Hyrnestabben

Connected component size 99%

24 February 2022

Survey Data

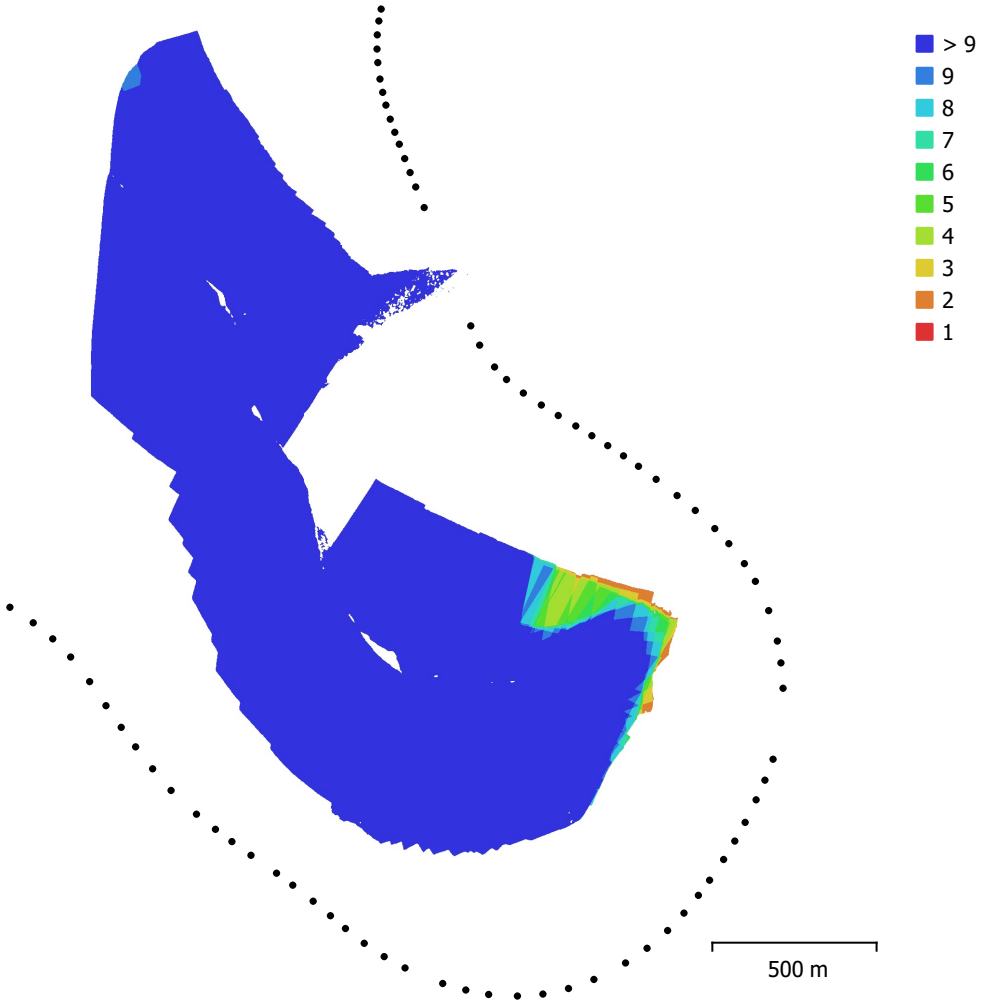

Fig. 1. Camera locations and image overlap.

Number of images:	79	Camera stations:	79
Flying altitude:	670 m	Tie points:	146,856
Ground resolution:	6.41 cm/pix	Projections:	564,572
Coverage area:	1.95 km²	Reprojection error:	0.372 pix

Camera Model	Resolution	Focal Length	Pixel Size	Precalibrated
NIKON D800 (50mm)	4924 x 7374	50 mm	4.88 x 4.88 µm	No

Table 1. Cameras.

Camera Calibration

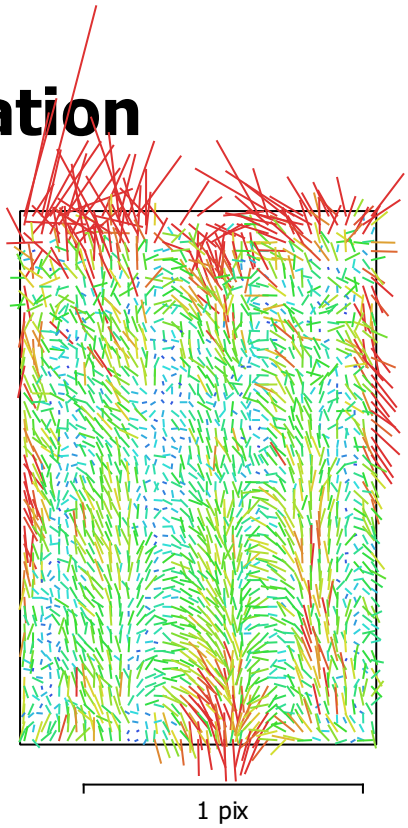

Fig. 2. Image residuals for NIKON D800 (50mm).

NIKON D800 (50mm)

79 images

Type	Resolution	Focal Length	Pixel Size
Frame	**4924 x 7374**	**50 mm**	**4.88 x 4.88 µm**

	Value	Error	F	Cx	Cy	B1	B2	K1	K2	K3	P1	P2
F	**10563.8**	0.48	1.00	0.12	-0.15	-0.65	-0.02	0.04	0.09	-0.08	0.06	-0.41
Cx	**27.3583**	0.49		1.00	0.22	-0.29	0.38	0.03	0.03	-0.01	0.80	0.07
Cy	**13.5732**	0.64			1.00	-0.47	0.10	-0.05	-0.02	0.06	0.14	0.37
B1	**-2.98152**	0.4				1.00	-0.10	-0.03	-0.04	0.01	-0.15	0.19
B2	**12.0062**	0.3					1.00	0.00	0.01	-0.01	0.00	-0.04
K1	**-0.11073**	7.9e-05						1.00	-0.92	0.85	0.04	-0.16
K2	**0.0818022**	0.001							1.00	-0.98	0.00	-0.03
K3	**0.170414**	0.004								1.00	0.01	0.04
P1	**0.00039216**	1.1e-05									1.00	0.15
P2	**0.000716613**	9.4e-06										1.00

Table 2. Calibration coefficients and correlation matrix.

Camera Locations

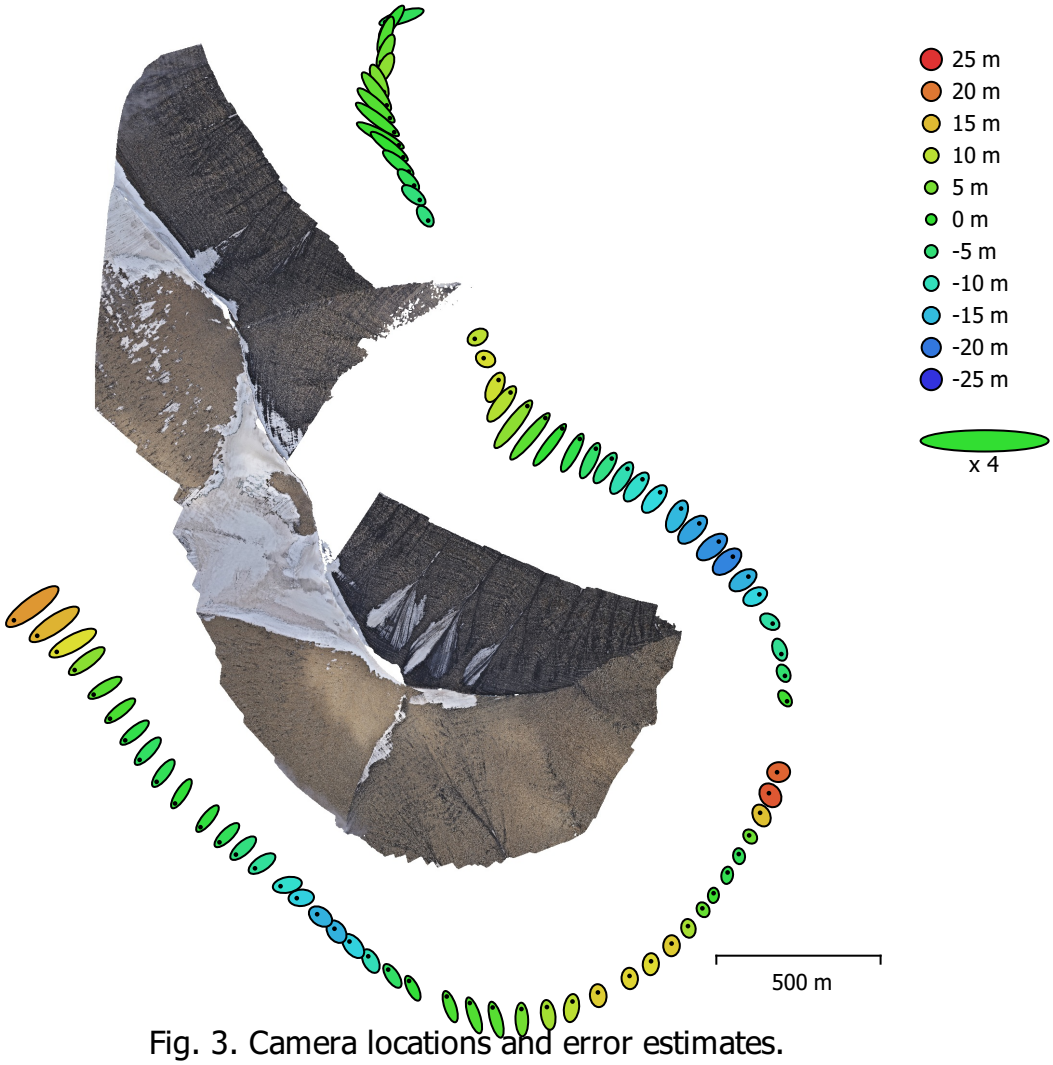

Fig. 3. Camera locations and error estimates.
Z error is represented by ellipse color. X,Y errors are represented by ellipse shape.
Estimated camera locations are marked with a black dot.

X error (m)	Y error (m)	Z error (m)	XY error (m)	Total error (m)
11.8057	12.5293	9.47365	17.2151	19.6496

Table 3. Average camera location error.
X - Easting, Y - Northing, Z - Altitude.

Digital Elevation Model

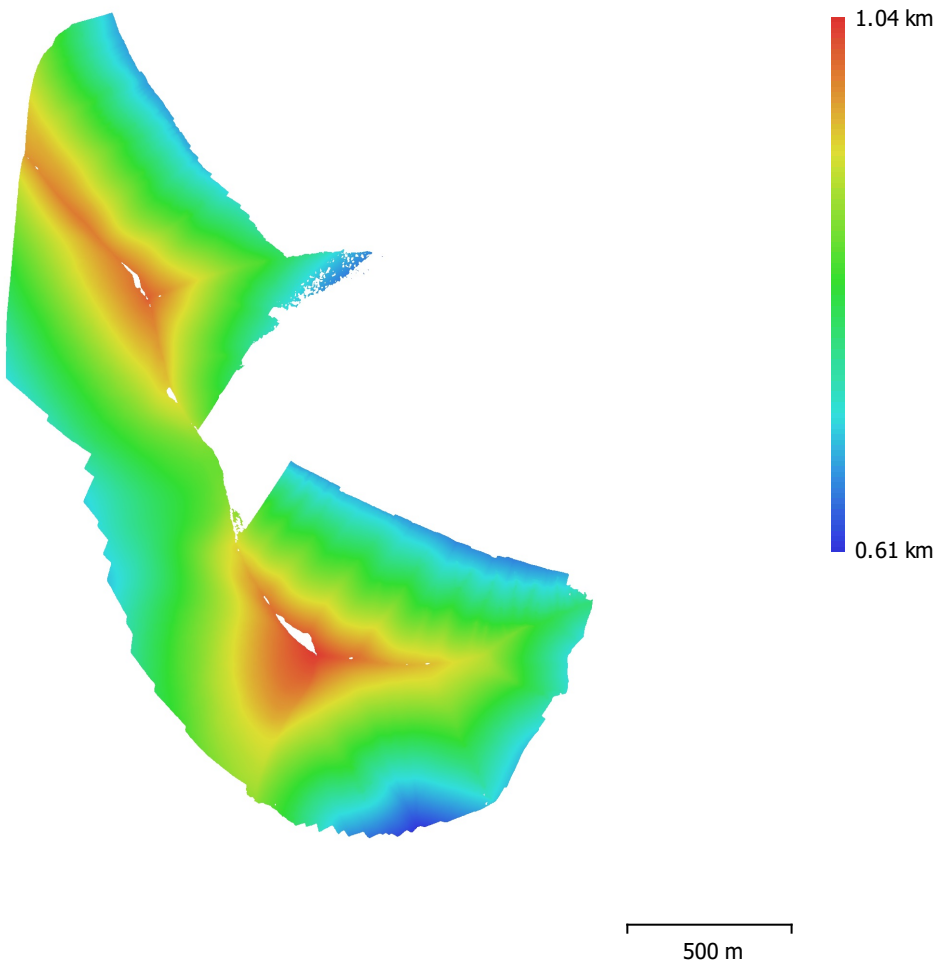

Fig. 4. Reconstructed digital elevation model.

Resolution:	1.45 m/pix
Point density:	0.475 points/m²

Processing Parameters

General	
Cameras	79
Aligned cameras	79
Coordinate system	WGS 84 / UTM zone 33N (EPSG::32633)
Rotation angles	Yaw, Pitch, Roll
Point Cloud	
Points	146,856 of 170,711
RMS reprojection error	0.147154 (0.372321 pix)
Max reprojection error	1.06099 (11.2145 pix)
Mean key point size	2.41797 pix
Point colors	3 bands, uint8
Key points	No
Average tie point multiplicity	3.95174
Alignment parameters	
Accuracy	High
Generic preselection	Yes
Reference preselection	Source
Key point limit	80,000
Tie point limit	8,000
Guided image matching	No
Adaptive camera model fitting	Yes
Matching time	1 minutes 15 seconds
Matching memory usage	1.80 GB
Alignment time	28 seconds
Alignment memory usage	118.63 MB
Optimization parameters	
Parameters	f, b1, b2, cx, cy, k1-k3, p1, p2
Adaptive camera model fitting	No
Optimization time	1 seconds
Software version	1.6.4.10928
File size	14.15 MB
Depth Maps	
Count	79
Depth maps generation parameters	
Quality	High
Filtering mode	Aggressive
Processing time	8 minutes 42 seconds
Memory usage	5.05 GB
Software version	1.6.4.10928
File size	576.14 MB
Dense Point Cloud	
Points	187,458,419
Point colors	3 bands, uint8
Depth maps generation parameters	
Quality	High
Filtering mode	Aggressive
Processing time	8 minutes 42 seconds
Memory usage	5.05 GB
Dense cloud generation parameters	
Processing time	8 minutes 58 seconds

Memory usage	13.45 GB
Software version	1.6.4.10928
File size	2.72 GB
Model	
Faces	1,500,000
Vertices	761,087
Vertex colors	3 bands, uint8
Texture	4,096 x 4,096 x 10, 4 bands, uint8
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 47 seconds
UV mapping memory usage	5.24 GB
Blending time	1 minutes 49 seconds
Blending memory usage	6.55 GB
File size	349.48 MB
Tiled Model	
Texture	3 bands, uint8
Depth maps generation parameters	
Quality	High
Filtering mode	Aggressive
Processing time	8 minutes 42 seconds
Memory usage	5.05 GB
Reconstruction parameters	
Source data	Dense cloud
Tile size	256
Face count	Medium
Enable ghosting filter	No
Processing time	2 hours 27 minutes
Memory usage	4.97 GB
Software version	1.7.2.12040
File size	976.83 MB
System	
Software name	Agisoft Metashape Professional
Software version	1.7.2 build 12040
OS	Windows 64 bit
RAM	127.78 GB
CPU	Intel(R) Core(TM) i9-9900K CPU @ 3.60GHz
GPU(s)	GeForce RTX 2080