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Reconstruction uncertainty: 30
Projection accuracy: 3
Reprojection error: 0,3
Dense Cloud Confidence 2-255
Filter Component Size: 99%

02 March 2022

Survey Data

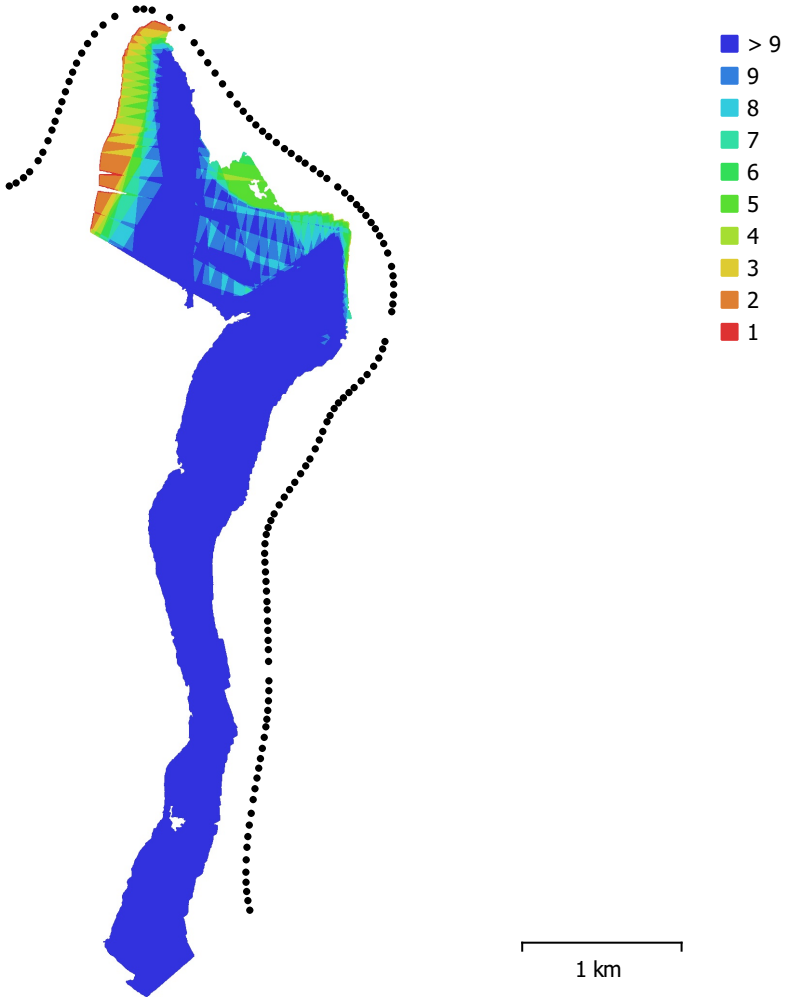

Fig. 1. Camera locations and image overlap.

Number of images:	125	Camera stations:	125
Flying altitude:	495 m	Tie points:	680,809
Ground resolution:	5.09 cm/pix	Projections:	1,750,802
Coverage area:	3.38 km²	Reprojection error:	0.211 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

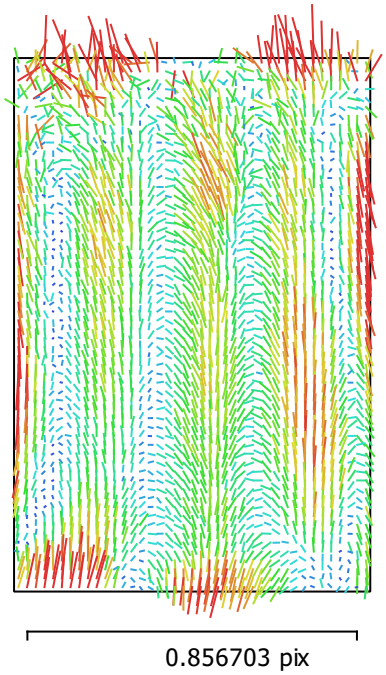

Fig. 2. Image residuals for NIKON D800 (50mm).

NIKON D800 (50mm)

125 images

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

	Value	Error	F	Cx	Cy	K1	K2	K3	P1	P2
F	**10568.1**	0.14	1.00	0.07	-0.14	-0.03	0.11	-0.10	0.07	-0.08
Cx	**11.2114**	0.26		1.00	0.09	-0.01	0.04	-0.03	0.86	0.06
Cy	**4.74682**	0.14			1.00	0.02	-0.07	0.08	0.02	0.15
K1	**-0.109826**	3e-05				1.00	-0.94	0.87	0.02	0.04
K2	**0.0853644**	0.00039					1.00	-0.98	0.02	-0.04
K3	**0.14692**	0.0016						1.00	-0.01	0.03
P1	**0.000171072**	5.3e-06							1.00	0.14
P2	**0.000423572**	2.4e-06								1.00

Table 2. Calibration coefficients and correlation matrix.

Camera Locations

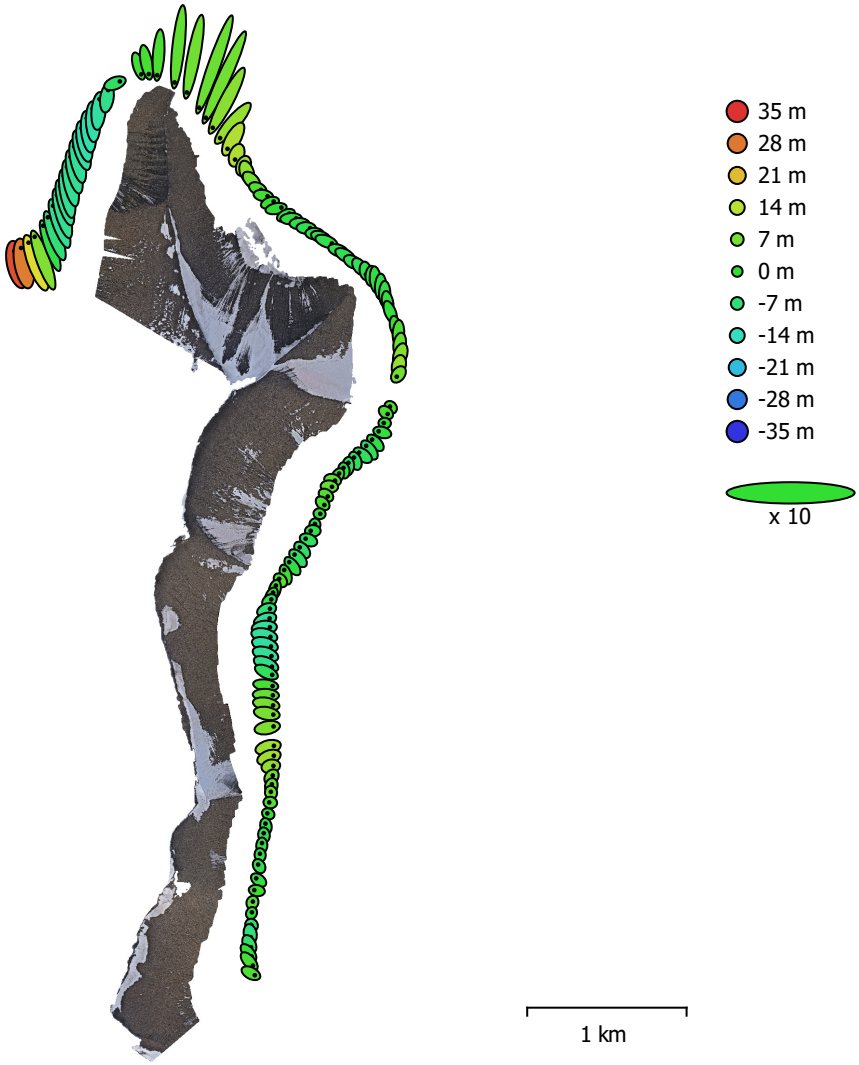

Fig. 3. Camera locations and error estimates.
Z error is represented by ellipse color. X,Y errors are represented by ellipse shape.
Estimated camera locations are marked with a black dot.

X error (m)	Y error (m)	Z error (m)	XY error (m)	Total error (m)
5.60157	13.0213	7.3602	14.1751	15.972

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

Digital Elevation Model

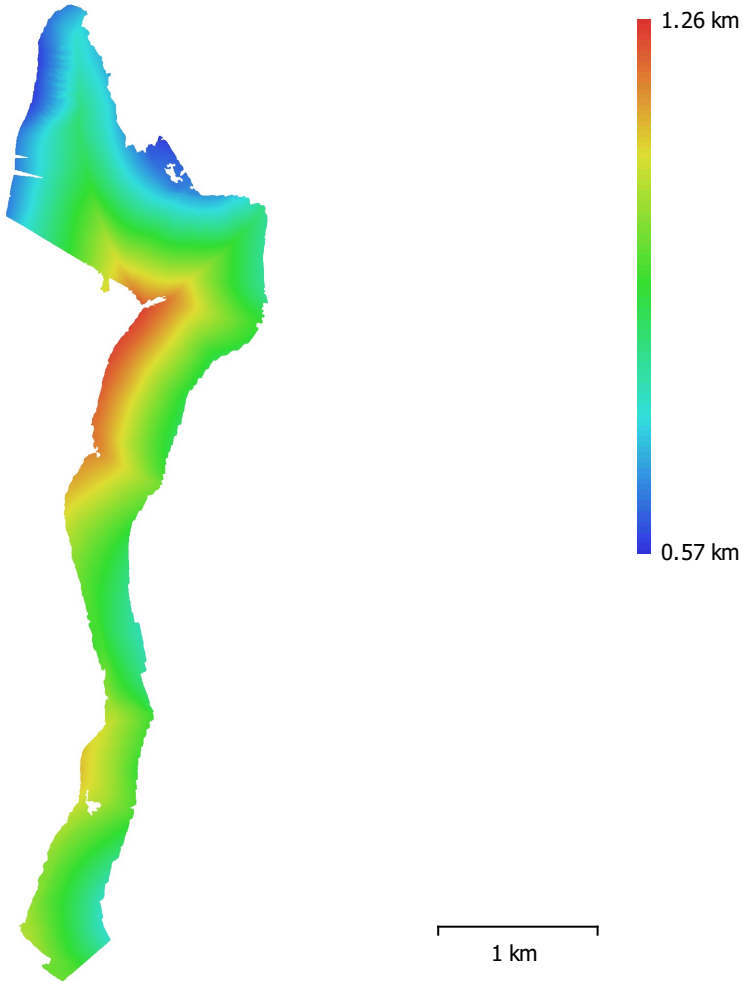

Fig. 4. Reconstructed digital elevation model.

Resolution:	23.7 cm/pix
Point density:	17.8 points/m²

Processing Parameters

General	
Cameras	125
Aligned cameras	125
Coordinate system	WGS 84 (EPSG::4326)
Rotation angles	Yaw, Pitch, Roll
Point Cloud	
Points	680,809 of 849,827
RMS reprojection error	0.110772 (0.210674 pix)
Max reprojection error	0.299998 (4.01098 pix)
Mean key point size	1.86737 pix
Point colors	3 bands, uint8
Key points	No
Average tie point multiplicity	2.65391
Alignment parameters	
Accuracy	Highest
Generic preselection	Yes
Reference preselection	No
Key point limit	60,000
Tie point limit	0
Exclude stationary tie points	Yes
Guided image matching	No
Adaptive camera model fitting	No
Matching time	9 minutes 56 seconds
Matching memory usage	461.02 MB
Alignment time	2 minutes 44 seconds
Alignment memory usage	220.91 MB
Optimization parameters	
Parameters	f, cx, cy, k1-k3, p1, p2
Adaptive camera model fitting	No
Optimization time	5 seconds
Software version	1.7.2.12040
File size	52.44 MB
Depth Maps	
Count	125
Depth maps generation parameters	
Quality	Medium
Filtering mode	Mild
Processing time	5 minutes 43 seconds
Memory usage	1.05 GB
Software version	1.7.2.12040
File size	355.85 MB
Dense Point Cloud	
Points	101,985,721
Point colors	3 bands, uint8
Depth maps generation parameters	
Quality	Medium
Filtering mode	Mild
Processing time	5 minutes 43 seconds
Memory usage	1.05 GB
Dense cloud generation parameters	

Processing time	39 minutes 35 seconds
Memory usage	4.32 GB
Software version	1.7.2.12040
File size	1.74 GB
Model	
Faces	5,429,627
Vertices	2,726,764
Vertex colors	3 bands, uint8
Texture	4,096 x 4,096 x 10, 4 bands, uint8
Depth maps generation parameters	
Quality	Medium
Filtering mode	Mild
Processing time	5 minutes 43 seconds
Memory usage	1.05 GB
Reconstruction parameters	
Surface type	Arbitrary
Source data	Dense cloud
Interpolation	Enabled
Strict volumetric masks	No
Processing time	33 minutes 31 seconds
Memory usage	45.87 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 5 seconds
UV mapping memory usage	3.75 GB
Blending time	5 minutes 30 seconds
Blending memory usage	7.02 GB
Software version	1.7.2.12040
File size	500.25 MB
Tiled Model	
Texture	3 bands, uint8
Depth maps generation parameters	
Quality	Medium
Filtering mode	Mild
Processing time	5 minutes 43 seconds
Memory usage	1.05 GB
Reconstruction parameters	
Source data	Dense cloud
Tile size	256
Face count	Medium
Enable ghosting filter	No
Processing time	2 hours 41 minutes
Memory usage	7.06 GB
Software version	1.7.2.12040
File size	2.67 GB
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) i9-10900 CPU @ 2.80GHz
GPU(s)	NVIDIA GeForce RTX 2080 SUPER