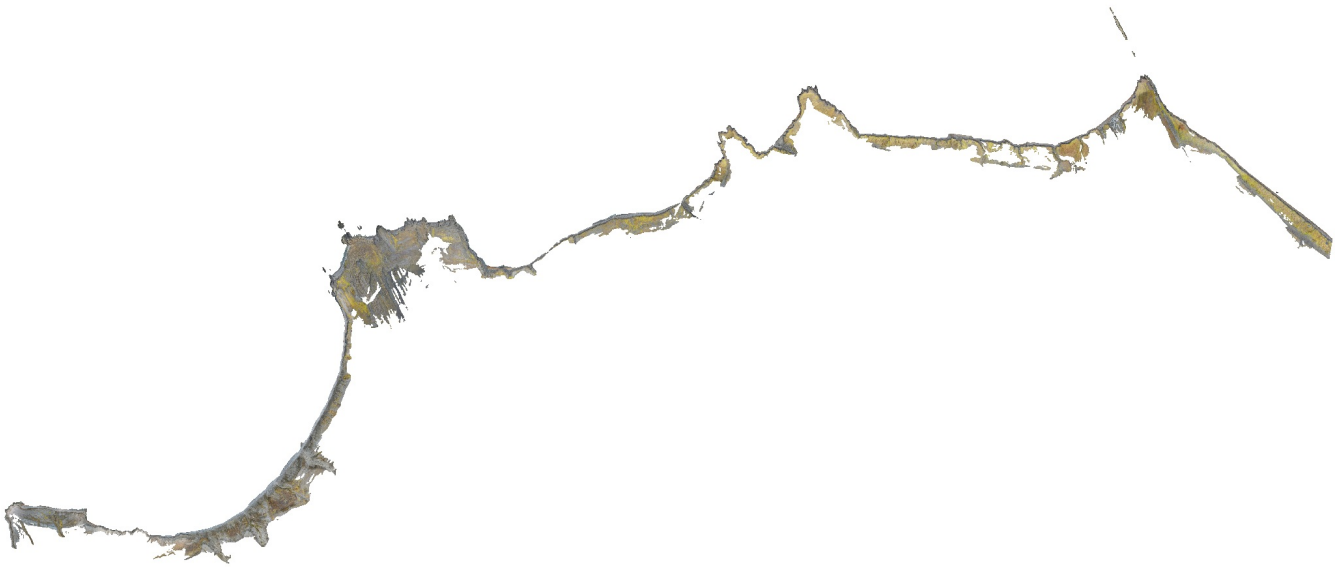


Festningen Geotope

Processing Report
19 December 2021



Survey Data

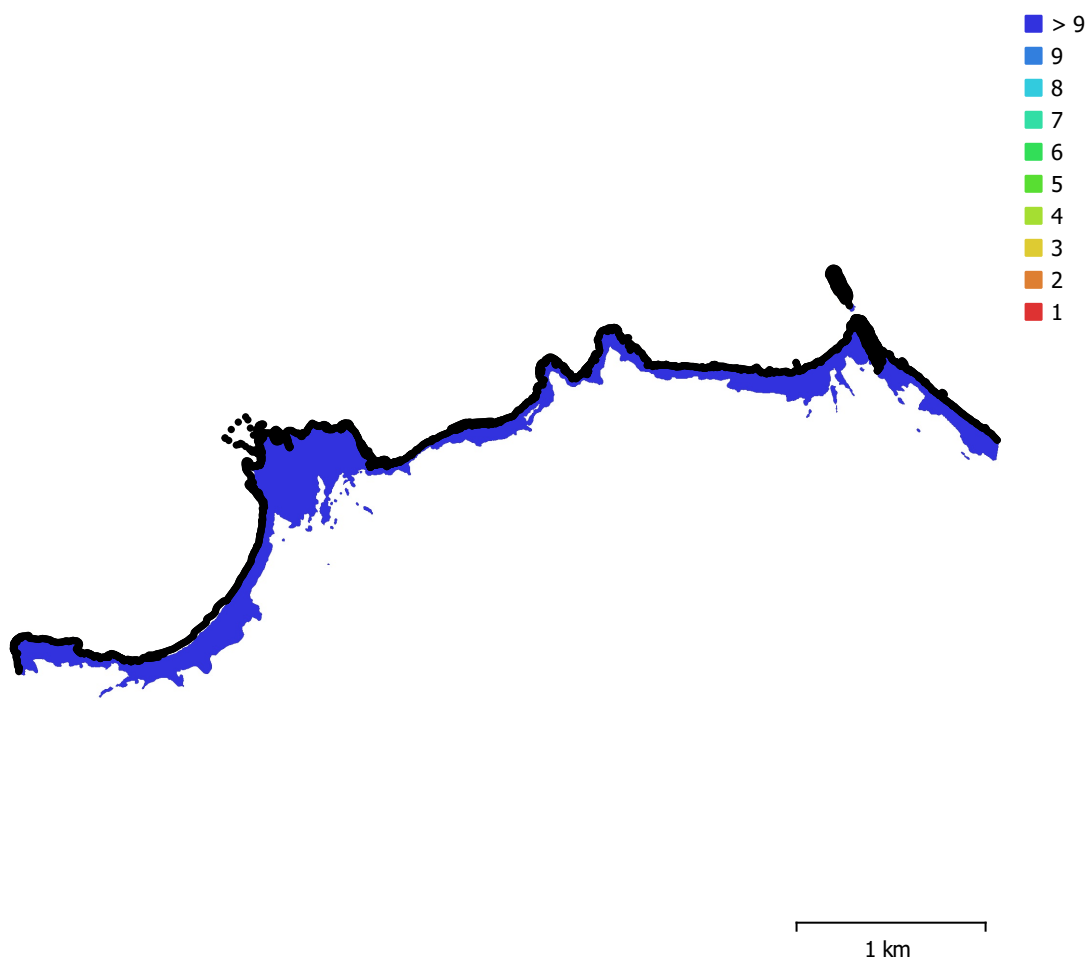


Fig. 1. Camera locations and image overlap.

Number of images:	3,768	Camera stations:	3,762
Flying altitude:	27.5 m	Tie points:	3,124,668
Ground resolution:	7.01 mm/pix	Projections:	8,718,945
Coverage area:	0.783 km ²	Reprojection error:	0.22 pix

Camera Model	Resolution	Focal Length	Pixel Size	Precalibrated
L1D-20c (10.26mm)	5472 x 3648	10.26 mm	2.41 x 2.41 μ m	No

Table 1. Cameras.

Camera Calibration

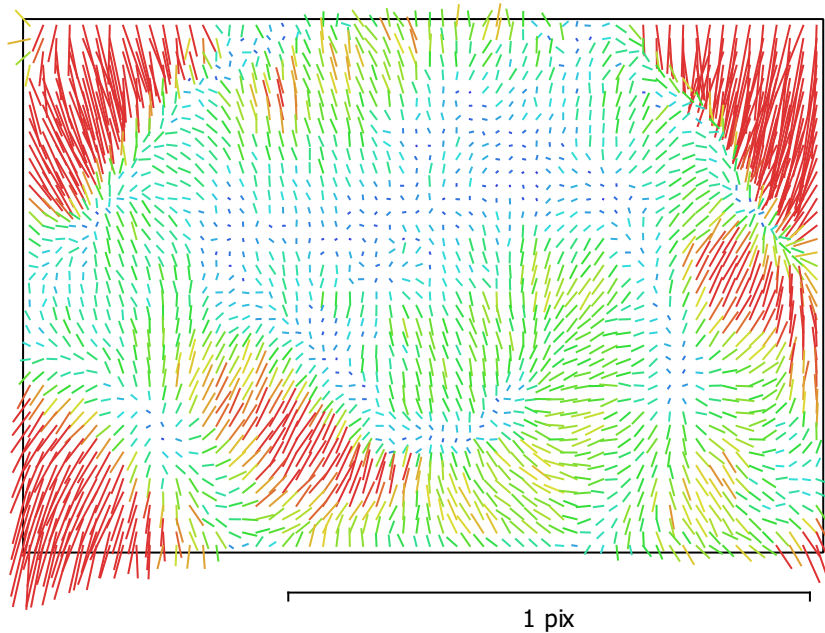


Fig. 2. Image residuals for L1D-20c (10.26mm).

L1D-20c (10.26mm)

3768 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	4337.74	0.018	1.00	0.02	-0.63	-0.01	0.07	-0.07	0.03	-0.19
Cx	23.7716	0.022		1.00	0.04	0.01	-0.00	0.00	0.88	0.04
Cy	-44.4961	0.023			1.00	-0.06	0.02	-0.02	0.04	0.51
K1	0.0026044	6.3e-06				1.00	-0.95	0.88	0.01	-0.10
K2	0.00854722	2.9e-05					1.00	-0.98	-0.00	0.03
K3	-0.0126836	4e-05						1.00	0.00	-0.04
P1	0.00148741	1.4e-06							1.00	0.05
P2	-0.00255323	7.2e-07								1.00

Table 2. Calibration coefficients and correlation matrix.

Camera Locations

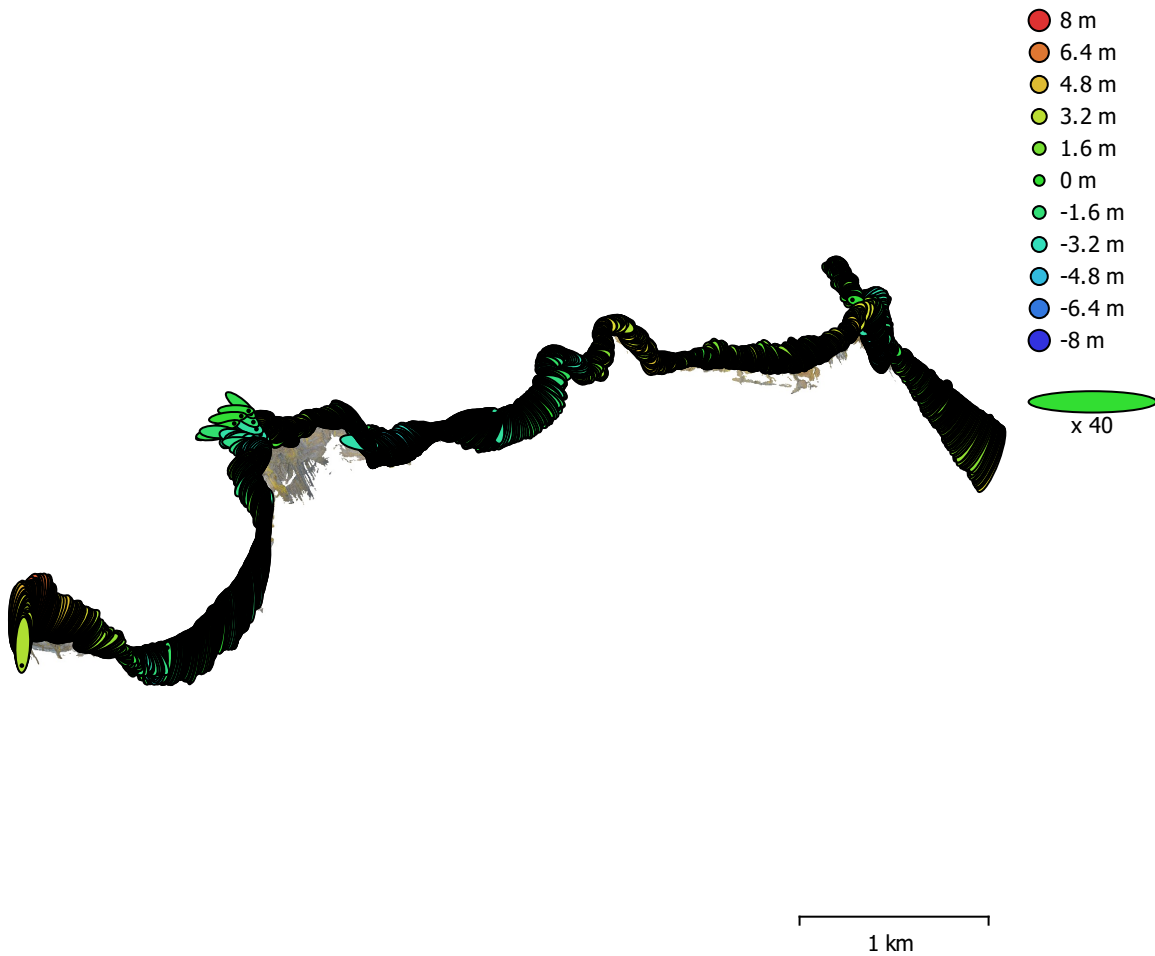


Fig. 3. Camera locations and error estimates.

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)
1.27501	2.35802	2.35591	2.68066	3.56879

Table 3. Average camera location error.

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

Digital Elevation Model

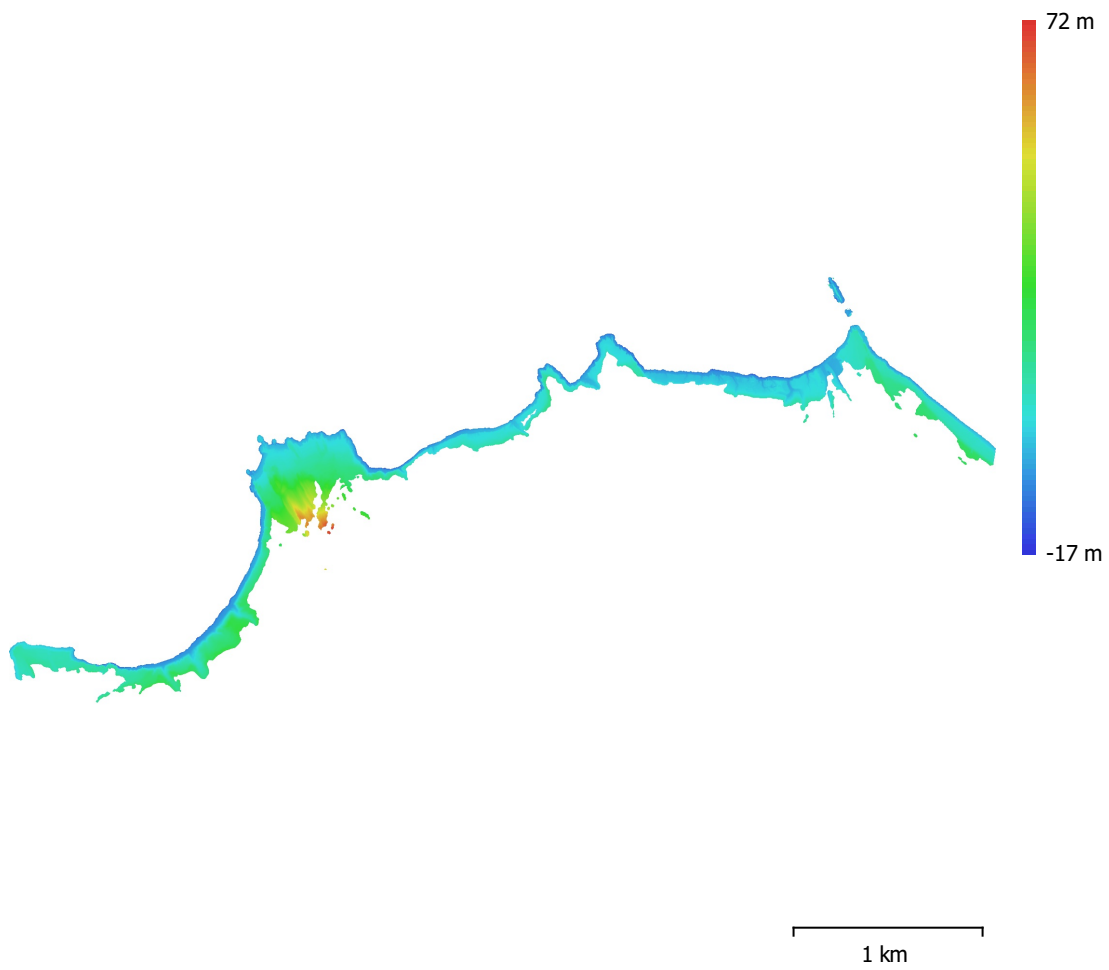


Fig. 4. Reconstructed digital elevation model.

Resolution: 22.1 cm/pix
Point density: 20.4 points/m²

Processing Parameters

General

Cameras	3768
Aligned cameras	3762
Coordinate system	WGS 84 (EPSG::4326)
Rotation angles	Yaw, Pitch, Roll

Point Cloud

Points	3,124,668 of 19,481,692
RMS reprojection error	0.129996 (0.220443 pix)
Max reprojection error	1.0931 (3.09709 pix)
Mean key point size	1.62707 pix
Point colors	3 bands, uint8
Key points	No
Average tie point multiplicity	3.92327

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	6 minutes 15 seconds
Matching memory usage	6.49 GB
Alignment time	1 hours 57 minutes
Alignment memory usage	6.86 GB

Optimization parameters

Parameters	f, cx, cy, k1-k3, p1, p2
Adaptive camera model fitting	No
Optimization time	1 minutes 51 seconds
Software version	1.7.2.12040
File size	1.26 GB

Depth Maps

Count	3708
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Depth maps generation parameters

Quality	High
Filtering mode	Mild
Processing time	0 seconds
Memory usage	4.59 GB
Software version	1.7.2.12040
File size	24.26 GB

Dense Point Cloud

Points	1,711,752,687
Point colors	3 bands, uint8

Depth maps generation parameters

Quality	High
Filtering mode	Mild
Processing time	0 seconds
Memory usage	4.59 GB

Dense cloud generation parameters

Processing time	50 minutes 25 seconds
Memory usage	27.01 GB
Software version	1.7.2.12040
File size	34.38 GB
Model	
Faces	30,285,588
Vertices	15,156,901
Vertex colors	3 bands, uint8
Texture	4,096 x 4,096 x 50, 4 bands, uint8
Depth maps generation parameters	
Quality	High
Filtering mode	Mild
Processing time	0 seconds
Memory usage	4.59 GB
Reconstruction parameters	
Surface type	Arbitrary
Source data	Dense cloud
Interpolation	Enabled
Strict volumetric masks	No
Processing time	2 hours 11 minutes
Memory usage	6.87 GB
Texturing parameters	
Mapping mode	Generic
Blending mode	Mosaic
Texture size	4,096
Enable hole filling	Yes
Enable ghosting filter	Yes
UV mapping time	26 minutes 24 seconds
UV mapping memory usage	21.19 GB
Blending time	4 hours 4 minutes
Blending memory usage	59.82 GB
Software version	1.7.2.12040
File size	2.18 GB
Tiled Model	
Texture	3 bands, uint8
Depth maps generation parameters	
Quality	High
Filtering mode	Mild
Processing time	0 seconds
Memory usage	4.59 GB
Reconstruction parameters	
Source data	Dense cloud
Tile size	256
Face count	High
Enable ghosting filter	No
Processing time	3 days 0 hours
Memory usage	64.87 GB
Software version	1.7.2.12040
File size	40.47 GB
System	
Software name	Agisoft Metashape Professional
Software version	1.7.2 build 12040
OS	Windows 64 bit
RAM	127.71 GB
CPU	Intel(R) Xeon(R) Gold 5122 CPU @ 3.60GHz
GPU(s)	Quadro P5000