

Sander_2022-10-20_H20T_80m_Thermal

Processing Report

01 July 2024



Survey Data

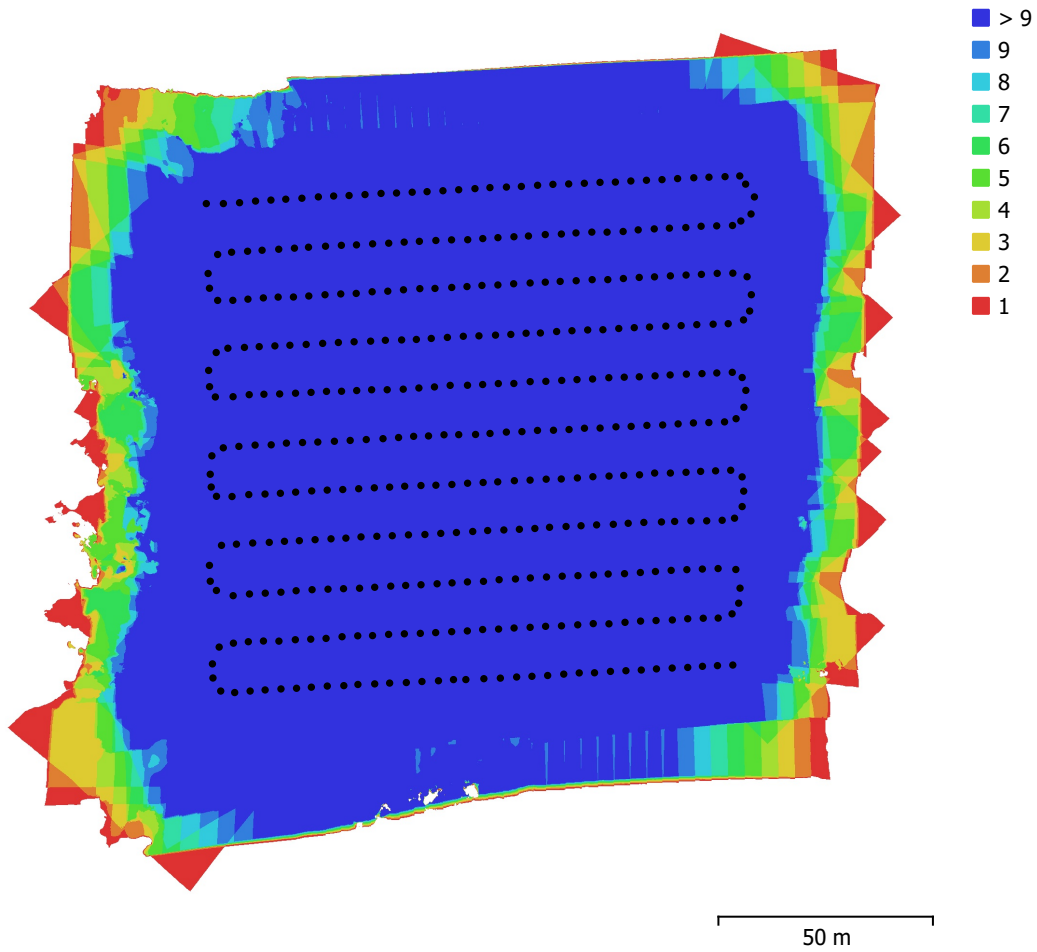


Fig. 1. Camera locations and image overlap.

Number of images:	402	Camera stations:	402
Flying altitude:	82 m	Tie points:	63,435
Ground resolution:	7.46 cm/pix	Projections:	282,684
Coverage area:	0.0318 km ²	Reprojection error:	0.672 pix

Camera Model	Resolution	Focal Length	Pixel Size	Precalibrated
ZH20T (13.5mm)	640 x 512	13.5 mm	12.3 x 12.3 μ m	No

Table 1. Cameras.

Camera Calibration

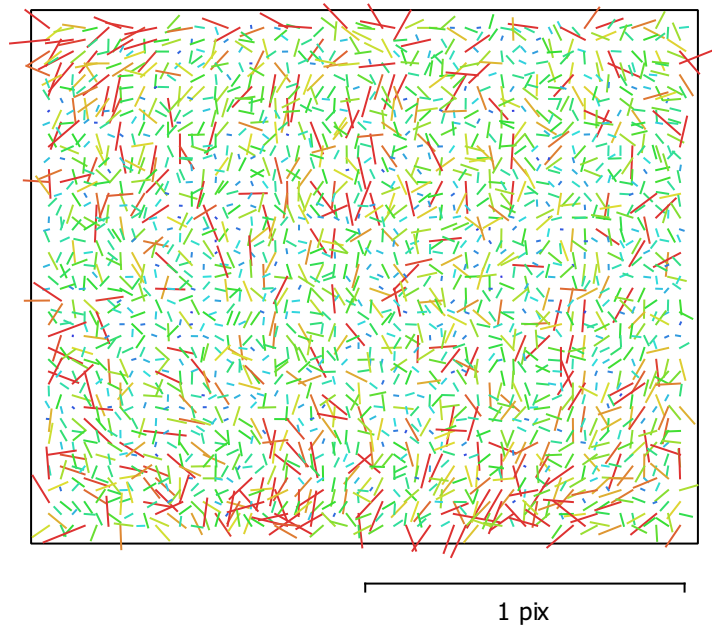


Fig. 2. Image residuals for ZH20T (13.5mm).

ZH20T (13.5mm)

402 images

Type	Resolution	Focal Length	Pixel Size
Frame	640 x 512	13.5 mm	12.3 x 12.3 μm

	Value	Error	K1	K2	P1	P2
F	1098.69					
K1	-0.195339	0.0017	1.00	-0.54	-0.25	0.59
K2	0.110411	0.0065		1.00	0.00	-0.06
P1	-0.000472462	3.5e-05			1.00	-0.22
P2	0.000190736	4e-05				1.00

Table 2. Calibration coefficients and correlation matrix.

Camera Locations

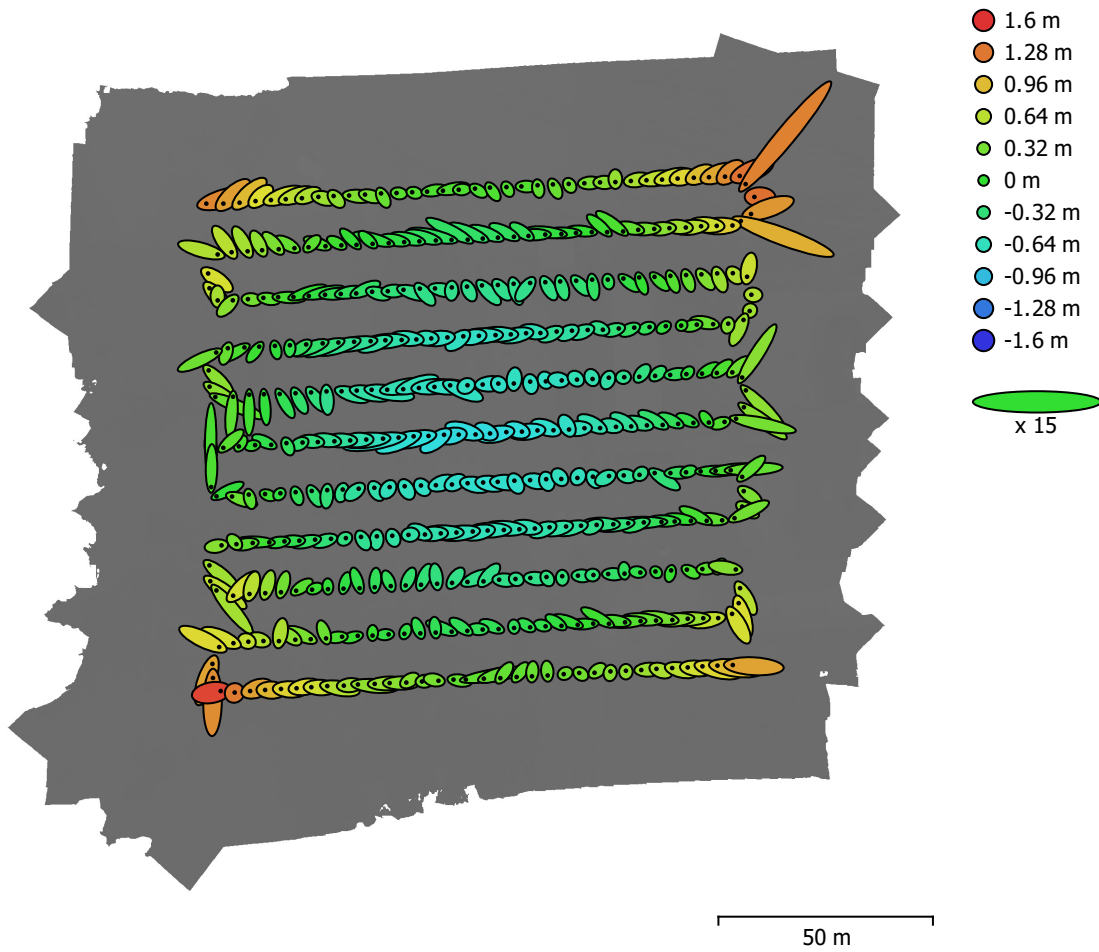


Fig. 3. Camera locations and error estimates.

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 (cm)	Y error (cm)	Z error (cm)	XY error (cm)	Total error (cm)
28.4683	17.7579	49.2714	33.5527	59.6109

Table 3. Average camera location error.

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

Digital Elevation Model

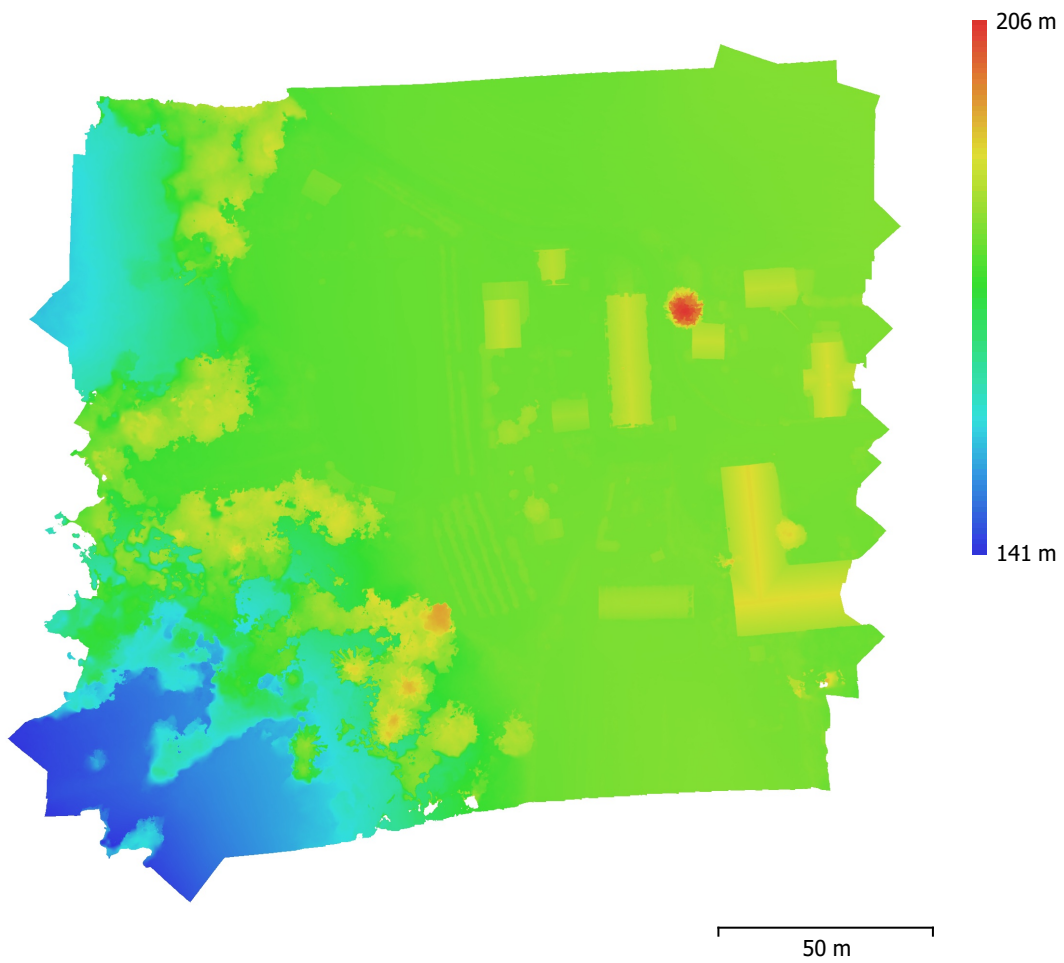


Fig. 4. Reconstructed digital elevation model.

Resolution: 5 cm/pix
Point density: 400 points/m²

Processing Parameters

General

Cameras	402
Aligned cameras	402
Coordinate system	ETRS89 / UTM zone 32N + NN2000 height (EPSG::5972)
Rotation angles	Yaw, Pitch, Roll

Tie Points

Points	63,435 of 76,483
RMS reprojection error	0.183164 (0.672474 pix)
Max reprojection error	0.554978 (9.66615 pix)
Mean key point size	3.28393 pix
Point colors	1 bands, uint16
Key points	No
Average tie point multiplicity	5.32629

Alignment parameters

Accuracy	High
Generic preselection	Yes
Reference preselection	Source
Key point limit	40,000
Key point limit per Mpx	1,000
Tie point limit	4,000
Exclude stationary tie points	Yes
Guided image matching	No
Adaptive camera model fitting	Yes
Matching time	27 seconds
Matching memory usage	222.75 MB
Alignment time	1 minutes 6 seconds
Alignment memory usage	436.70 MB
Date created	2024:06:28 16:21:05
Software version	2.1.0.17532
File size	20.25 MB

DEM

Size	5,440 x 5,520
Coordinate system	ETRS89 / UTM zone 32N + NN2000 height (EPSG::5972)
File size	98.36 MB

Orthomosaic

Size	2,300 x 2,170
Coordinate system	ETRS89 / UTM zone 32N + NN2000 height (EPSG::5972)
Colors	1 bands, uint16

Reconstruction parameters

Blending mode	Mosaic
Surface	DEM
Enable hole filling	Yes
Enable ghosting filter	No
Processing time	26 seconds
Memory usage	336.89 MB
Date created	2024:06:28 16:24:49
Software version	2.1.0.17532
File size	222.22 MB

System

Software name	Agisoft Metashape Professional
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Software version	2.1.0 build 17532
OS	Windows 64 bit
RAM	127.15 GB
CPU	AMD Ryzen 9 7950X 16-Core Processor
GPU(s)	NVIDIA GeForce RTX 4080 SUPER