

Agardhbukta_processing_report

Processing Report
19 February 2021



Survey Data

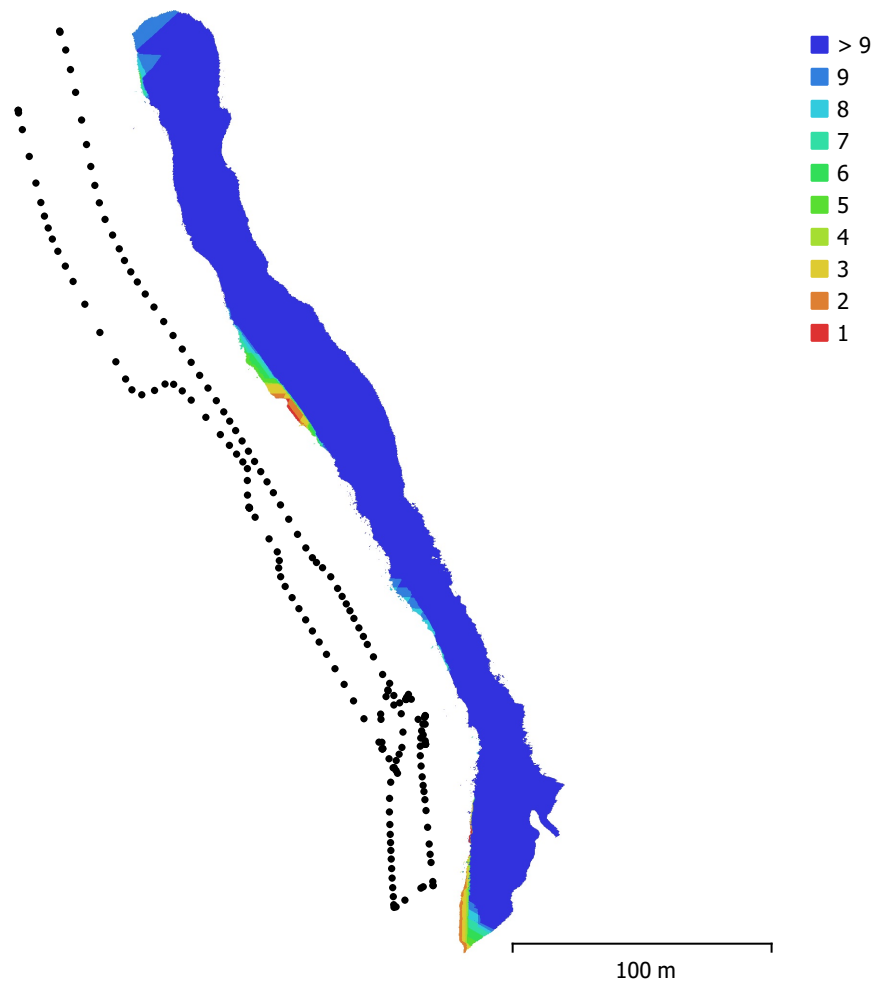


Fig. 1. Camera locations and image overlap.

Number of images:	190	Camera stations:	190
Flying altitude:	43.3 m	Tie points:	66,494
Ground resolution:	9.09 mm/pix	Projections:	506,526
Coverage area:	9.07e+03 m ²	Reprojection error:	1.21 pix

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

Table 1. Cameras.

Camera Calibration

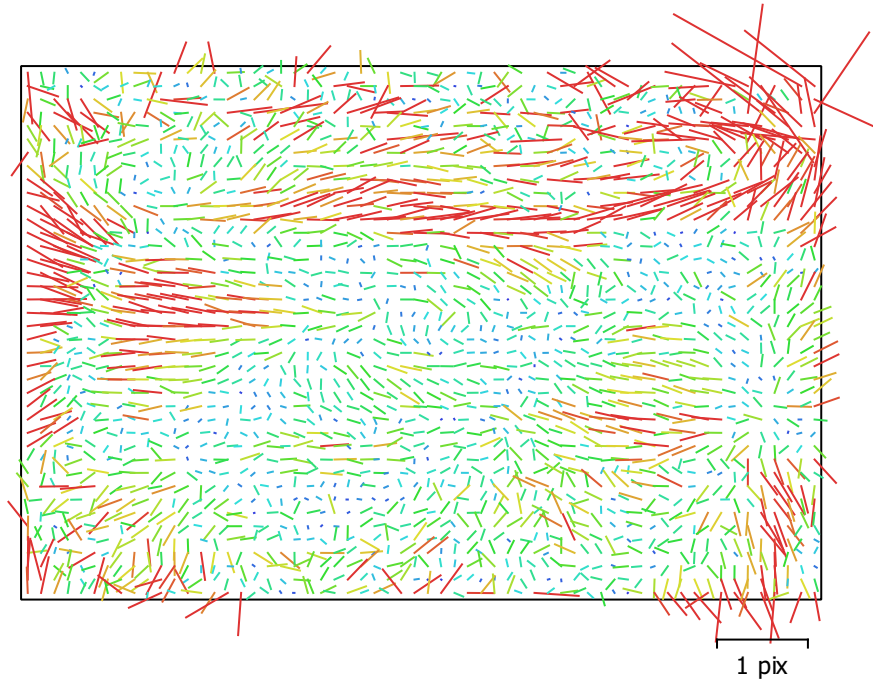


Fig. 2. Image residuals for L1D-20c (10.26mm).

L1D-20c (10.26mm)

190 images

Type
Frame

Resolution
5472 x 3648

Focal Length
10.26 mm

Pixel Size
2.41 x 2.41 μm

	Value	Error	F	Cx	Cy	K1	K2	K3	P1	P2
F	4363.85	0.15	1.00	-0.01	-0.03	-0.01	0.16	-0.15	-0.07	0.30
Cx	-17.811	0.35		1.00	0.12	0.01	0.02	-0.02	0.95	0.24
Cy	-37.1031	0.19			1.00	0.02	0.04	-0.04	0.11	0.57
K1	0.00617335	7.4e-05				1.00	-0.95	0.89	-0.00	0.02
K2	0.039639	0.00033					1.00	-0.98	0.01	0.08
K3	-0.0442939	0.00044						1.00	-0.01	-0.10
P1	-0.00460497	2.1e-05							1.00	0.20
P2	-0.00280802	6.5e-06								1.00

Table 2. Calibration coefficients and correlation matrix.

Camera Locations

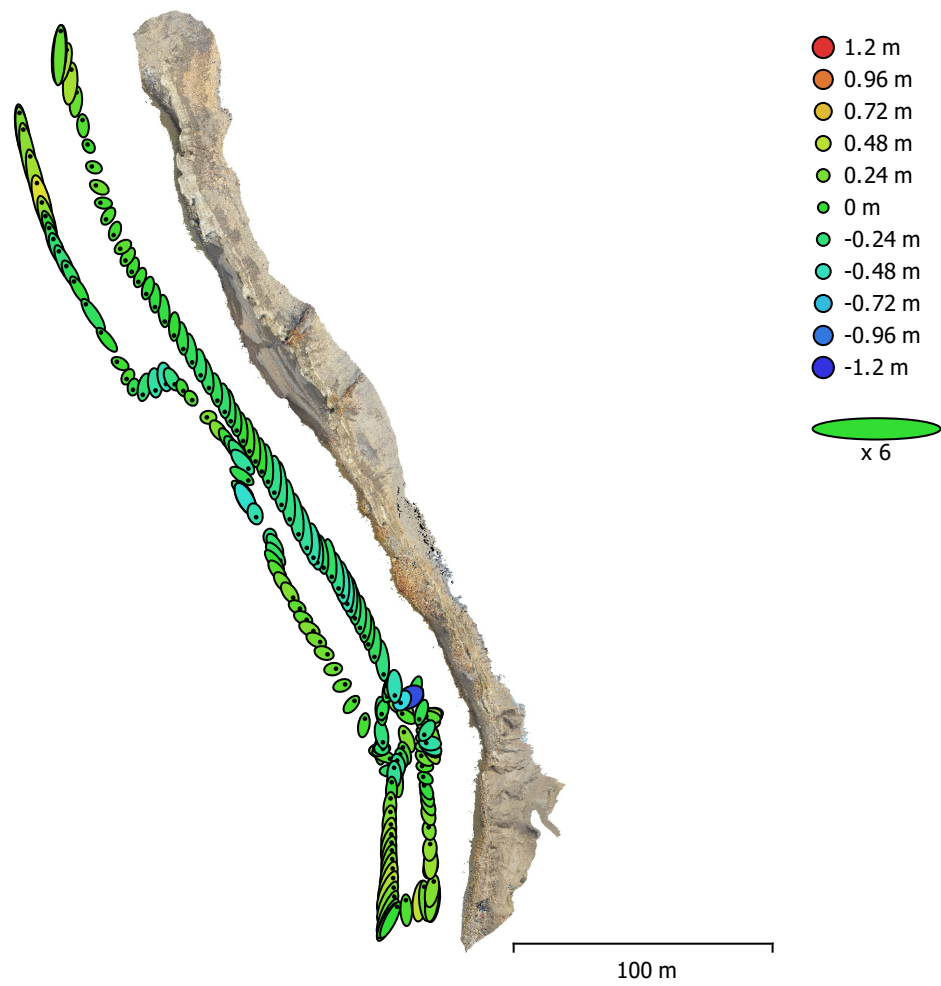


Fig. 3. Camera locations and error estimates.

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)
0.420721	1.25269	0.262993	1.32145	1.34737

Table 3. Average camera location error.

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

Digital Elevation Model

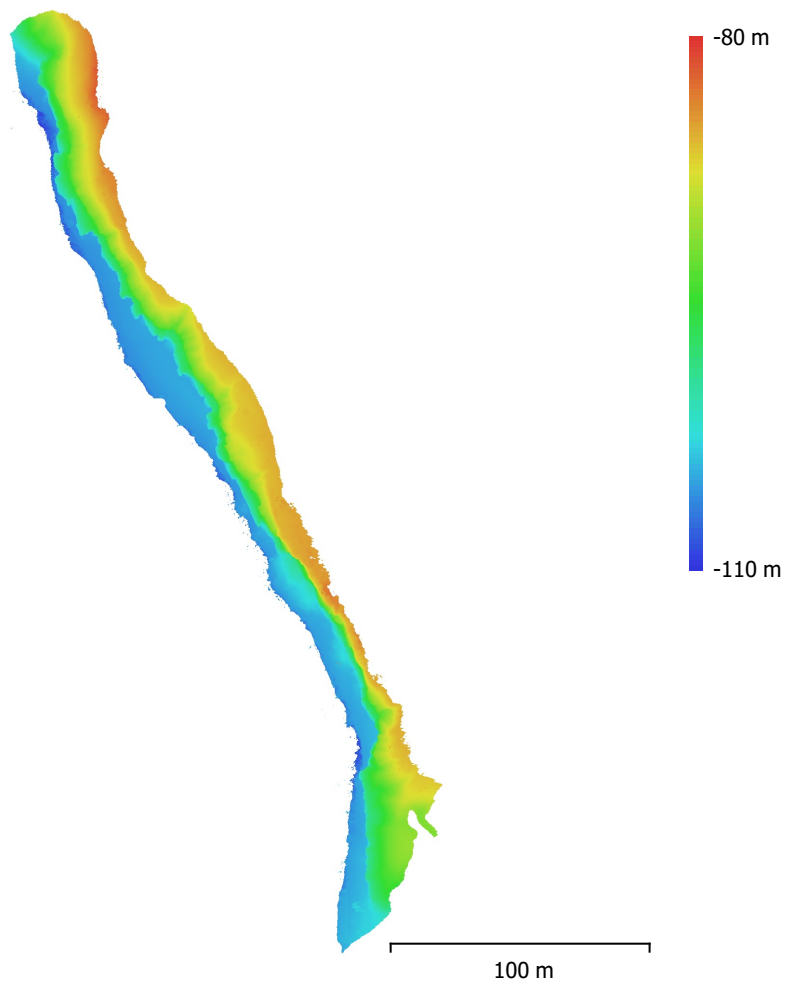


Fig. 4. Reconstructed digital elevation model.

Resolution: 3.63 cm/pix
Point density: 757 points/m²

Processing Parameters

General

Cameras	190
Aligned cameras	190
Coordinate system	WGS 84 (EPSG::4326)
Rotation angles	Yaw, Pitch, Roll

Point Cloud

Points	66,494 of 90,683
RMS reprojection error	0.347004 (1.2076 pix)
Max reprojection error	1.39396 (18.7124 pix)
Mean key point size	3.33899 pix
Point colors	3 bands, uint8
Key points	No
Average tie point multiplicity	9.31254

Alignment parameters

Accuracy	High
Generic preselection	Yes
Reference preselection	Source
Key point limit	40,000
Tie point limit	4,000
Guided image matching	No
Adaptive camera model fitting	No
Matching time	23 minutes 3 seconds
Matching memory usage	711.16 MB
Alignment time	2 minutes 34 seconds
Alignment memory usage	134.10 MB

Optimization parameters

Parameters	f, cx, cy, k1-k3, p1, p2
Adaptive camera model fitting	No
Optimization time	9 seconds
Software version	1.6.1.10009
File size	14.69 MB

Depth Maps

Count	190
Depth maps generation parameters	
Quality	Medium
Filtering mode	Mild
Processing time	45 minutes 45 seconds
Memory usage	1.12 GB
Software version	1.6.1.10009
File size	266.83 MB

Dense Point Cloud

Points	21,482,038
Point colors	3 bands, uint8
Depth maps generation parameters	
Quality	Medium
Filtering mode	Mild
Processing time	45 minutes 45 seconds
Memory usage	1.12 GB
Dense cloud generation parameters	
Processing time	31 minutes 31 seconds

Memory usage	3.51 GB
Software version	1.6.1.10009
File size	281.94 MB
Model	
Faces	1,566,754
Vertices	793,152
Vertex colors	3 bands, uint8
Texture	4,096 x 4,096, 4 bands, uint8
Depth maps generation parameters	
Quality	Medium
Filtering mode	Mild
Processing time	45 minutes 45 seconds
Memory usage	1.12 GB
Reconstruction parameters	
Surface type	Arbitrary
Source data	Dense cloud
Interpolation	Enabled
Strict volumetric masks	No
Processing time	12 minutes 20 seconds
Memory usage	12.00 GB
Texturing parameters	
Mapping mode	Generic
Blending mode	Mosaic
Texture size	4,096
Enable hole filling	Yes
Enable ghosting filter	Yes
UV mapping time	5 minutes 31 seconds
Blending time	9 minutes 19 seconds
Software version	1.6.1.10009
File size	101.43 MB
Tiled Model	
Texture	3 bands, uint8
Depth maps generation parameters	
Quality	Medium
Filtering mode	Mild
Processing time	45 minutes 45 seconds
Memory usage	1.12 GB
Reconstruction parameters	
Source data	Dense cloud
Tile size	256
Face count	High
Enable ghosting filter	Yes
Processing time	15 hours 35 minutes
Memory usage	17.54 GB
Software version	1.6.1.10009
File size	1.71 GB
System	
Software name	Agisoft Metashape Professional
Software version	1.7.1 build 11797
OS	Windows 64 bit
RAM	127.78 GB
CPU	Intel(R) Core(TM) i9-9900K CPU @ 3.60GHz
GPU(s)	GeForce RTX 2080