

Braganzatoppen

Reconstruction uncertainty 30

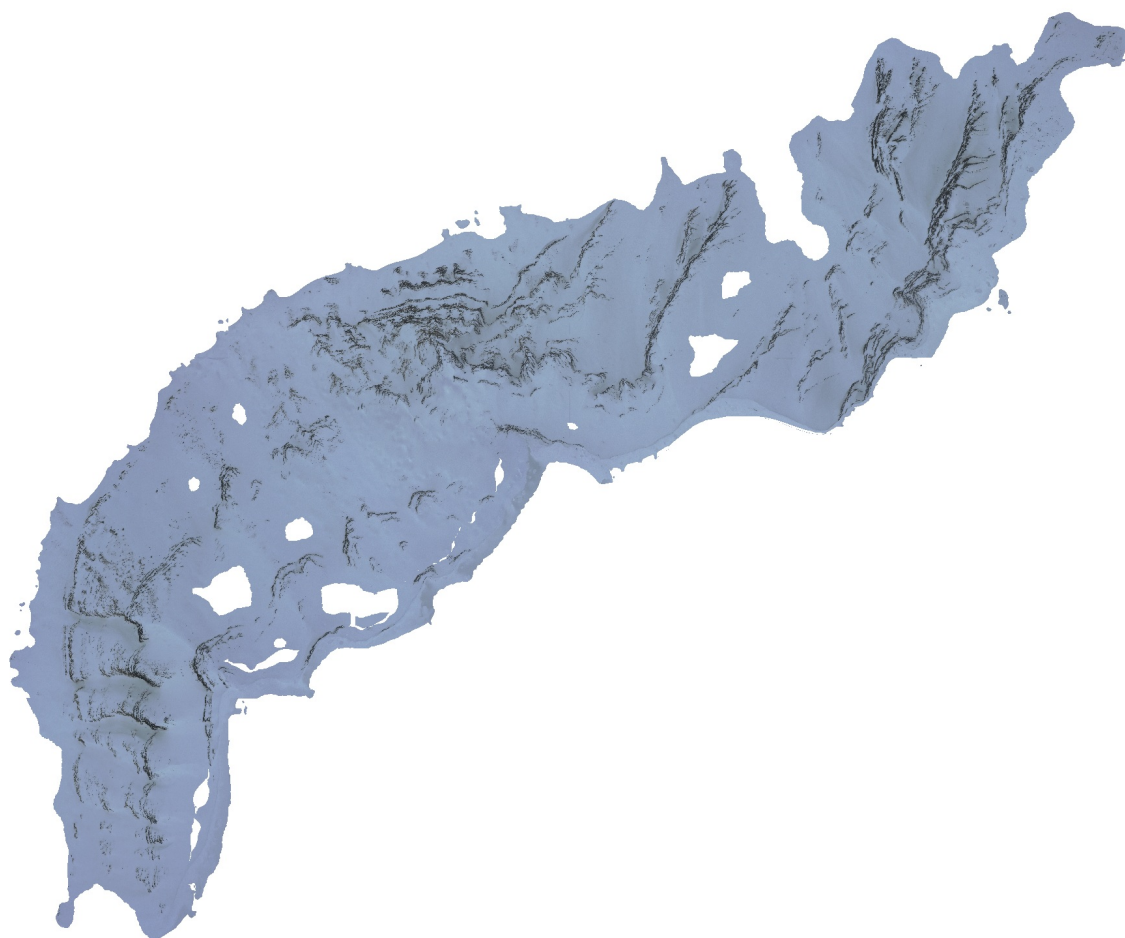
Projection accuracy 3

Reprojection error 0.3

Dense Cloud Confidence 2-255

Filter component size 99%

16 March 2022



Survey Data

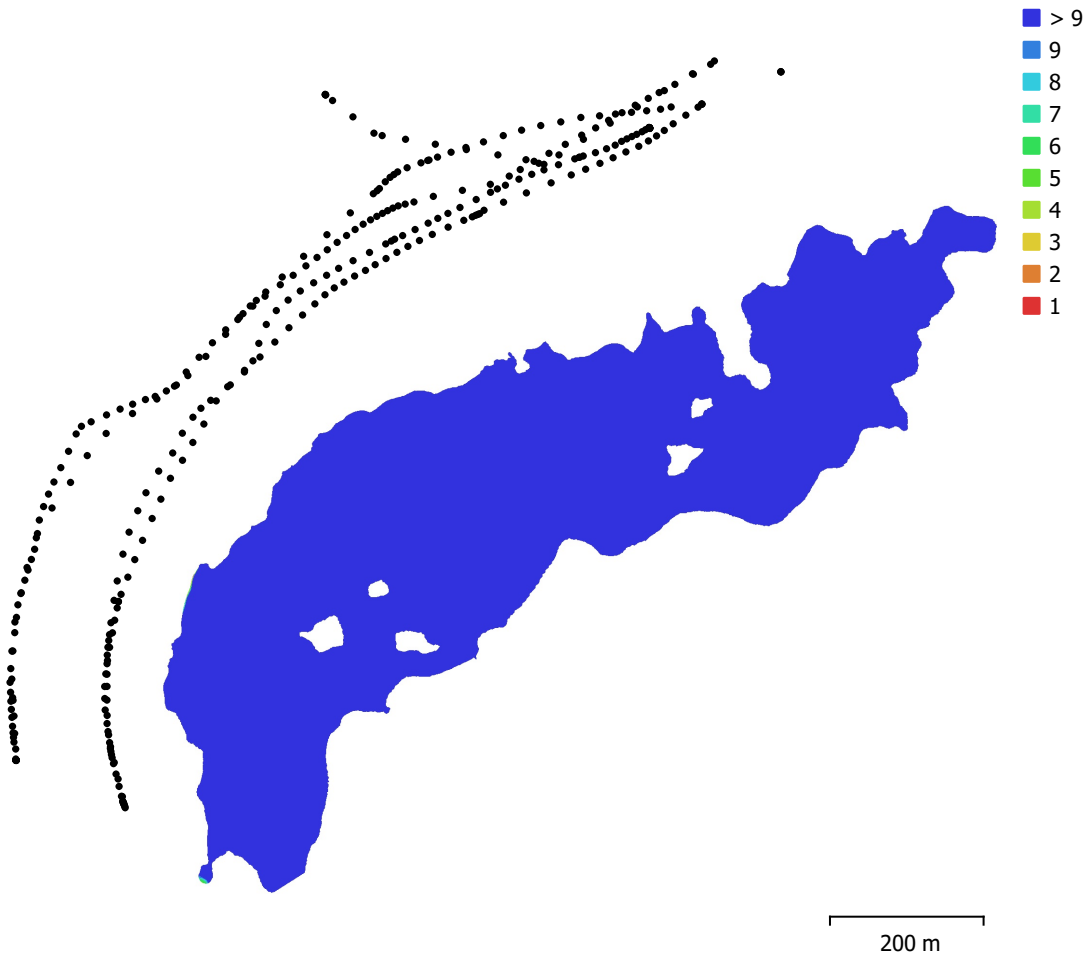


Fig. 1. Camera locations and image overlap.

Number of images:	341	Camera stations:	341
Flying altitude:	357 m	Tie points:	108,644
Ground resolution:	8.01 cm/pix	Projections:	306,137
Coverage area:	0.316 km ²	Reprojection error:	0.233 pix

Camera Model	Resolution	Focal Length	Pixel Size	Precalibrated
Test_Pro (10.26mm)	5472 x 3648	10.26 mm	2.41 x 2.41 μ m	No

Table 1. Cameras.

Camera Calibration

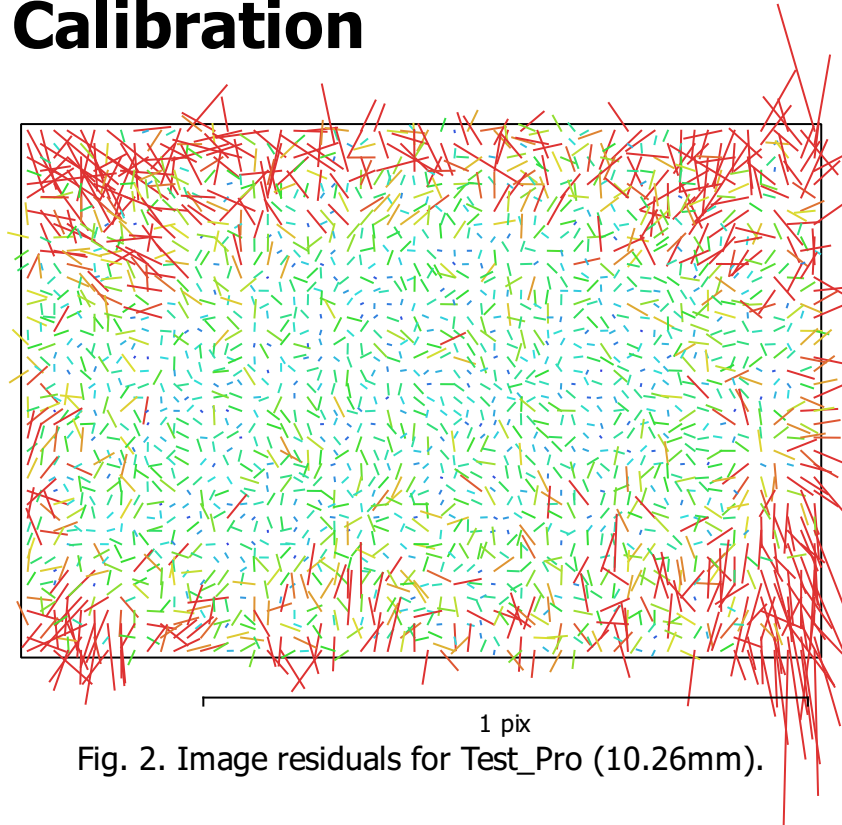


Fig. 2. Image residuals for Test_Pro (10.26mm).

Test_Pro (10.26mm)

341 images

Type	Resolution	Focal Length	Pixel Size
Frame	5472 x 3648	10.26 mm	2.41 x 2.41 μm

	Value	Error	F	Cx	Cy	K1	K2	K3	P1	P2
F	4350.42	0.05	1.00	-0.01	-0.17	-0.08	0.14	-0.12	0.01	0.12
Cx	23.851	0.12		1.00	0.01	-0.02	-0.00	0.01	0.96	-0.01
Cy	-49.264	0.081			1.00	-0.05	0.04	-0.04	0.00	0.76
K1	0.00505955	3e-05				1.00	-0.94	0.88	-0.02	-0.09
K2	0.0396902	0.00013					1.00	-0.98	-0.00	0.05
K3	-0.0384557	0.00017						1.00	0.01	-0.05
P1	0.000780545	8.2e-06							1.00	0.01
P2	-0.00371827	4.7e-06								1.00

Table 2. Calibration coefficients and correlation matrix.

Camera Locations

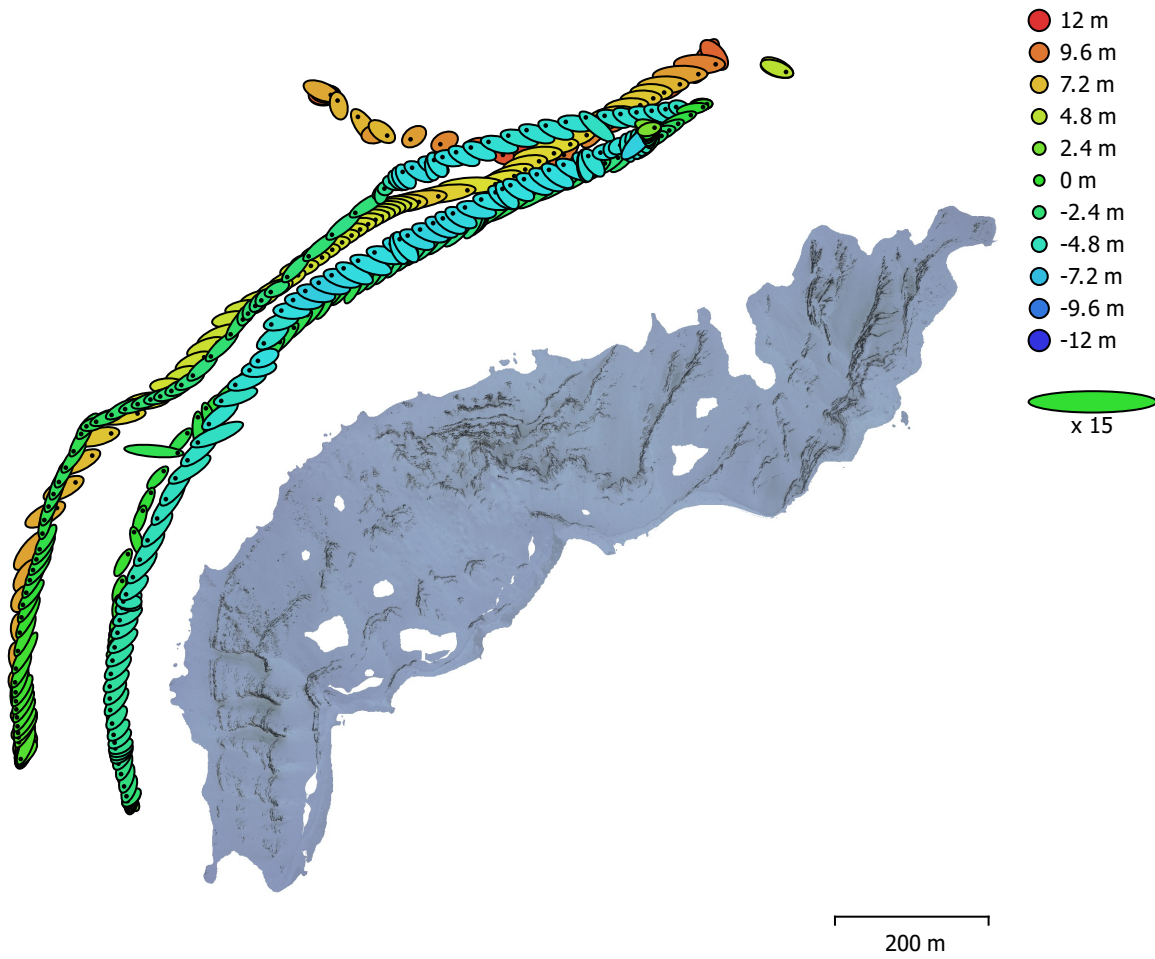


Fig. 3. Camera locations and error estimates.

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)
1.50479	1.14561	4.84871	1.89125	5.20449

Table 3. Average camera location error.

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

Digital Elevation Model

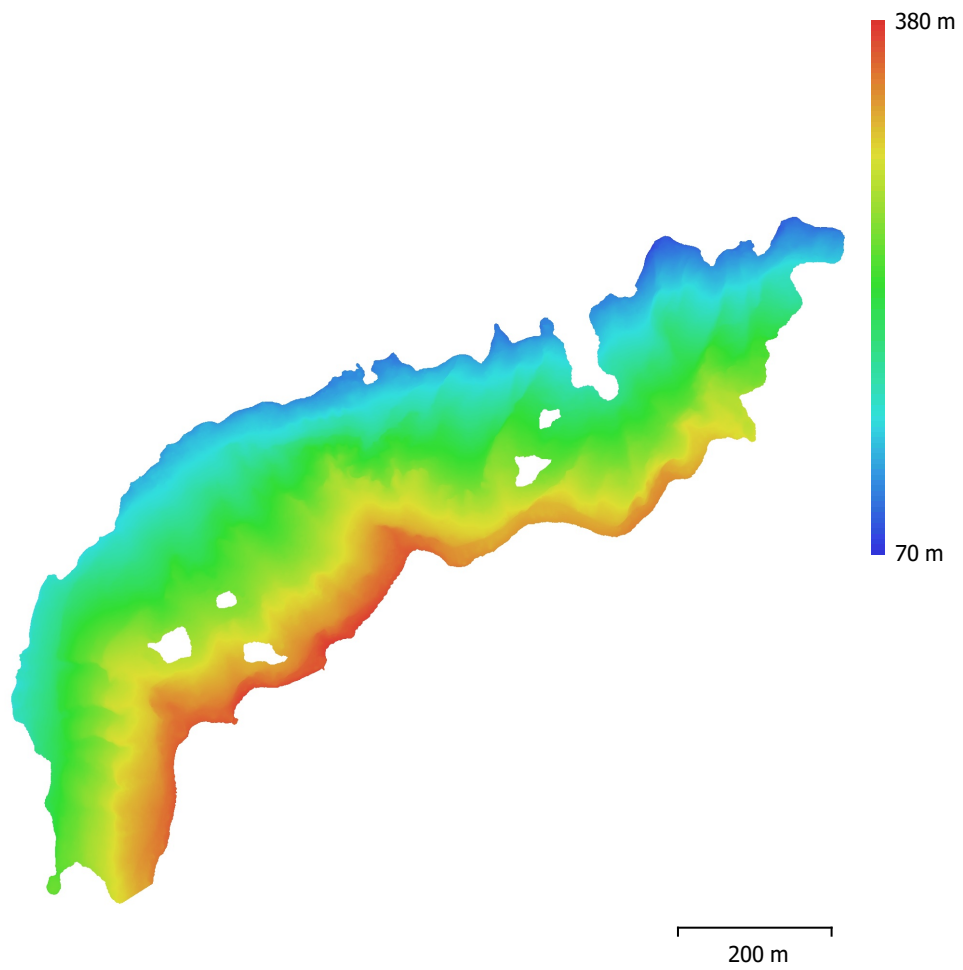


Fig. 4. Reconstructed digital elevation model.

Resolution: 32 cm/pix
Point density: 9.75 points/m²

Processing Parameters

General

Cameras	341
Aligned cameras	341
Coordinate system	WGS 84 (EPSG::4326)
Rotation angles	Yaw, Pitch, Roll

Point Cloud

Points	108,644 of 444,106
RMS reprojection error	0.140017 (0.232516 pix)
Max reprojection error	0.299998 (1.2199 pix)
Mean key point size	1.6184 pix
Point colors	3 bands, uint8
Key points	No
Average tie point multiplicity	6.78905

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	45 minutes 34 seconds
Matching memory usage	587.44 MB
Alignment time	9 minutes 50 seconds
Alignment memory usage	304.37 MB
Software version	1.7.2.12040
File size	78.60 MB

Depth Maps

Count	341
Depth maps generation parameters	
Quality	Medium
Filtering mode	Mild
Processing time	11 minutes 16 seconds
Memory usage	866.01 MB
Software version	1.7.2.12040
File size	304.64 MB

Dense Point Cloud

Points	4,208,910
Point colors	3 bands, uint8
Depth maps generation parameters	
Quality	Medium
Filtering mode	Mild
Processing time	11 minutes 16 seconds
Memory usage	866.01 MB
Dense cloud generation parameters	
Processing time	25 minutes 47 seconds
Memory usage	6.08 GB
Software version	1.7.2.12040
File size	82.63 MB

Model

Faces	261,506
Vertices	133,017
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	11 minutes 16 seconds
Memory usage	866.01 MB

Reconstruction parameters

Surface type	Arbitrary
Source data	Dense cloud
Interpolation	Enabled
Strict volumetric masks	No
Processing time	1 minutes 37 seconds
Memory usage	2.16 GB

Texturing parameters

Mapping mode	Generic
Blending mode	Mosaic
Texture size	4,096
Enable hole filling	Yes
Enable ghosting filter	Yes
UV mapping time	1 minutes 59 seconds
UV mapping memory usage	3.26 GB
Blending time	25 minutes 8 seconds
Blending memory usage	5.20 GB
Software version	1.7.2.12040
File size	176.60 MB

Tiled Model

Texture	3 bands, uint8
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Depth maps generation parameters

Quality	Medium
Filtering mode	Mild
Processing time	11 minutes 16 seconds
Memory usage	866.01 MB

Reconstruction parameters

Source data	Dense cloud
Tile size	256
Face count	Medium
Enable ghosting filter	No
Processing time	1 hours 3 minutes
Memory usage	2.70 GB
Software version	1.7.2.12040
File size	100.44 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