

Agisoft Metashape

Processing Report
21 June 2019



Survey Data

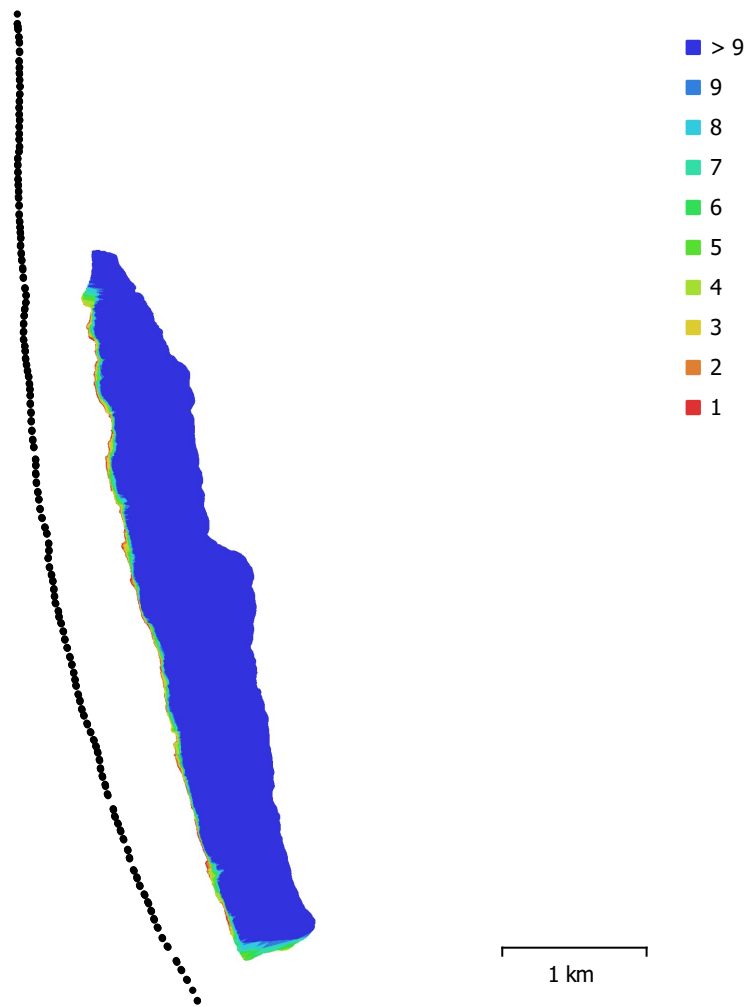


Fig. 1. Camera locations and image overlap.

Number of images:	382	Camera stations:	382
Flying altitude:	1.02 km	Tie points:	70,223
Ground resolution:	9.65 cm/pix	Projections:	353,886
Coverage area:	2.94 km ²	Reprojection error:	2.66 pix

Camera Model	Resolution	Focal Length	Pixel Size	Precalibrated
NIKON D90 (50 mm)	4288 x 2848	50 mm	5.6 x 5.6 μ m	No

Table 1. Cameras.

Camera Calibration



Fig. 2. Image residuals for NIKON D90 (50 mm).

NIKON D90 (50 mm)

382 images

Type
Frame

Resolution
4288 x 2848

Focal Length
50 mm

Pixel Size
5.6 x 5.6 μm

	Value	Error	K1	P1	P2
F	8923.09				
K1	-0.00392125	0.00017	1.00	0.04	-0.21
P1	0.000354155	3.2e-005		1.00	-0.04
P2	0.000554762	6.1e-005			1.00

Table 2. Calibration coefficients and correlation matrix.

Camera Locations

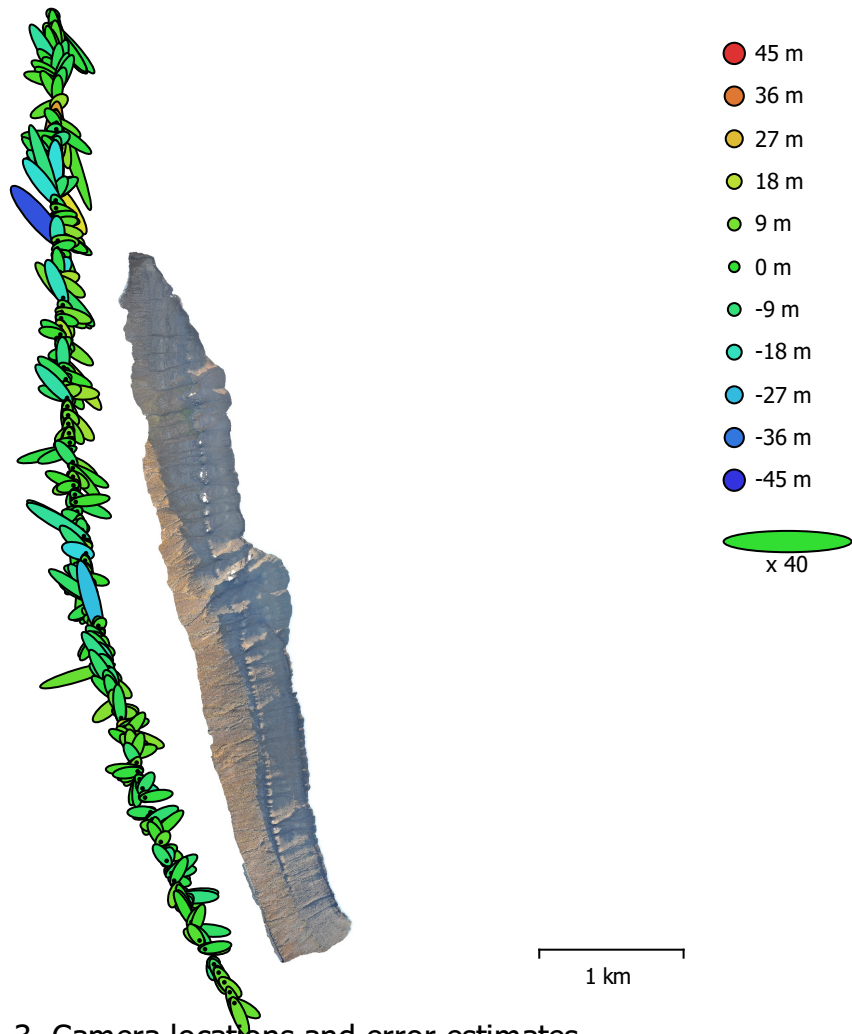


Fig. 3. Camera locations and error estimates.

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)
2.7026	3.14644	8.37626	4.14779	9.34697

Table 3. Average camera location error.

X - Longitude, Y - Latitude, Z - Altitude.

Digital Elevation Model

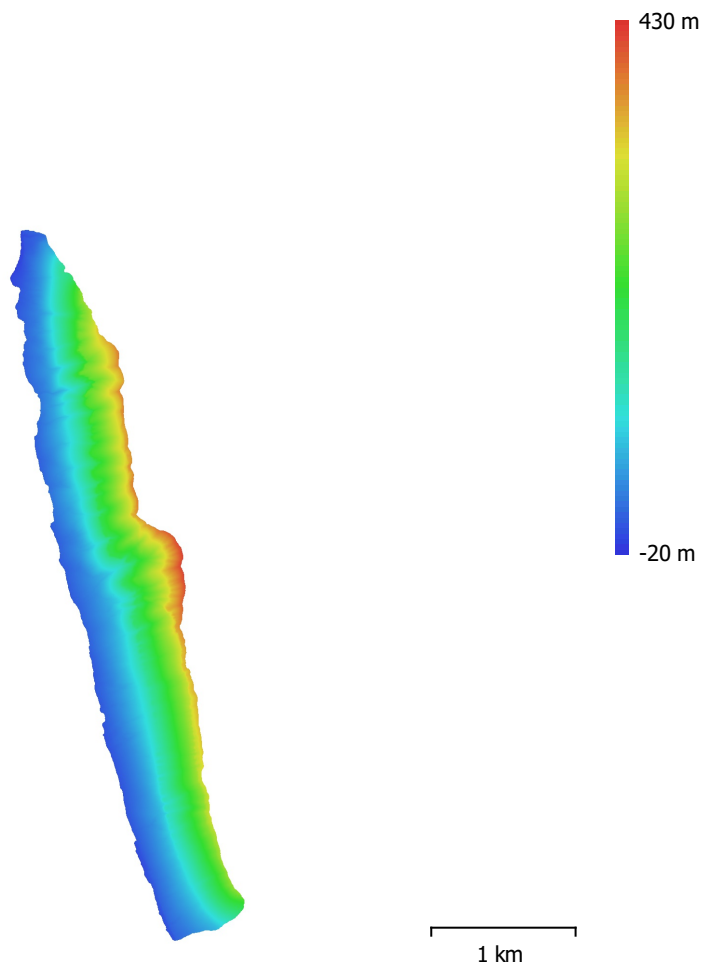


Fig. 4. Reconstructed digital elevation model.

Resolution: 38.6 cm/pix
Point density: 6.71 points/m²

Processing Parameters

General

Cameras	382
Aligned cameras	382
Coordinate system	WGS 84 (EPSG::4326)
Rotation angles	Yaw, Pitch, Roll

Point Cloud

Points	70,223 of 117,930
RMS reprojection error	0.172484 (2.65838 pix)
Max reprojection error	0.523453 (55.1139 pix)
Mean key point size	14.3113 pix
Point colors	3 bands, uint8
Key points	No
Average tie point multiplicity	5.68344

Alignment parameters

Accuracy	Low
Generic preselection	Yes
Reference preselection	Yes
Key point limit	40,000
Tie point limit	4,000
Filter points by mask	No
Adaptive camera model fitting	Yes
Matching time	14 minutes 15 seconds
Alignment time	5 minutes 47 seconds

Dense Point Cloud

Points	25,593,615
Point colors	3 bands, uint8

Reconstruction parameters

Quality	Medium
Depth filtering	Moderate
Depth maps generation time	50 minutes 34 seconds
Dense cloud generation time	9 minutes 6 seconds

Model

Faces	1,706,240
Vertices	857,138
Vertex colors	3 bands, uint8
Texture	4,096 x 4,096 x 8, 4 bands, uint8

Reconstruction parameters

Surface type	Arbitrary
Source data	Dense
Interpolation	Enabled
Quality	Medium
Depth filtering	Moderate
Face count	1,706,241
Processing time	30 minutes 45 seconds

Texturing parameters

Blending mode	Mosaic
Texture size	4,096 x 4,096
Enable color correction	No
Enable hole filling	Yes
UV mapping time	45 seconds

General

Blending time 3 minutes 11 seconds

Orthomosaic

Size 50,435 x 8,714

Coordinate system WGS 84 (EPSG::4978)

Colors 3 bands, uint8

Reconstruction parameters

Blending mode Mosaic

Surface Mesh

Enable hole filling Yes

Processing time 14 minutes 17 seconds

Software

Version 1.5.0 build 7492

Platform Windows 64