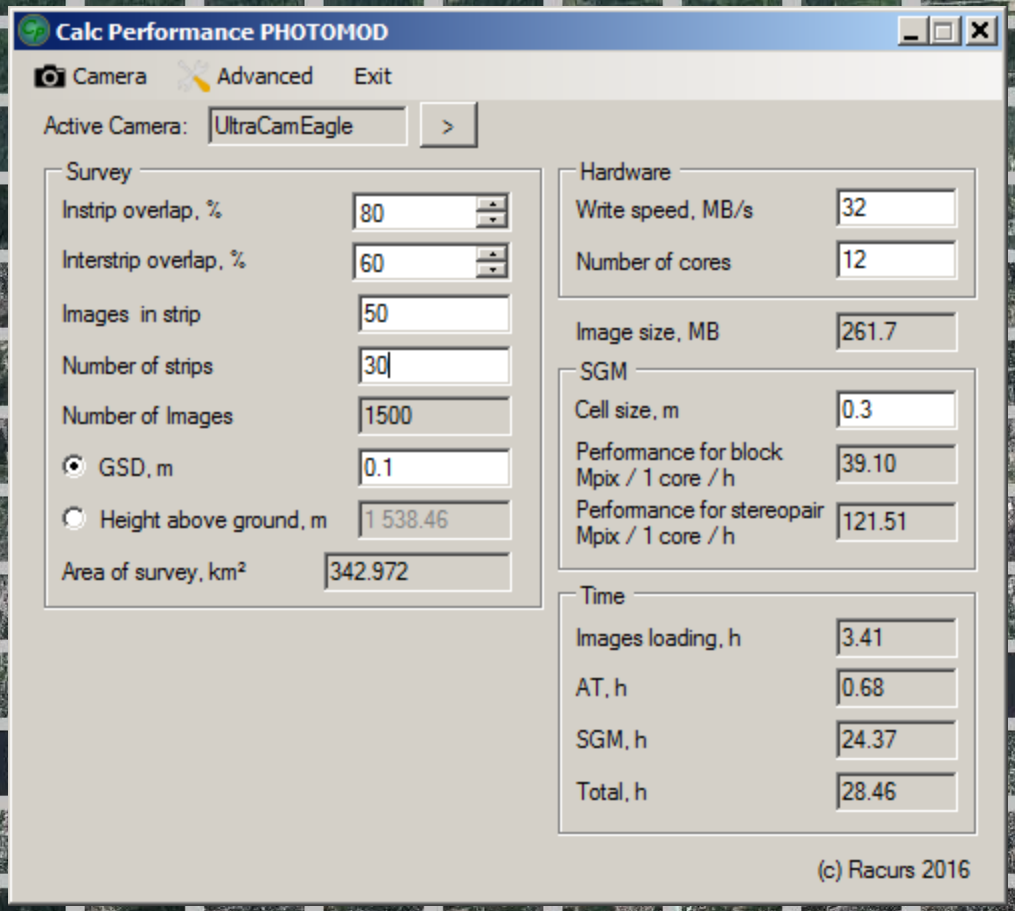
6 PCs, 80 cores

AT	– 5 hours
dDSM	– 60 hours
Point cloud	– 55 hours
TrueOrtho	– 0 hours

RCD 30 Oblique, 2630 images (10336 x 7788 pix), H=1200m, GSD=0.1m



Utility for productivity estimation



Welcome to the master-class (Wednesday)

Thank you for attention !