

# Agisoft Metashape

Processing Report

13 November 2025





# Survey Data

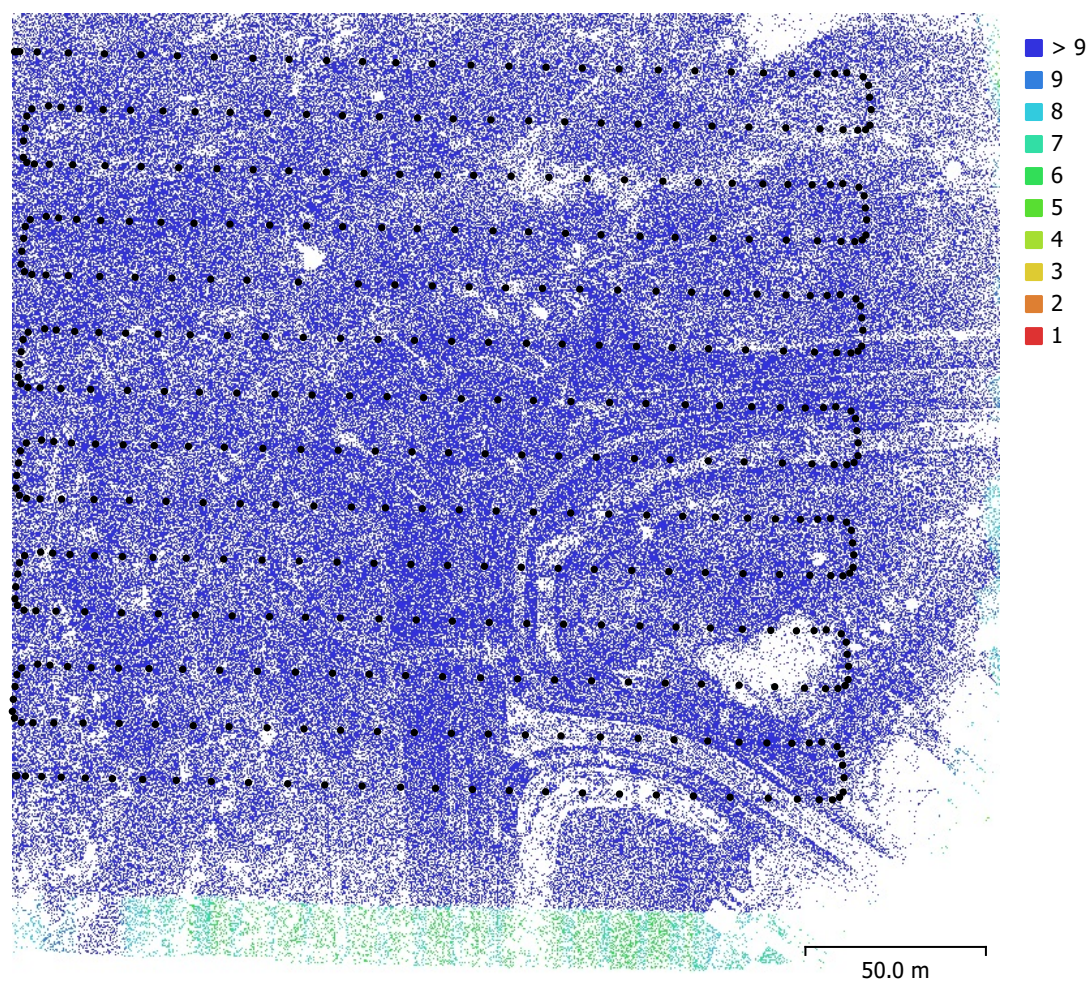


Fig. 1. Camera locations and image overlap.

Number of images:	445	Camera stations:	445
Flying altitude:	102 m	Tie points:	575,056
Ground resolution:	1.24 cm/pix	Projections:	4,354,626
Coverage area:	0.0383 km²	Reprojection error:	0.284 pix

Camera Model	Resolution	Focal Length	Pixel Size	Precalibrated
ZenmuseP1 (35mm)	8192 x 5460	35 mm	4.39 x 4.39 μm	No

Table 1. Cameras.

# Camera Calibration

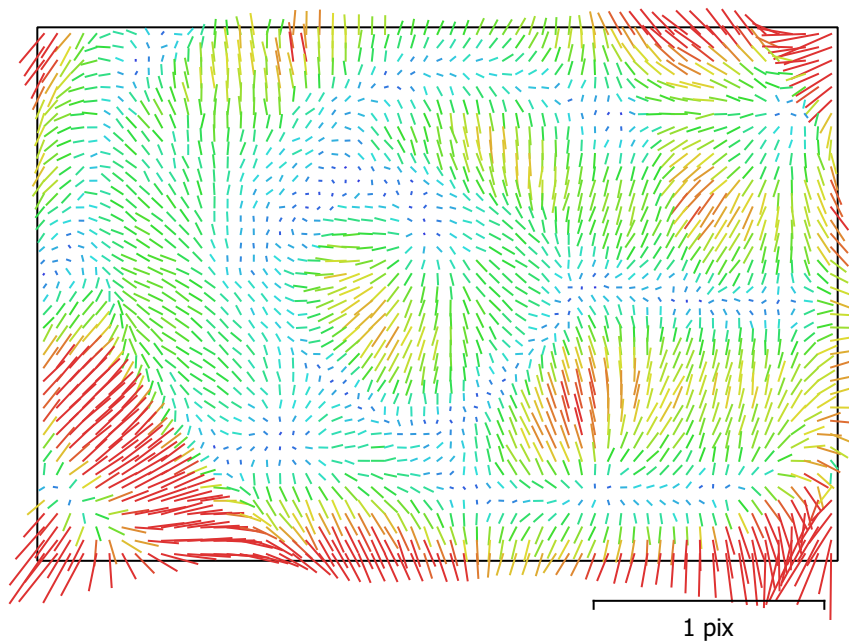


Fig. 2. Image residuals for ZenmuseP1 (35mm).

## ZenmuseP1 (35mm)

445 images

Type	Resolution	Focal Length	Pixel Size
<b>Frame</b>	<b>8192 x 5460</b>	<b>35 mm</b>	<b>4.39 x 4.39 <math>\mu\text{m}</math></b>

	Value	Error	F	Cx	Cy	K1	K2	K3	P1	P2
<b>F</b>	<b>8208.89</b>	0.45	1.00	-0.11	0.77	-0.54	0.16	-0.43	-0.12	0.23
<b>Cx</b>	<b>-30.9494</b>	0.013		1.00	-0.06	0.05	-0.01	0.04	0.14	-0.02
<b>Cy</b>	<b>49.1939</b>	0.02			1.00	-0.41	0.11	-0.32	-0.06	0.12
<b>K1</b>	<b>-0.049768</b>	8.2e-06				1.00	-0.81	0.86	0.05	-0.04
<b>K2</b>	<b>0.0300551</b>	4.1e-05					1.00	-0.94	-0.00	0.04
<b>K3</b>	<b>-0.109443</b>	8.3e-05						1.00	0.03	-0.10
<b>P1</b>	<b>-0.00087109</b>	2.5e-07							1.00	-0.04
<b>P2</b>	<b>0.00234432</b>	2e-07								1.00

Table 2. Calibration coefficients and correlation matrix.



# Camera Locations

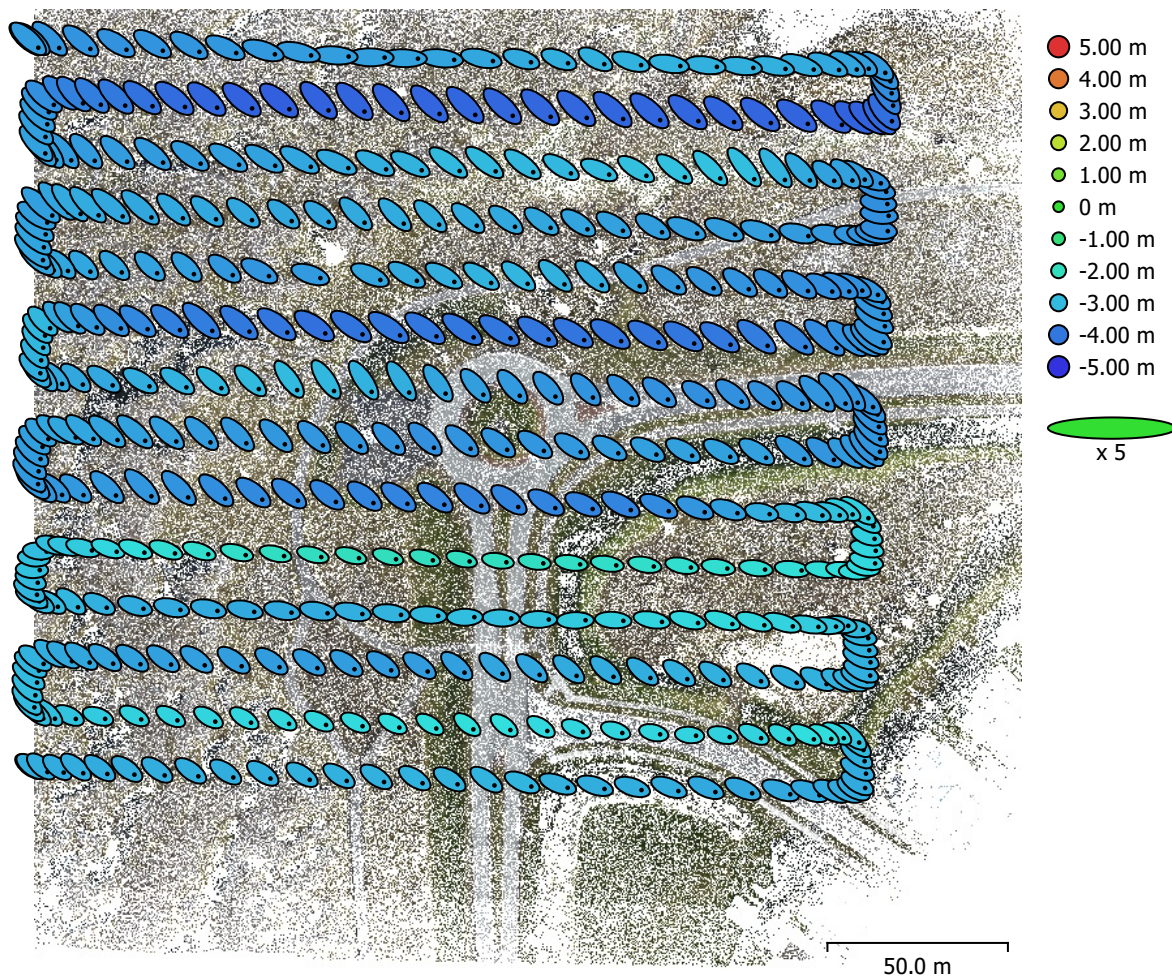


Fig. 3. Camera locations and error estimates.

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 (m)	Y error (m)	Z error (m)	XY error (m)	Total error (m)
1.02294	0.735099	3.32913	1.25967	3.55947

Table 3. Average camera location error.

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



# Ground Control Points

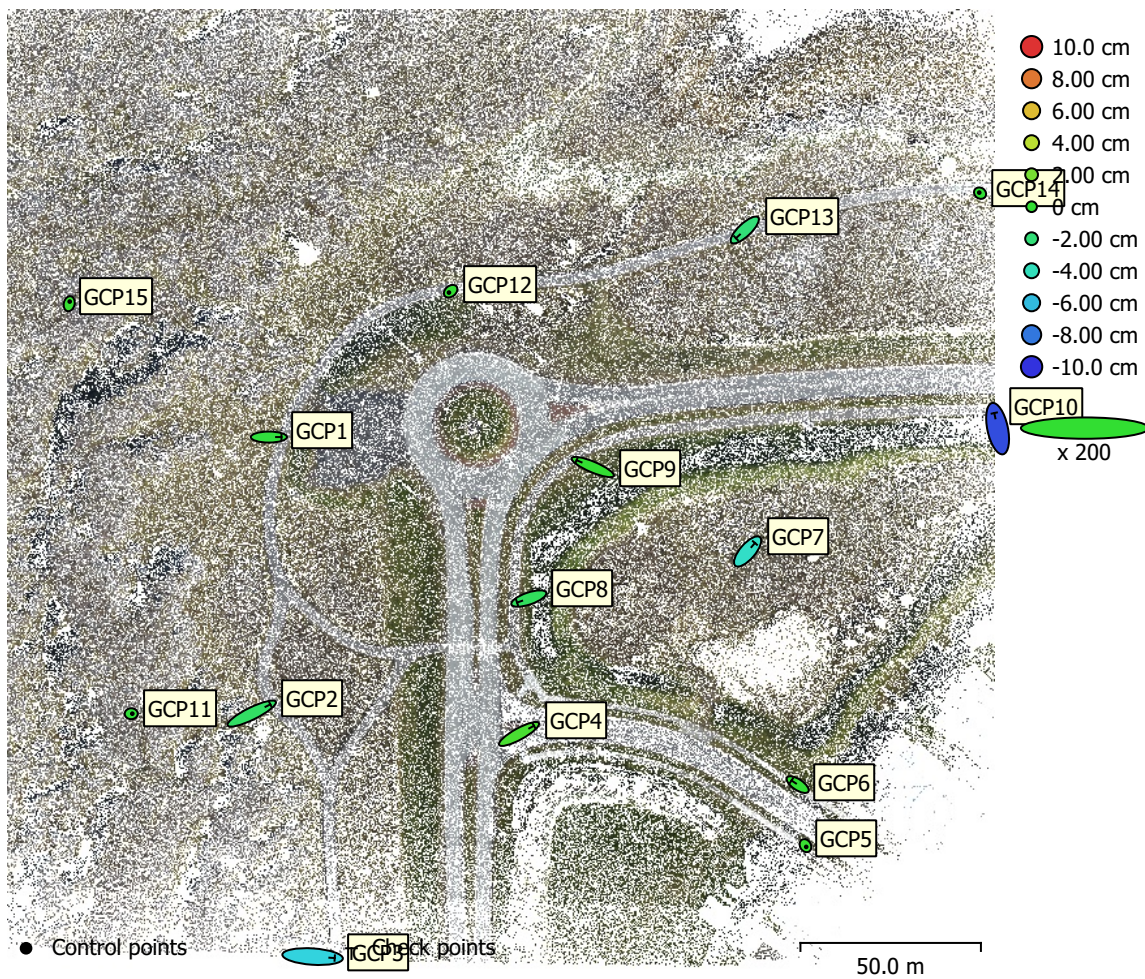


Fig. 4. GCP locations and error estimates.

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)
5	0.290354	0.359618	0.150352	0.462202	0.486041

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)
10	3.71025	2.17195	3.74484	4.29922	5.7015

Table 5. Check points RMSE.

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

<b>Label</b>	<b>X error (cm)</b>	<b>Y error (cm)</b>	<b>Z error (cm)</b>	<b>Total (cm)</b>	<b>Image (pix)</b>
GCP15	0.139972	0.595774	0.137897	0.627339	0.761 (54)
GCP14	-0.226944	0.155547	-0.0873339	0.288661	1.397 (13)
GCP12	-0.47047	-0.383498	0.0227831	0.607398	1.264 (46)
GCP11	0.294278	0.00759013	-0.229446	0.373233	0.964 (46)
GCP5	0.206131	-0.346924	0.182266	0.442794	1.409 (23)
<b>Total</b>	<b>0.290354</b>	<b>0.359618</b>	<b>0.150352</b>	<b>0.486041</b>	<b>1.096</b>

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

<b>Label</b>	<b>X error (cm)</b>	<b>Y error (cm)</b>	<b>Z error (cm)</b>	<b>Total (cm)</b>	<b>Image (pix)</b>
GCP13	-2.42651	-2.28111	-2.0138	3.89189	1.070 (65)
GCP10	-0.927732	4.31969	-9.22303	10.2267	0.780 (8)
GCP9	-4.47062	1.88542	0.0193239	4.85197	0.551 (46)
GCP8	-3.25806	-1.10361	-1.23797	3.65588	1.073 (38)
GCP7	2.0301	2.34948	-4.32656	5.32546	0.889 (61)
GCP6	-1.70733	1.13348	-0.0729841	2.05063	0.465 (24)
GCP4	4.12976	2.2664	0.655448	4.75617	1.457 (32)
GCP3	6.12245	-0.409561	-5.30919	8.11416	0.732 (7)
GCP2	5.1552	2.53546	-1.46107	5.92785	0.955 (30)
GCP1	3.48675	0.00436895	-0.330535	3.50238	0.555 (46)
<b>Total</b>	<b>3.71025</b>	<b>2.17195</b>	<b>3.74484</b>	<b>5.7015</b>	<b>0.922</b>

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



# Digital Elevation Model

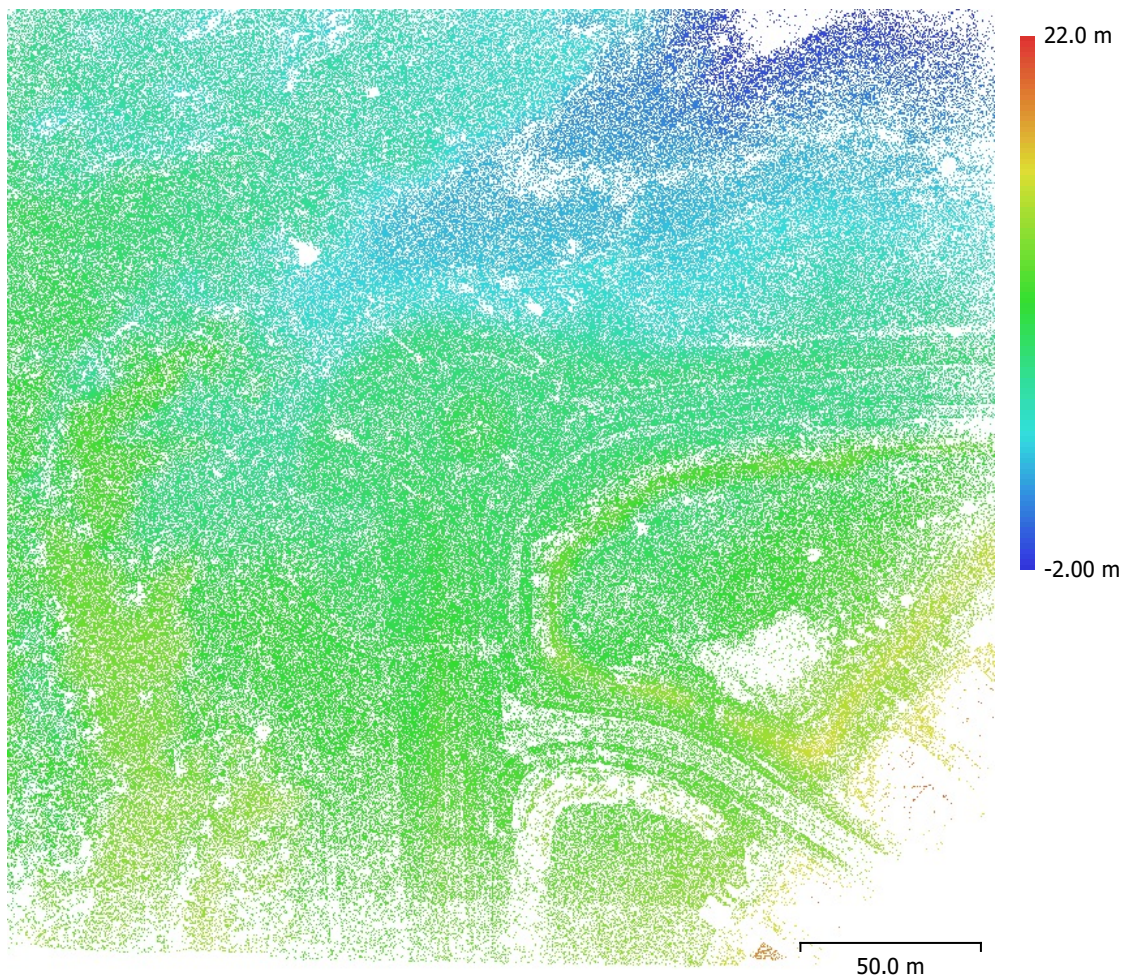


Fig. 5. Reconstructed digital elevation model.

Resolution: unknown  
Point density: unknown

# Processing Parameters

## General

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

## Tie Points

Points	575,056 of 2,212,979
RMS reprojection error	0.142624 (0.283627 pix)
Max reprojection error	0.402518 (1.16716 pix)
Mean key point size	1.98241 pix
Point colors	3 bands, uint8
Key points	No
Average tie point multiplicity	7.87091

## 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	16 minutes 44 seconds
Matching memory usage	8.49 GB
Alignment time	12 minutes 59 seconds
Alignment memory usage	5.62 GB

## Optimization parameters

Parameters	f, cx, cy, k1-k3, p1, p2
Adaptive camera model fitting	No
Exclude corners	No
Optimization time	12 seconds
Date created	2025:11:13 10:57:28
Software version	2.3.0.21427
File size	285.33 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