

Bertilryggen East

Processing Report
10 March 2021



Survey Data

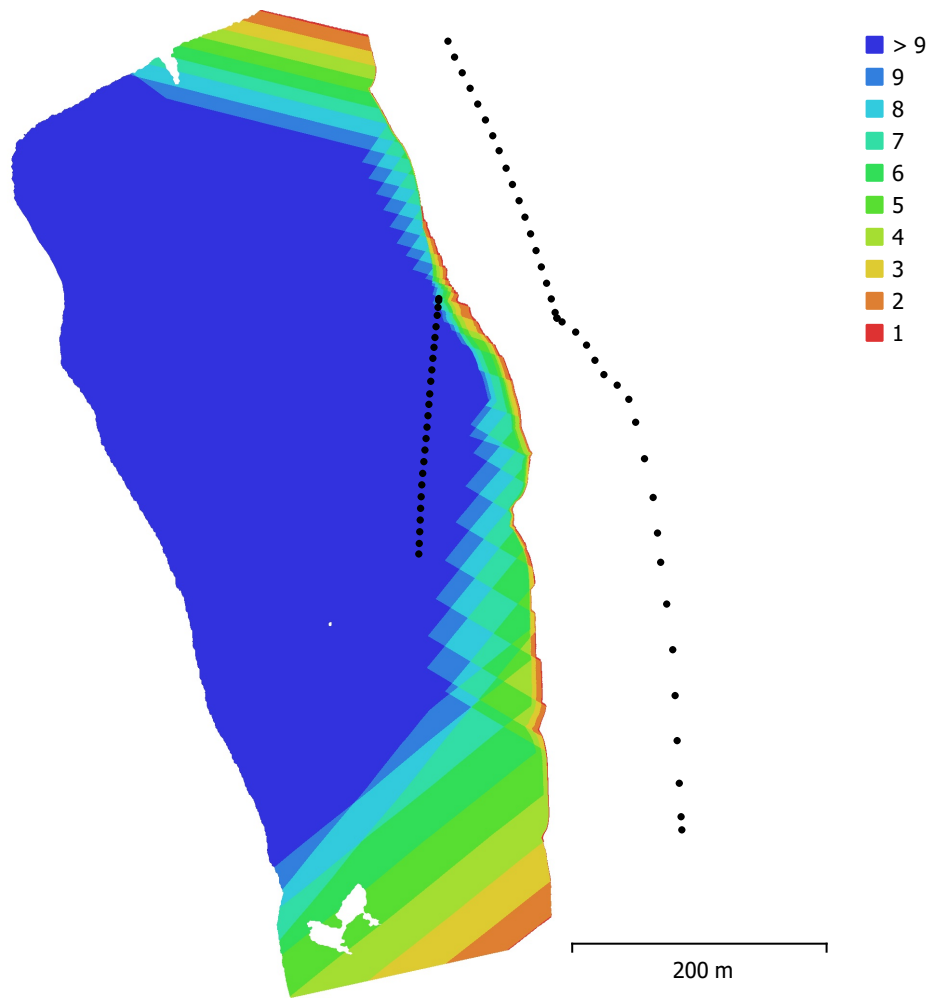


Fig. 1. Camera locations and image overlap.

Number of images:	64	Camera stations:	64
Flying altitude:	134 m	Tie points:	71,896
Ground resolution:	4.72 cm/pix	Projections:	254,304
Coverage area:	0.201 km ²	Reprojection error:	0.364 pix

Camera Model	Resolution	Focal Length	Pixel Size	Precalibrated
FC3170 (4.5mm)	4000 x 3000	4.5 mm	1.62 x 1.62 μm	No

Table 1. Cameras.

Camera Calibration

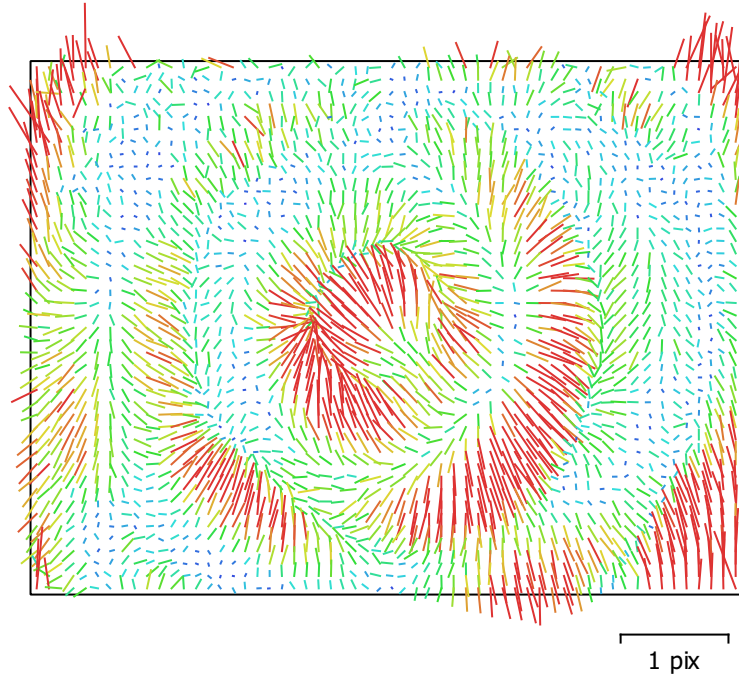


Fig. 2. Image residuals for FC3170 (4.5mm).

FC3170 (4.5mm)

64 images

Type
Frame

Resolution
4000 x 3000

Focal Length
4.5 mm

Pixel Size
1.62 x 1.62 μm

	Value	Error	F	Cx	Cy	K1	K2	K3	P1	P2
F	2951.06	0.18	1.00	-0.07	-0.46	-0.02	0.20	-0.27	0.18	-0.12
Cx	11.9118	0.14		1.00	0.17	0.01	-0.03	0.04	0.60	-0.08
Cy	2.58522	0.29			1.00	-0.17	0.14	-0.17	0.13	0.23
K1	-0.0314158	7e-05				1.00	-0.92	0.83	0.04	-0.21
K2	0.178518	0.00022					1.00	-0.98	0.04	0.10
K3	-0.189299	0.00023						1.00	-0.07	-0.10
P1	0.000130146	1.5e-05							1.00	-0.03
P2	1.87046e-05	1e-05								1.00

Table 2. Calibration coefficients and correlation matrix.

Camera Locations

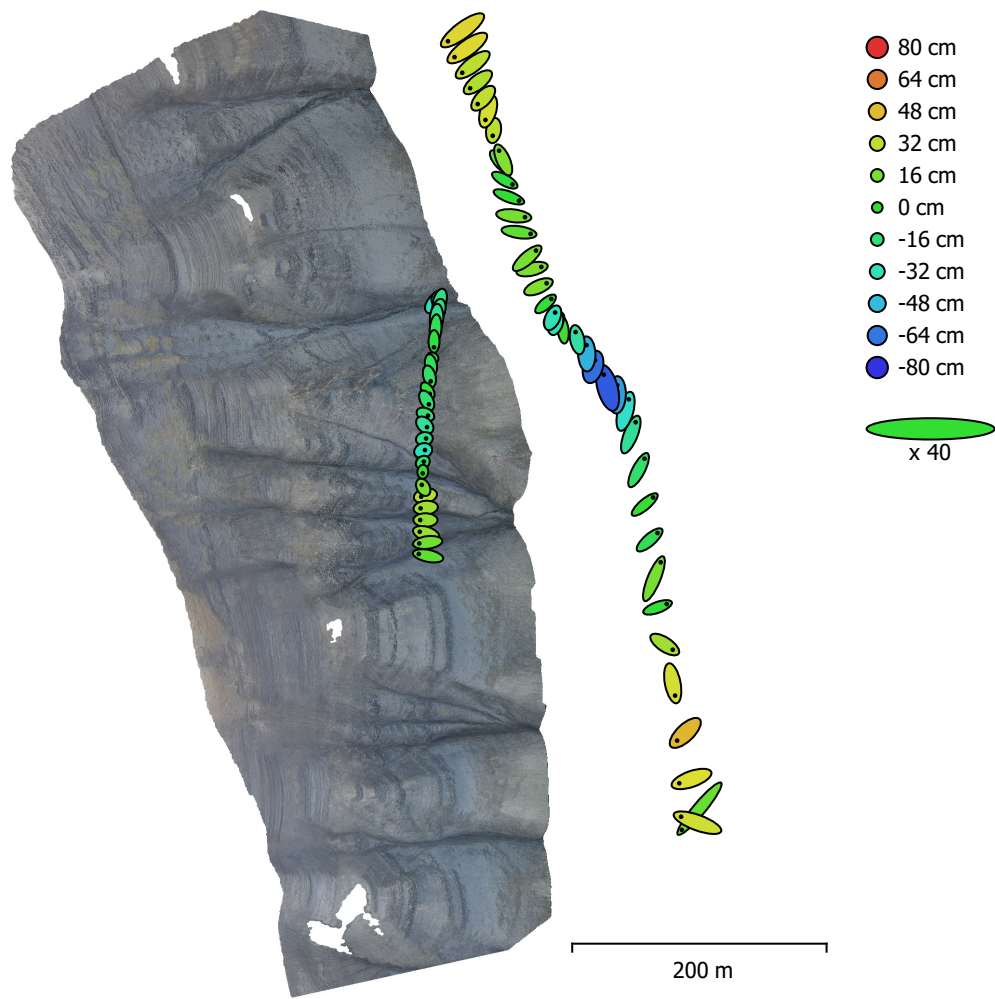


Fig. 3. Camera locations and error estimates.

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)
26.3213	27.6169	27.3863	38.1511	46.9629

Table 3. Average camera location error.

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

Digital Elevation Model

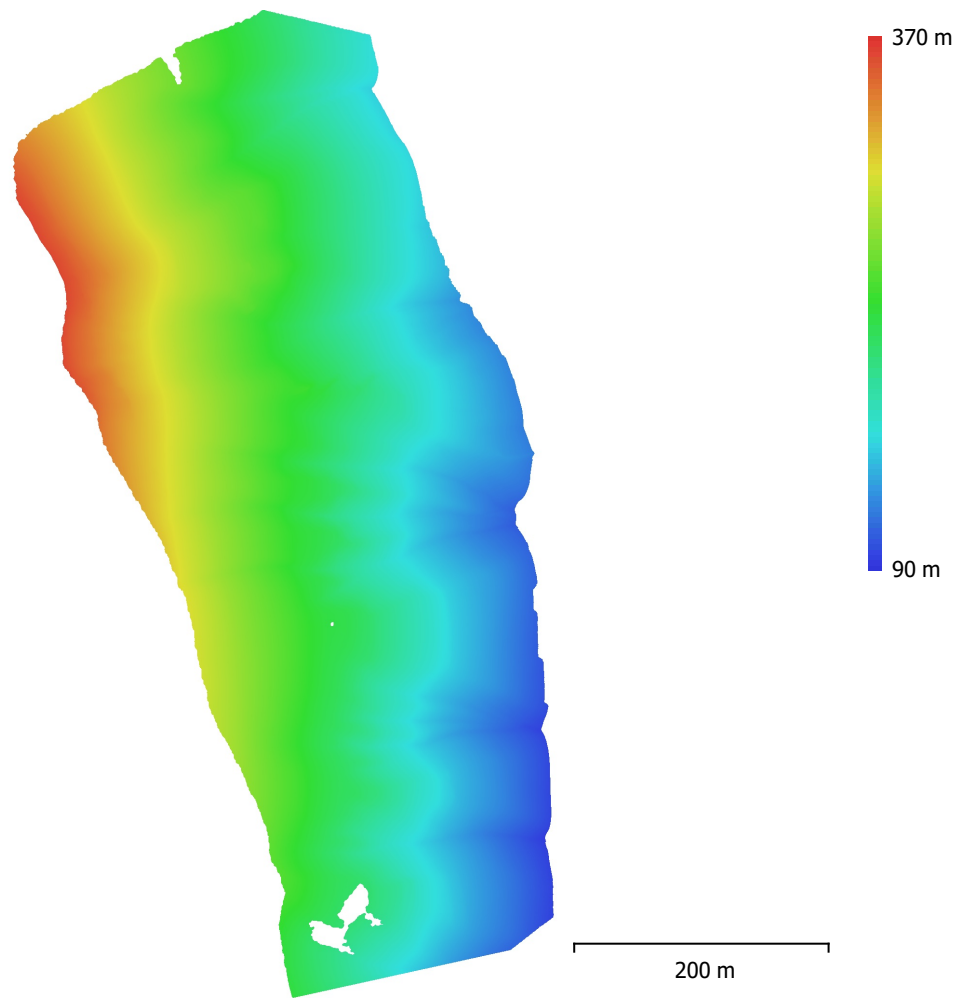


Fig. 4. Reconstructed digital elevation model.

Resolution: 4.72 cm/pix
Point density: 448 points/m²

Processing Parameters

General

Cameras	64
Aligned cameras	64
Coordinate system	WGS 84 / UTM zone 33N (EPSG::32633)
Rotation angles	Yaw, Pitch, Roll

Point Cloud

Points	71,896 of 73,948
RMS reprojection error	0.246302 (0.364023 pix)
Max reprojection error	0.739412 (5.61789 pix)
Mean key point size	1.48381 pix
Point colors	3 bands, uint8
Key points	No
Average tie point multiplicity	3.66556

Alignment parameters

Accuracy	Highest
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	56 seconds
Matching memory usage	309.27 MB
Alignment time	1 minutes 33 seconds
Alignment memory usage	37.45 MB
Software version	1.6.3.10732
File size	6.00 MB

Depth Maps

Count	64
Depth maps generation parameters	
Quality	Ultra High
Filtering mode	Mild
Processing time	17 minutes 23 seconds
Memory usage	2.53 GB
Software version	1.6.3.10732
File size	828.19 MB

Dense Point Cloud

Points	152,450,147
Point colors	3 bands, uint8
Depth maps generation parameters	
Quality	Ultra High
Filtering mode	Mild
Processing time	17 minutes 23 seconds
Memory usage	2.53 GB

Dense cloud generation parameters

Processing time	1 hours 1 minutes
Memory usage	10.69 GB
Software version	1.6.3.10732
File size	1.98 GB

Model

Faces	1,999,999
Vertices	1,006,957
Vertex colors	3 bands, uint8
Texture	4,096 x 4,096, 4 bands, uint8
Depth maps generation parameters	
Quality	Ultra High
Filtering mode	Mild
Processing time	17 minutes 23 seconds
Memory usage	2.53 GB
Reconstruction parameters	
Surface type	Arbitrary
Source data	Dense cloud
Interpolation	Enabled
Strict volumetric masks	No
Processing time	1 hours 30 minutes
Memory usage	75.85 GB
Texturing parameters	
Mapping mode	Generic
Blending mode	Mosaic
Texture size	4,096
Enable hole filling	Yes
Enable ghosting filter	Yes
UV mapping time	4 minutes 50 seconds
Blending time	46 seconds
Software version	1.6.3.10732
File size	108.40 MB
Tiled Model	
Texture	3 bands, uint8
Depth maps generation parameters	
Quality	Ultra High
Filtering mode	Mild
Processing time	17 minutes 23 seconds
Memory usage	2.53 GB
Reconstruction parameters	
Source data	Dense cloud
Tile size	256
Face count	Medium
Enable ghosting filter	No
Processing time	1 hours 23 minutes
Memory usage	13.92 GB
Software version	1.7.1.11797
File size	173.78 MB
System	
Software name	Agisoft Metashape Professional
Software version	1.7.1 build 11797
OS	Windows 64 bit
RAM	127.78 GB
CPU	Intel(R) Core(TM) i9-9900K CPU @ 3.60GHz
GPU(s)	GeForce RTX 2080