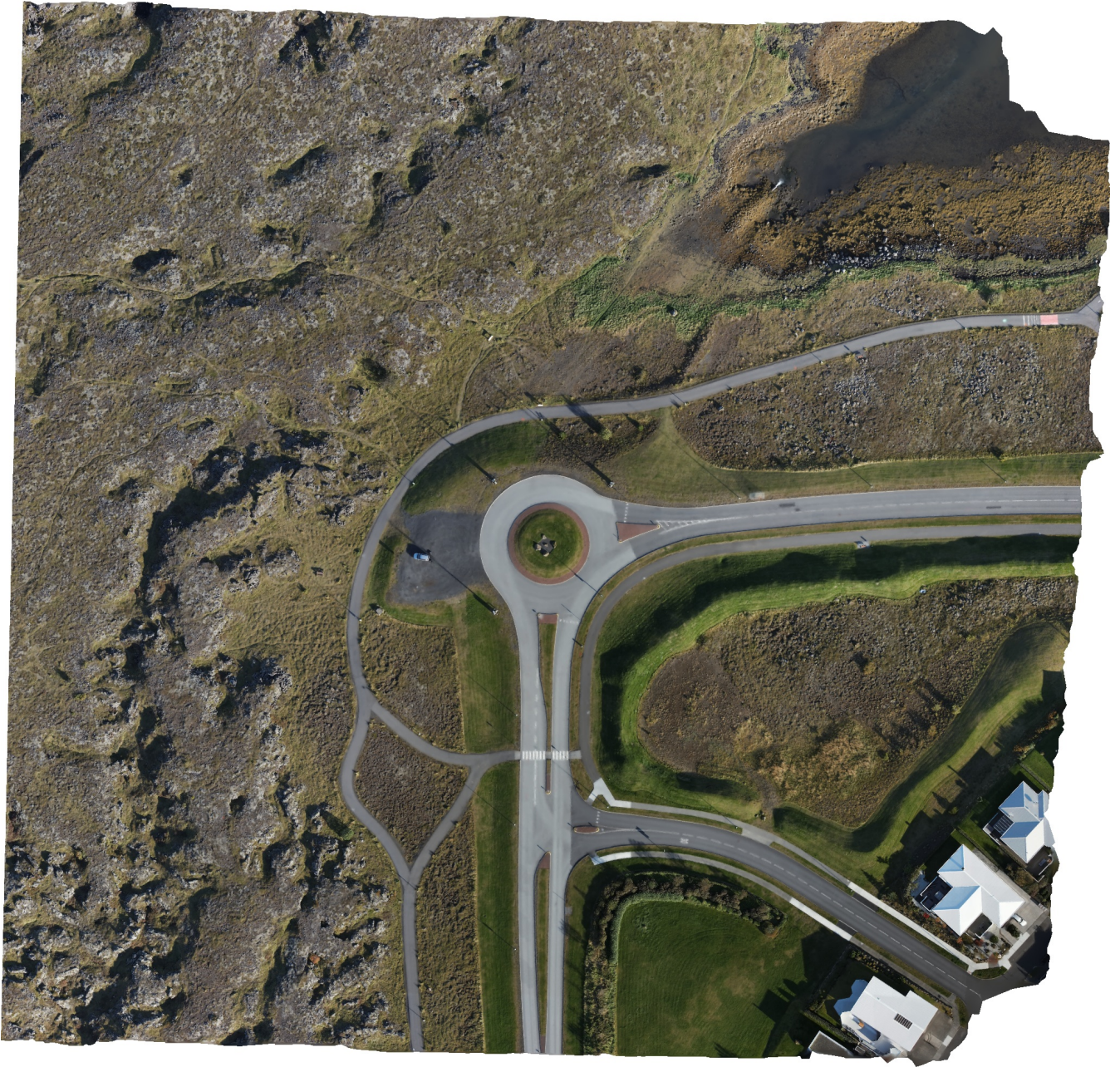


Agisoft Metashape

Processing Report

13 November 2025



Survey Data

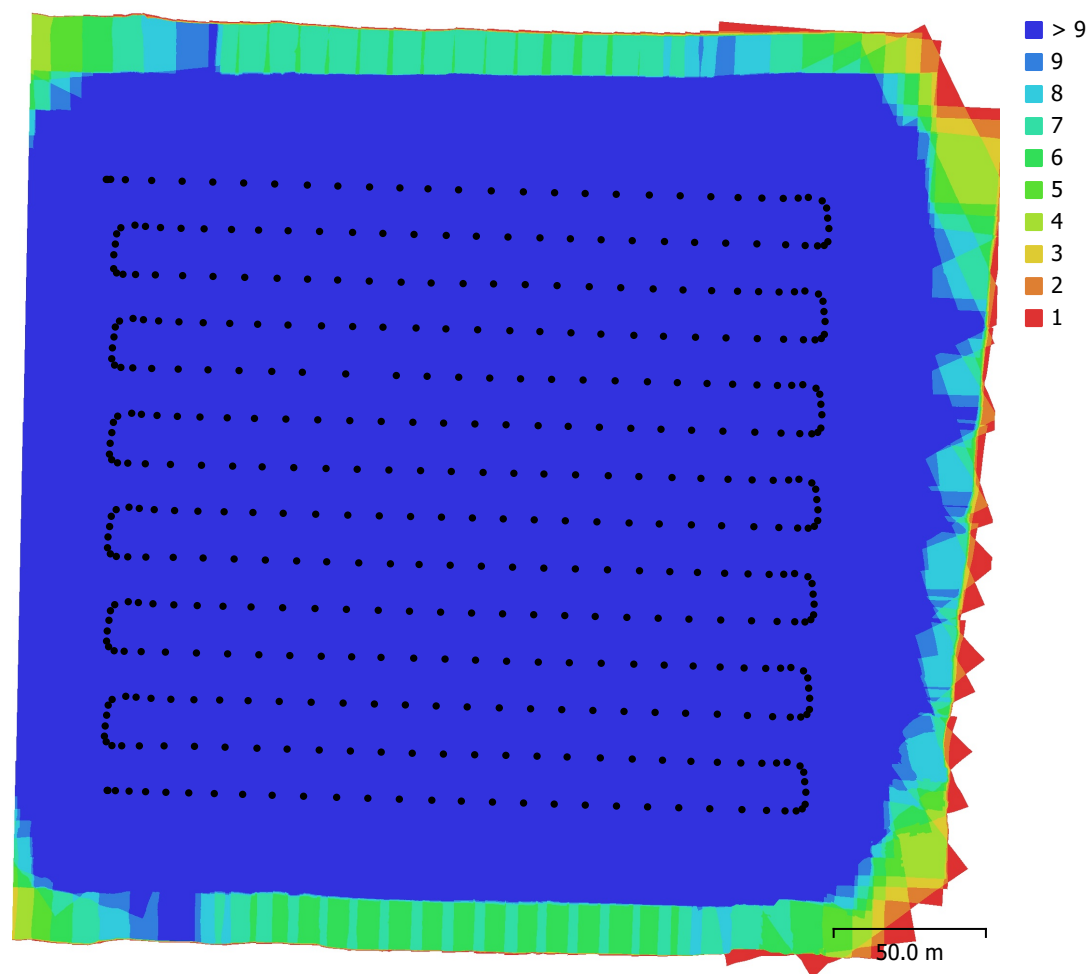


Fig. 1. Camera locations and image overlap.

Number of images:	445	Camera stations:	445
Flying altitude:	102 m	Tie points:	1,891,807
Ground resolution:	1.22 cm/pix	Projections:	12,799,067
Coverage area:	0.0947 km²	Reprojection error:	0.467 pix

Camera Model	Resolution	Focal Length	Pixel Size	Precalibrated
ZenmuseP1 (35mm)	8192 x 5460	35 mm	unknown	No

Table 1. Cameras.

Camera Calibration

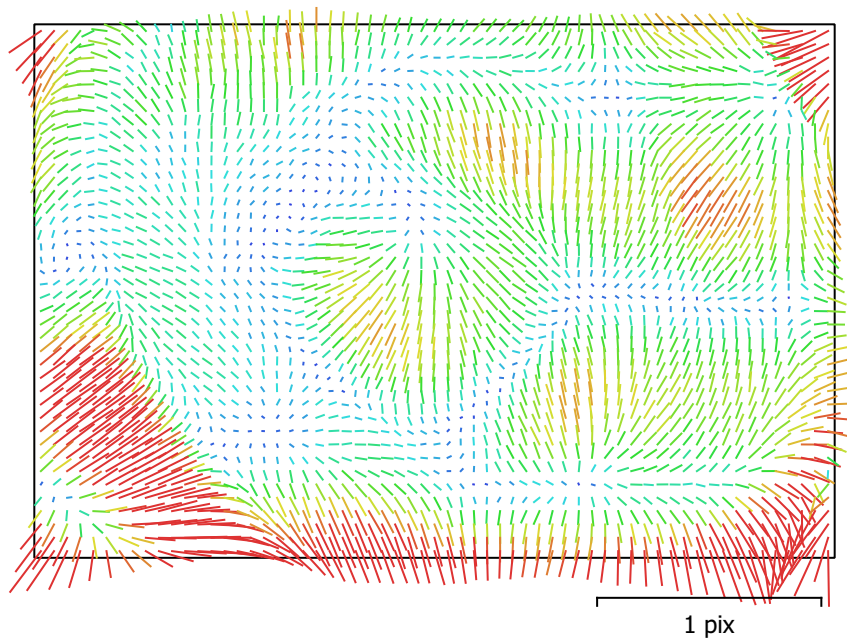


Fig. 2. Image residuals for ZenmuseP1 (35mm).

ZenmuseP1 (35mm)

445 images

Type	Resolution	Focal Length	Pixel Size
Frame	8192 x 5460	35 mm	unknown

	Value	Error	F	Cx	Cy	K1	K2	K3	P1	P2
F	8196.12	0.056	1.00	-0.00	0.25	0.22	0.05	-0.12	-0.04	0.27
Cx	-31.0208	0.0083		1.00	0.03	-0.01	0.01	-0.01	0.26	-0.00
Cy	48.8052	0.0079			1.00	0.07	-0.00	-0.01	0.03	0.11
K1	-0.0496058	5e-06				1.00	-0.92	0.84	-0.03	0.09
K2	0.0302733	2.9e-05					1.00	-0.98	0.02	0.00
K3	-0.108987	5.3e-05						1.00	-0.02	-0.02
P1	-0.00086036	1.8e-07							1.00	-0.02
P2	0.00234201	1.4e-07								1.00

Table 2. Calibration coefficients and correlation matrix.

Camera Locations

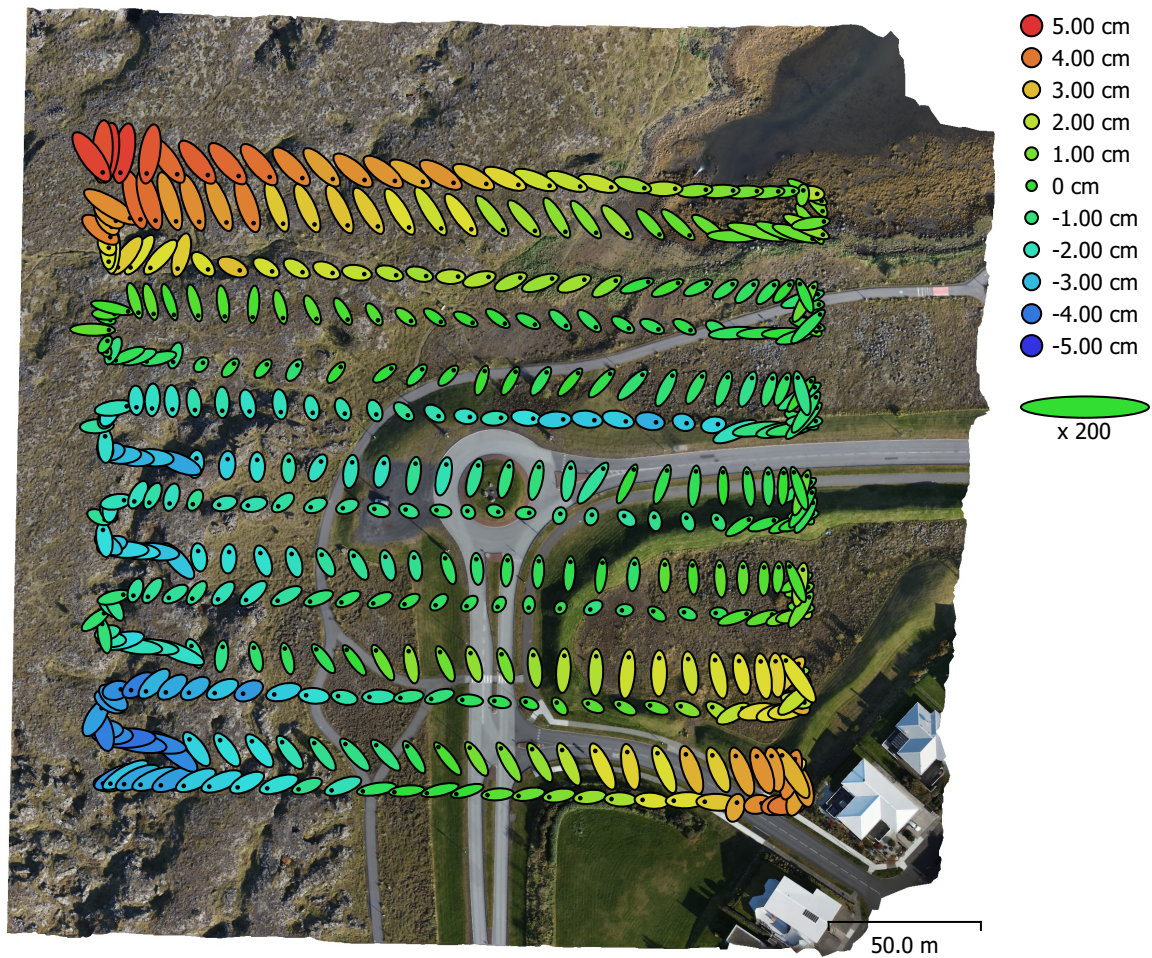


Fig. 3. Camera locations and error estimates.

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 (cm)	Y error (cm)	Z error (cm)	XY error (cm)	Total error (cm)
2.72196	2.84486	2.03512	3.93729	4.43215

Table 3. Average camera location error.

X - Easting, Y - Northing, Z - Altitude.

Ground Control Points

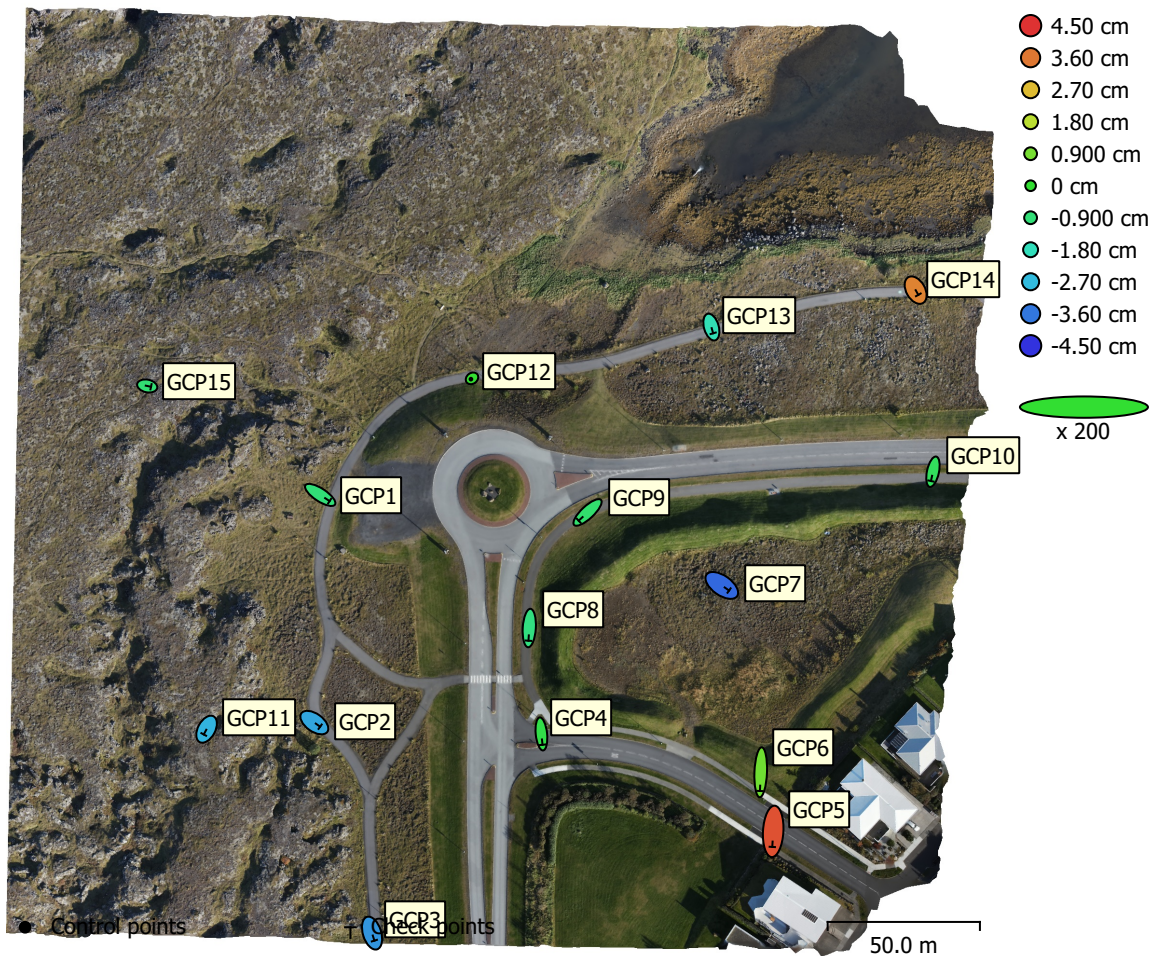


Fig. 4. GCP locations and error estimates.

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

Estimated GCP locations are marked with a dot or crossing.

Count	X error (cm)	Y error (cm)	Z error (cm)	XY error (cm)	Total (cm)
1	0.355652	0.260021	0.0176665	0.440567	0.440921

Table 4. Control points RMSE.

X - Easting, Y - Northing, Z - Altitude.

Count	X error (cm)	Y error (cm)	Z error (cm)	XY error (cm)	Total (cm)
14	1.51898	3.10388	2.34911	3.45563	4.17848

Table 5. Check points RMSE.

X - Easting, Y - Northing, Z - Altitude.

Label	X error (cm)	Y error (cm)	Z error (cm)	Total (cm)	Image (pix)
GCP12	-0.355652	-0.260021	0.0176665	0.440921	0.863 (47)
Total	0.355652	0.260021	0.0176665	0.440921	0.863

Table 6. Control points.
X - Easting, Y - Northing, Z - Altitude.

Label	X error (cm)	Y error (cm)	Z error (cm)	Total (cm)	Image (pix)
GCP15	1.25036	-0.260519	-0.845923	1.53195	1.082 (54)
GCP14	0.881405	-1.55103	3.43638	3.87185	1.139 (13)
GCP13	0.592831	-2.03405	-1.70325	2.71843	0.968 (73)
GCP11	-0.932664	-1.7242	-2.80869	3.42512	0.938 (46)
GCP10	-0.658098	-3.04722	-0.555558	3.16659	0.954 (9)
GCP9	-2.91594	-2.71289	-0.766743	4.0559	0.561 (46)
GCP8	-0.26159	-4.16489	-1.02276	4.2966	0.586 (38)
GCP7	2.3884	-1.67733	-3.80049	4.79183	0.694 (61)
GCP6	-0.247283	-6.14774	0.790527	6.20329	0.743 (33)
GCP5	-0.295744	-5.09934	4.10326	6.5519	0.480 (23)
GCP4	0.36186	-3.55585	-0.298963	3.5867	0.772 (32)
GCP3	0.766617	-2.469	-3.20742	4.11961	0.473 (7)
GCP2	1.89994	-1.35728	-2.98331	3.78841	0.794 (32)
GCP1	3.09111	-2.0268	-0.904189	3.80531	0.756 (46)
Total	1.51898	3.10388	2.34911	4.17848	0.820

Table 7. Check points.
X - Easting, Y - Northing, Z - Altitude.

Digital Elevation Model

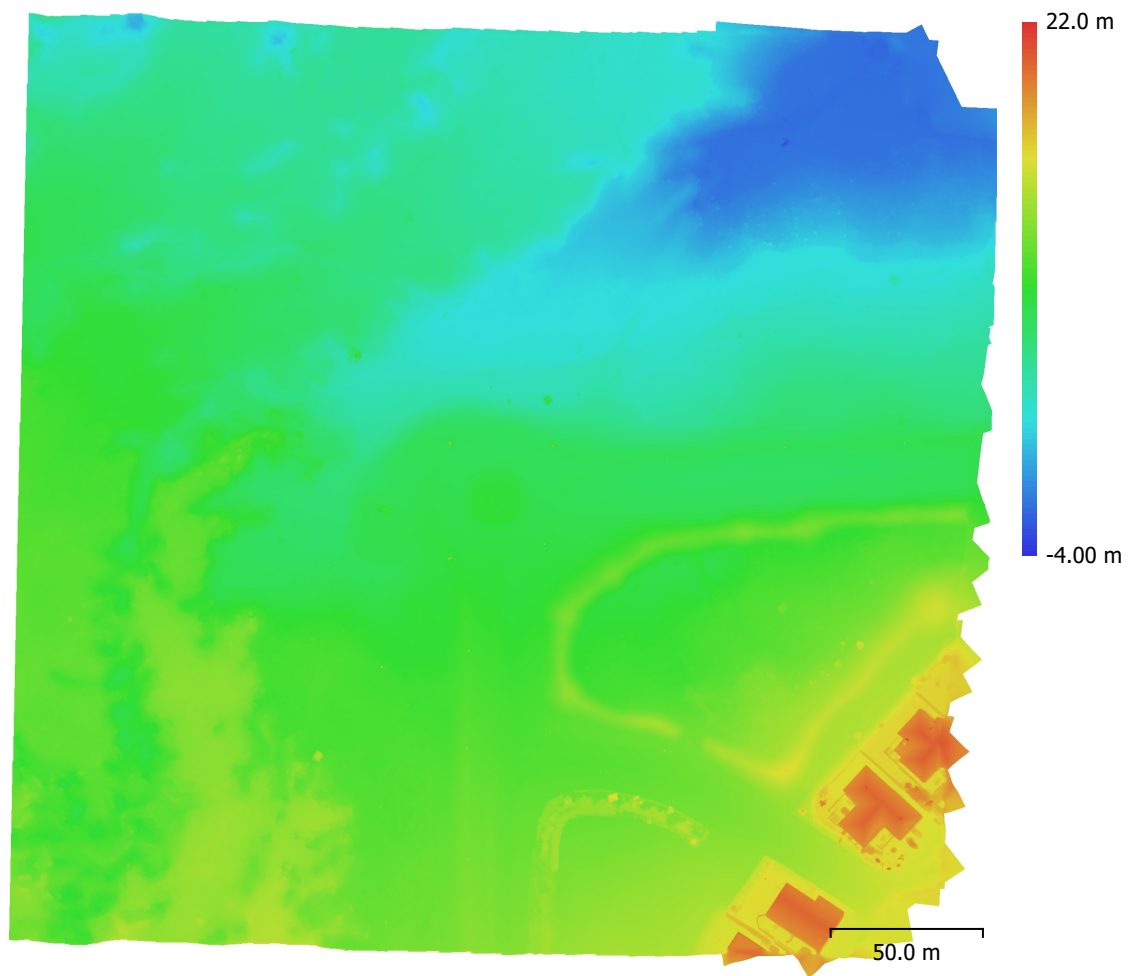


Fig. 5. Reconstructed digital elevation model.

Resolution: 8.47 cm/pix
Point density: 139 points/m²

Processing Parameters

General

Images	445
Aligned images	445
Markers	15
Coordinate system	ISN2016 + ISH2004
Rotation angles	Yaw, Pitch, Roll

Tie Points

Points	1,891,807 of 2,212,934
RMS reprojection error	0.142721 (0.467308 pix)
Max reprojection error	0.482641 (46.6912 pix)
Mean key point size	2.91527 pix
Point colors	3 bands, uint8
Key points	No
Average tie point multiplicity	7.8707

Alignment parameters

Accuracy	High
Generic preselection	No
Reference preselection	Source
Key point limit	60,000
Key point limit per Mpx	1,000
Tie point limit	0
Exclude stationary tie points	Yes
Guided image matching	No
Adaptive camera model fitting	No
Matching time	18 minutes 53 seconds
Matching memory usage	2.17 GB
Alignment time	15 minutes 7 seconds
Alignment memory usage	5.23 GB

Optimization parameters

Parameters	f, cx, cy, k1-k3, p1, p2
Adaptive camera model fitting	No
Exclude corners	No
Optimization time	27 seconds
Date created	2025:11:12 22:38:36
Software version	2.3.0.21427
File size	979.82 MB

Point Cloud

Points	711,696,298
Coordinate precision	3.06 mm

Point attributes

Color	3 bands, uint8
Normal	
Confidence	1 - 68

Point classes

Created (never classified)	711,696,298
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Depth maps generation parameters

Quality	Ultra High
Filtering mode	Mild
Max neighbors	16
Processing time	2 hours 13 minutes

Memory usage	45.69 GB
Point cloud generation parameters	
Source data	Depth maps
Processing time	7 hours 54 minutes
Memory usage	90.50 GB
Date created	2025:11:12 01:01:33
Software version	2.3.0.21427
File size	10.43 GB
Model	
Faces	12,706,170
Vertices	6,356,356
Vertex colors	3 bands, uint8
Depth maps generation parameters	
Quality	High
Filtering mode	Mild
Max neighbors	16
Processing time	45 minutes 32 seconds
Memory usage	11.04 GB
Reconstruction parameters	
Surface type	Arbitrary
Source data	Depth maps
Interpolation	Enabled
Strict volumetric masks	No
Processing time	31 minutes 47 seconds
Memory usage	13.97 GB
Date created	2025:11:13 10:04:51
Software version	2.3.0.21427
File size	272.70 MB
DEM	
Size	3,841 x 3,838
Resolution	8.47 cm/pix
Coordinate system	ISN2016 + ISH2004
Reconstruction parameters	
Source data	Model
Interpolation	Enabled
Processing time	11 seconds
Memory usage	942.38 MB
Date created	2025:11:13 10:16:27
Software version	2.3.0.21427
File size	72.10 MB
System	
Software name	Agisoft Metashape Professional
Software version	2.3.0 build 21427
OS	Windows 64 bit
RAM	127.76 GB
CPU	12th Gen Intel(R) Core(TM) i9-12900K
GPU(s)	NVIDIA GeForce RTX 3070 Ti