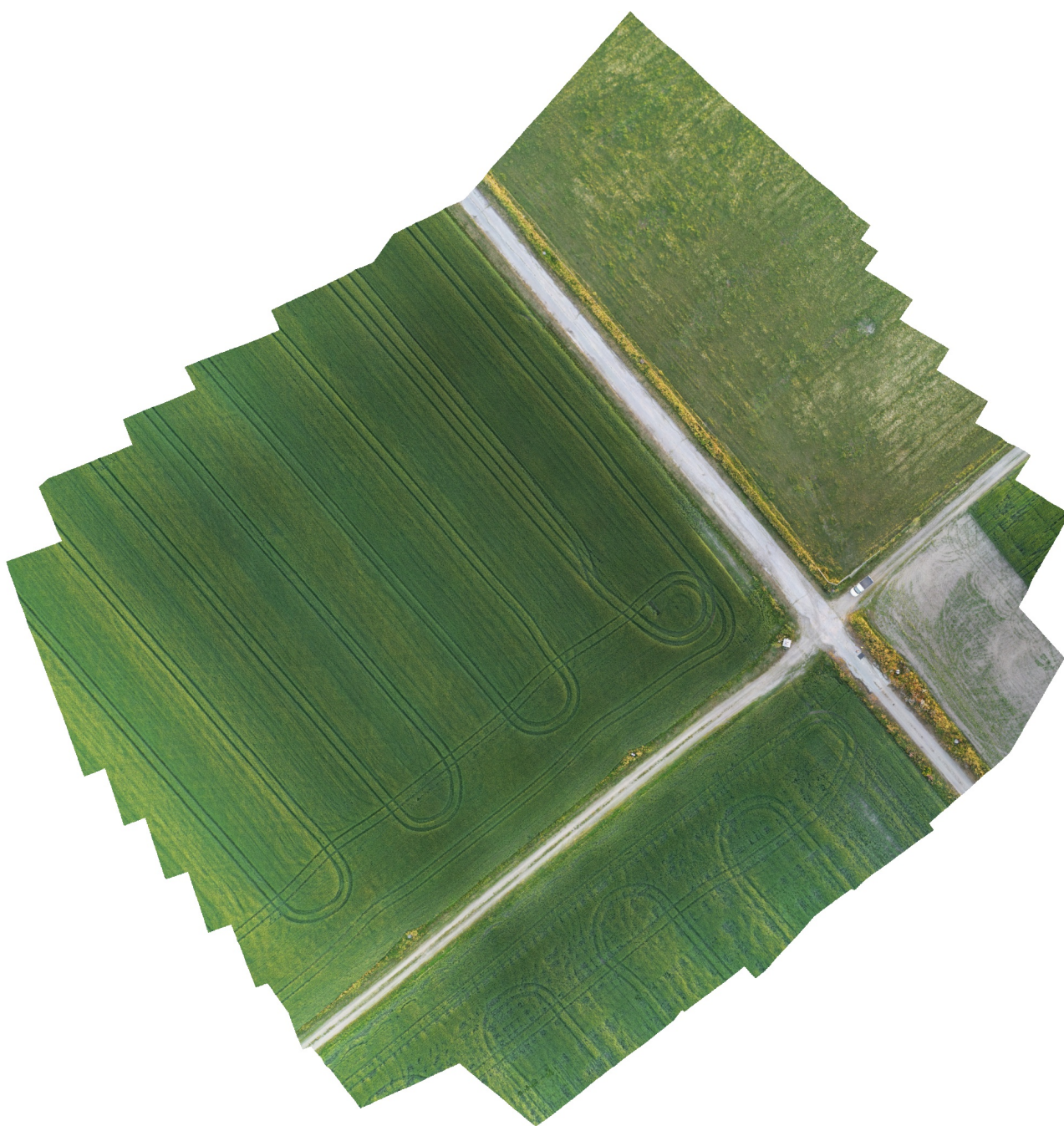


Agisoft Metashape

Processing Report
08 December 2022



Survey Data

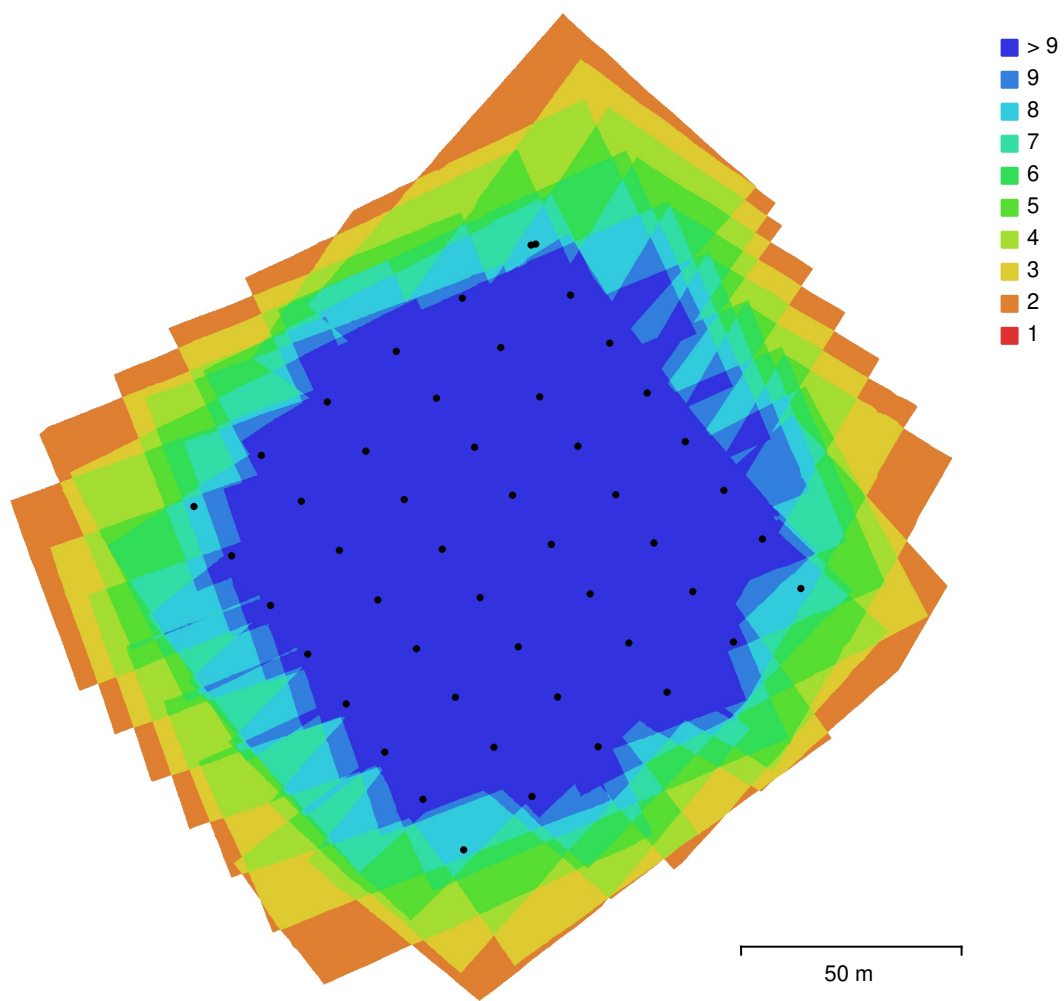


Fig. 1. Camera locations and image overlap.

Number of images:	49	Camera stations:	49
Flying altitude:	57 m	Tie points:	64,397
Ground resolution:	1.61 cm/pix	Projections:	162,401
Coverage area:	0.0282 km ²	Reprojection error:	0.448 pix

Camera Model	Resolution	Focal Length	Pixel Size	Precalibrated
FC6310 (8.8mm)	5472 x 3648	8.8 mm	2.41 x 2.41 μm	No

Table 1. Cameras.

Camera Calibration

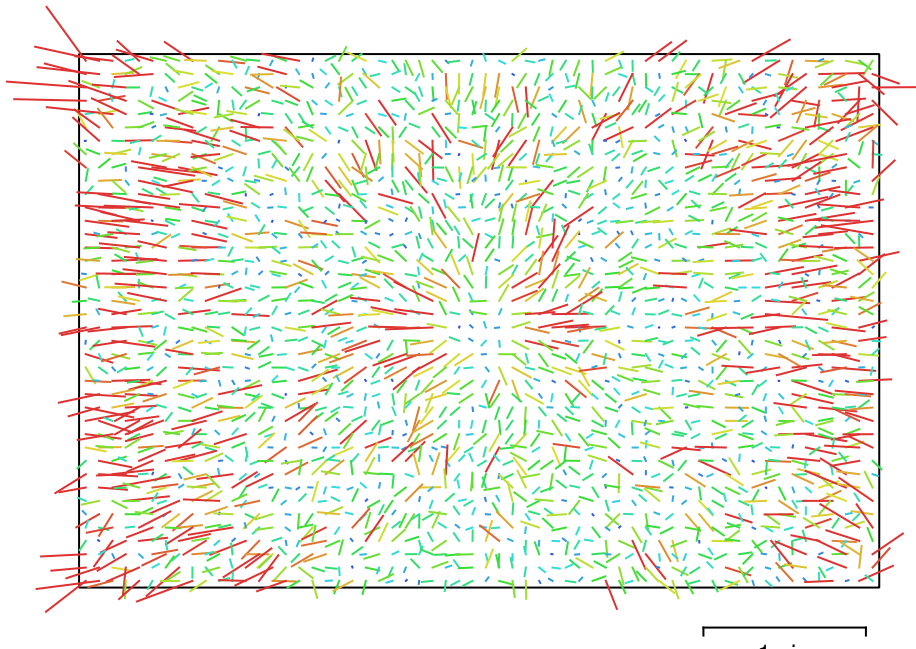


Fig. 2. Image residuals for FC6310 (8.8mm).

FC6310 (8.8mm)

49 images

Type
Frame

Resolution
5472 x 3648

Focal Length
8.8 mm

Pixel Size
2.41 x 2.41 μm

	Value	Error	F	Cx	Cy	K1	K2	K3	P1	P2
F	3052.38	89	1.00	0.59	0.95	0.56	-0.96	0.99	0.98	0.96
Cx	-7.12268	0.91		1.00	0.56	0.27	-0.55	0.57	0.58	0.56
Cy	10.3669	1.5			1.00	0.53	-0.91	0.94	0.92	0.92
K1	0.00335748	0.00033				1.00	-0.59	0.59	0.62	0.68
K2	-0.0028336	0.00034					1.00	-0.99	-0.94	-0.93
K3	0.00200401	0.00036						1.00	0.97	0.95
P1	0.000680982	2.1e-05							1.00	0.95
P2	0.000469288	1.5e-05								1.00

Table 2. Calibration coefficients and correlation matrix.

Camera Locations

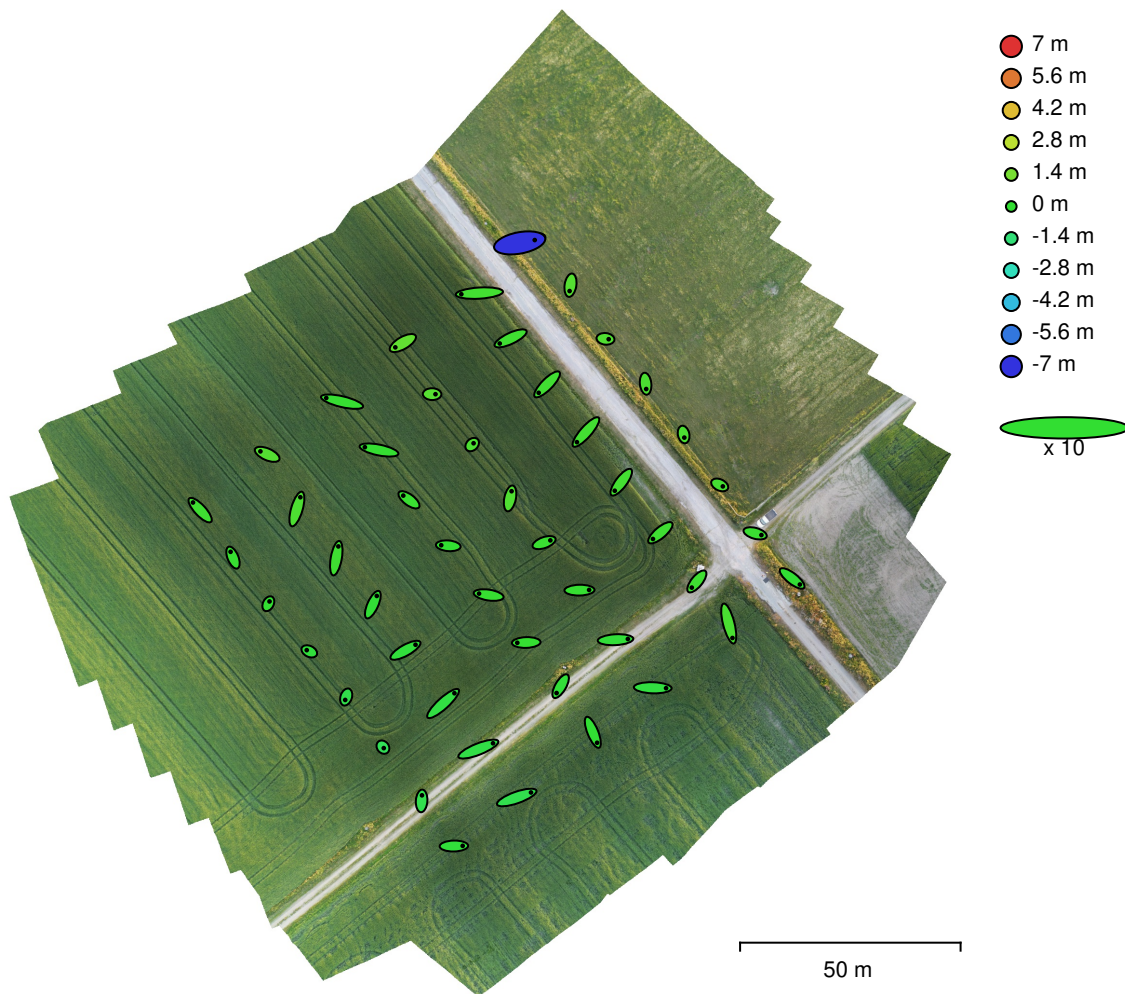


Fig. 3. Camera locations and error estimates.

Z error is represented by ellipse color. X,Y errors are represented by ellipse shape.

Estimated camera locations are marked with a black dot.

X error (m)	Y error (m)	Z error (m)	XY error (m)	Total error (m)
0.369048	0.263602	1.07623	0.453522	1.16789

Table 3. Average camera location error.

X - Longitude, Y - Latitude, Z - Altitude.

Digital Elevation Model

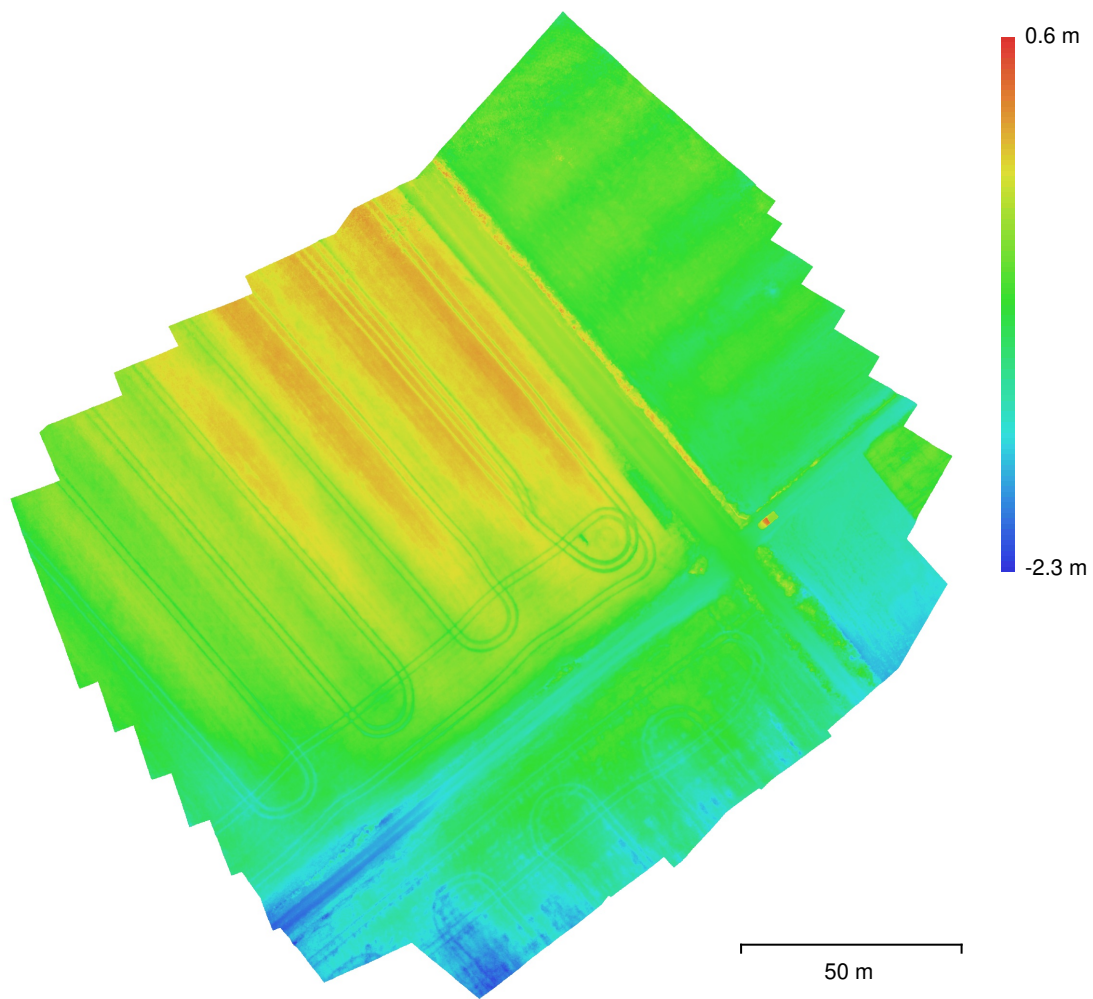


Fig. 4. Reconstructed digital elevation model.

Resolution: 3.21 cm/pix
Point density: 967 points/m²

Processing Parameters

General

Cameras	49
Aligned cameras	49
Coordinate system	WGS 84 (EPSG::4326)
Rotation angles	Yaw, Pitch, Roll

Point Cloud

Points	64,397 of 66,097
RMS reprojection error	0.163111 (0.447586 pix)
Max reprojection error	0.555308 (9.94738 pix)
Mean key point size	2.82589 pix
Point colors	3 bands, uint8
Key points	No
Average tie point multiplicity	2.555

Alignment parameters

Accuracy	High
Generic preselection	Yes
Reference preselection	Source
Key point limit	40,000
Tie point limit	4,000
Guided image matching	No
Adaptive camera model fitting	No
Matching time	24 seconds
Matching memory usage	1.13 GB
Alignment time	1 minutes 30 seconds
Alignment memory usage	32.92 MB

Optimization parameters

Parameters	f, cx, cy, k1-k3, p1, p2
Adaptive camera model fitting	No
Optimization time	5 seconds
Software version	1.6.2.10247

Depth Maps

Count	49
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Depth maps generation parameters

Quality	High
Filtering mode	Aggressive
Processing time	2 minutes 39 seconds
Software version	1.6.2.10247

Dense Point Cloud

Points	17,118,203
Point colors	3 bands, uint8

Depth maps generation parameters

Quality	High
Filtering mode	Aggressive
Processing time	2 minutes 39 seconds

Dense cloud generation parameters

Processing time	2 minutes 55 seconds
Software version	1.6.2.10247

DEM

Size	8,683 x 8,637
Coordinate system	WGS 84 (EPSG::4326)

Reconstruction parameters

Source data	Dense cloud
Interpolation	Enabled
Processing time	20 seconds
Software version	1.6.2.10247
Orthomosaic	
Size	13,293 x 13,922
Coordinate system	WGS 84 (EPSG::4326)
Colors	3 bands, uint8
Reconstruction parameters	
Blending mode	Mosaic
Surface	DEM
Enable hole filling	Yes
Processing time	1 minutes 22 seconds
Software version	1.6.2.10247
System	
Software name	Agisoft Metashape Professional
Software version	1.6.2 build 10247
OS	Linux 64 bit
RAM	1007.60 GB
CPU	Intel(R) Xeon(R) CPU E5-2690 v4 @ 2.60GHz
GPU(s)	Tesla P100-PCIE-16GB