

Sveasletta 1

Processing Report
10 March 2021



Survey Data

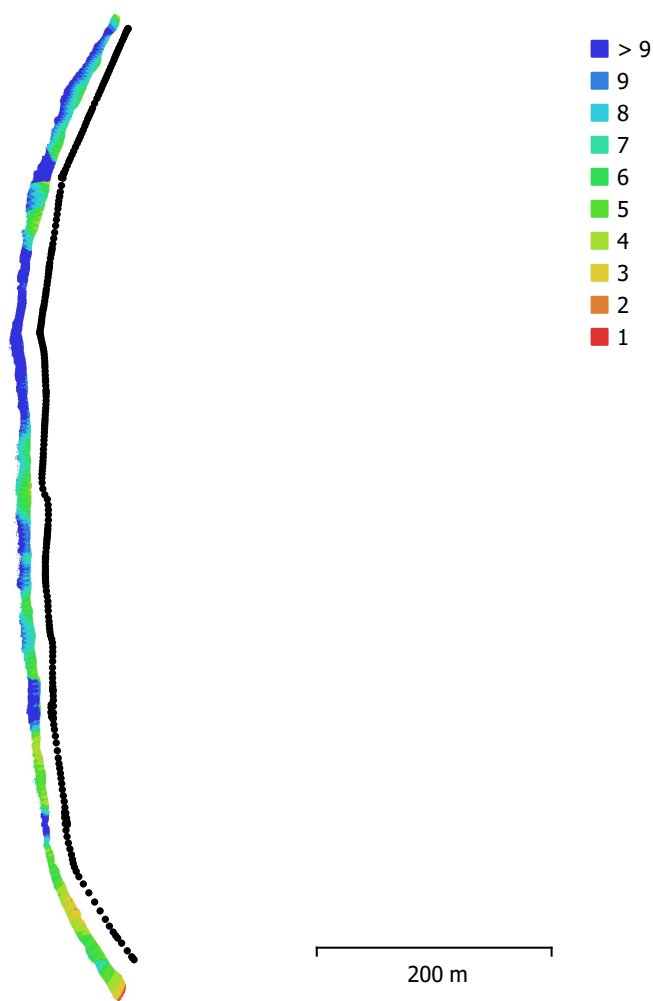


Fig. 1. Camera locations and image overlap.

Number of images:	276	Camera stations:	276
Flying altitude:	18.6 m	Tie points:	301,716
Ground resolution:	5.98 mm/pix	Projections:	882,187
Coverage area:	9.03e+03 m ²	Reprojection error:	0.417 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

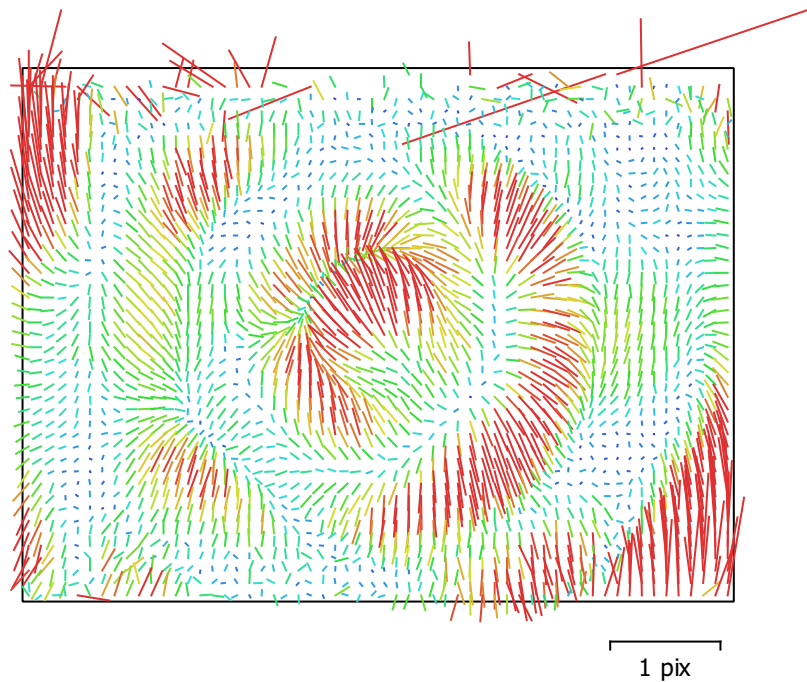


Fig. 2. Image residuals for FC3170 (4.5mm).

FC3170 (4.5mm)

276 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	2967.7	0.2	1.00	0.01	-0.34	0.05	0.40	-0.49	-0.05	0.36
Cx	-24.6272	0.14		1.00	0.08	-0.06	0.09	-0.11	0.67	0.06
Cy	-24.2492	0.2			1.00	0.17	-0.23	0.27	0.09	0.30
K1	-0.0357406	4.2e-05				1.00	-0.78	0.67	-0.06	0.35
K2	0.189062	0.00015					1.00	-0.97	0.08	0.13
K3	-0.200774	0.00019						1.00	-0.10	-0.19
P1	-0.00351938	1.5e-05							1.00	0.08
P2	-0.000127401	9.7e-06								1.00

Table 2. Calibration coefficients and correlation matrix.

Camera Locations

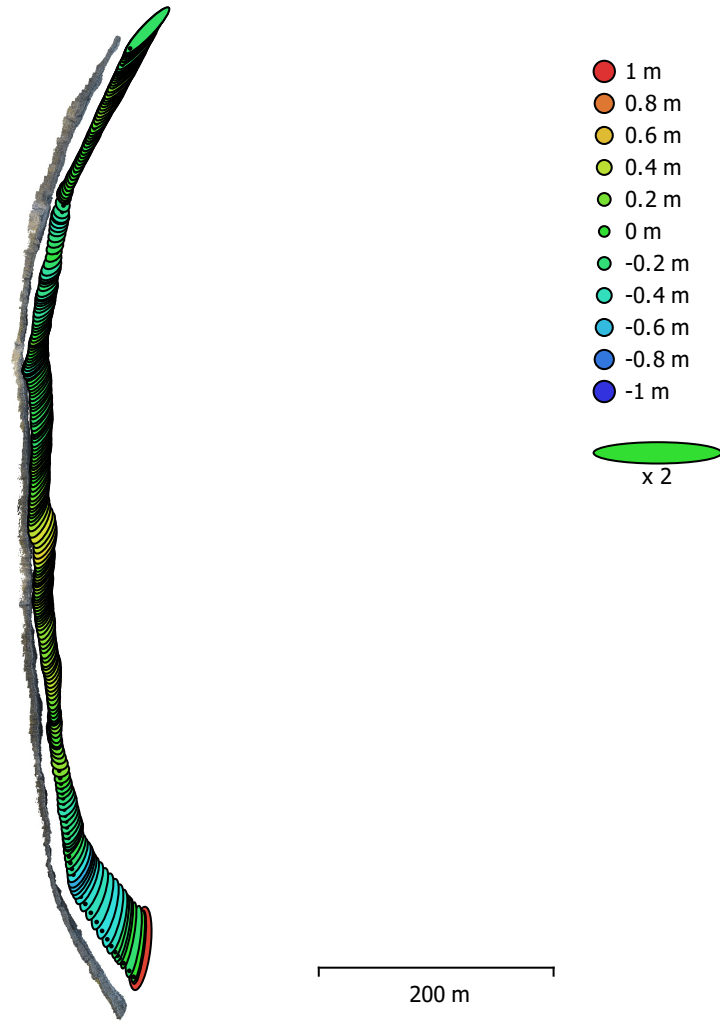


Fig. 3. Camera locations and error estimates.

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)
5.17366	8.73003	0.237862	10.1479	10.1507

Table 3. Average camera location error.
 X - Longitude, Y - Latitude, Z - Altitude.

Digital Elevation Model

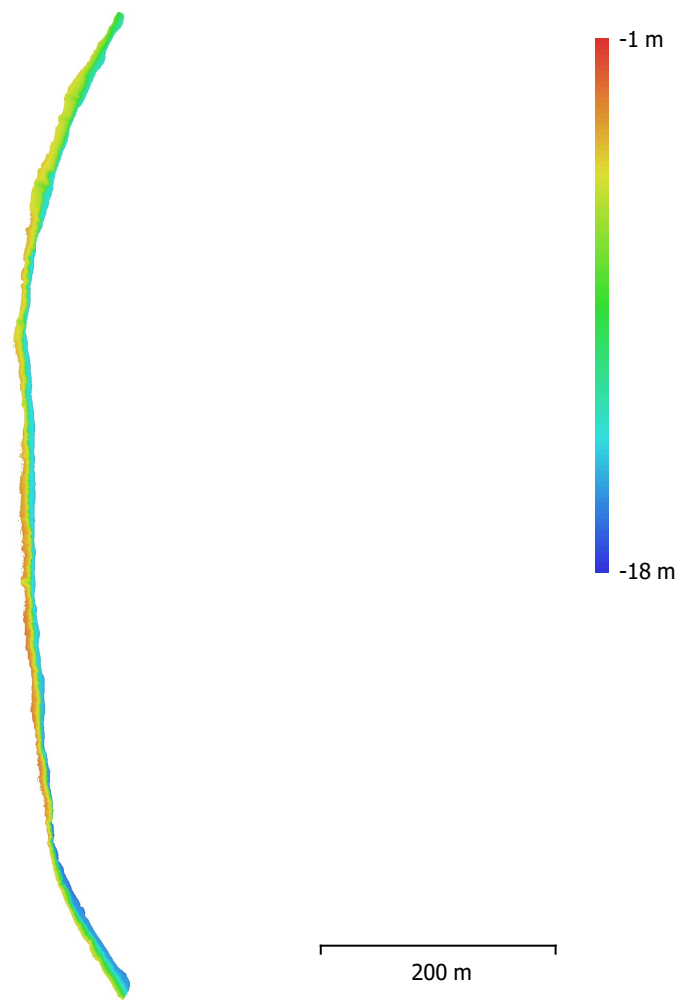


Fig. 4. Reconstructed digital elevation model.

Resolution: 3.44 cm/pix
Point density: 843 points/m²

Processing Parameters

General

Cameras	276
Aligned cameras	276
Coordinate system	WGS 84 (EPSG::4326)
Rotation angles	Yaw, Pitch, Roll

Point Cloud

Points	301,716 of 358,099
RMS reprojection error	0.22589 (0.416667 pix)
Max reprojection error	0.69133 (31.987 pix)
Mean key point size	1.98724 pix
Point colors	3 bands, uint8
Key points	No
Average tie point multiplicity	3.11298

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	1 minutes 52 seconds
Matching memory usage	370.41 MB
Alignment time	2 minutes 32 seconds
Alignment memory usage	143.83 MB
Software version	1.6.3.10732
File size	24.98 MB

Depth Maps

Count	276
Depth maps generation parameters	
Quality	Ultra High
Filtering mode	Mild
Processing time	18 minutes 34 seconds
Memory usage	3.13 GB
Software version	1.6.3.10732
File size	3.29 GB

Dense Point Cloud

Points	541,542,319
Point colors	3 bands, uint8
Depth maps generation parameters	
Quality	Ultra High
Filtering mode	Mild
Processing time	18 minutes 34 seconds
Memory usage	3.13 GB

Dense cloud generation parameters

Processing time	2 hours 6 minutes
Memory usage	10.70 GB
Software version	1.6.3.10732
File size	9.59 GB

Model

Faces	1,500,000
Vertices	759,277
Vertex colors	3 bands, uint8
Texture	8,192 x 8,192, 4 bands, uint8
Depth maps generation parameters	
Quality	Ultra High
Filtering mode	Mild
Processing time	18 minutes 34 seconds
Memory usage	3.13 GB
Reconstruction parameters	
Surface type	Arbitrary
Source data	Dense cloud
Interpolation	Enabled
Strict volumetric masks	No
Processing time	4 hours 56 minutes
Memory usage	8.65 GB
Texturing parameters	
Mapping mode	Generic
Blending mode	Mosaic
Texture size	8,192
Enable hole filling	Yes
Enable ghosting filter	Yes
UV mapping time	9 minutes 51 seconds
Blending time	1 minutes 27 seconds
Software version	1.6.3.10732
File size	185.95 MB
Tiled Model	
Texture	3 bands, uint8
Depth maps generation parameters	
Quality	Ultra High
Filtering mode	Mild
Processing time	18 minutes 34 seconds
Memory usage	3.13 GB
Reconstruction parameters	
Source data	Dense cloud
Tile size	256
Face count	Low
Enable ghosting filter	No
Processing time	5 hours 48 minutes
Memory usage	12.30 GB
Software version	1.7.1.11797
File size	385.08 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