

# Agisoft Metashape Report

Processing Report  
15 December 2021



# Survey Data

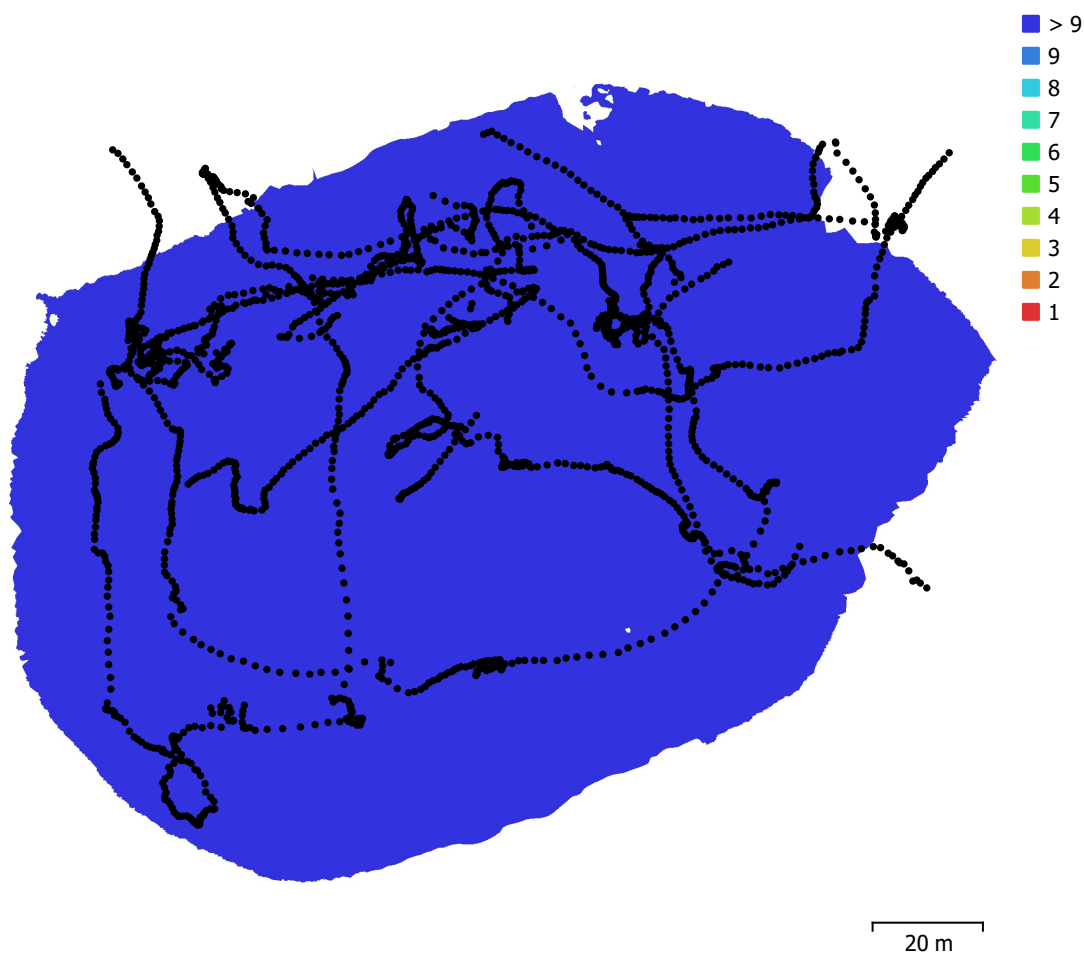


Fig. 1. Camera locations and image overlap.

Number of images:	2,359	Camera stations:	2,052
Flying altitude:	22 m	Tie points:	792,160
Ground resolution:	1.95 cm/pix	Projections:	2,422,168
Coverage area:	0.018 km <sup>2</sup>	Reprojection error:	1.17 pix

Camera Model	Resolution	Focal Length	Pixel Size	Precalibrated
unknown	1920 x 1080	unknown	unknown	Yes

Table 1. Cameras.

# Camera Calibration

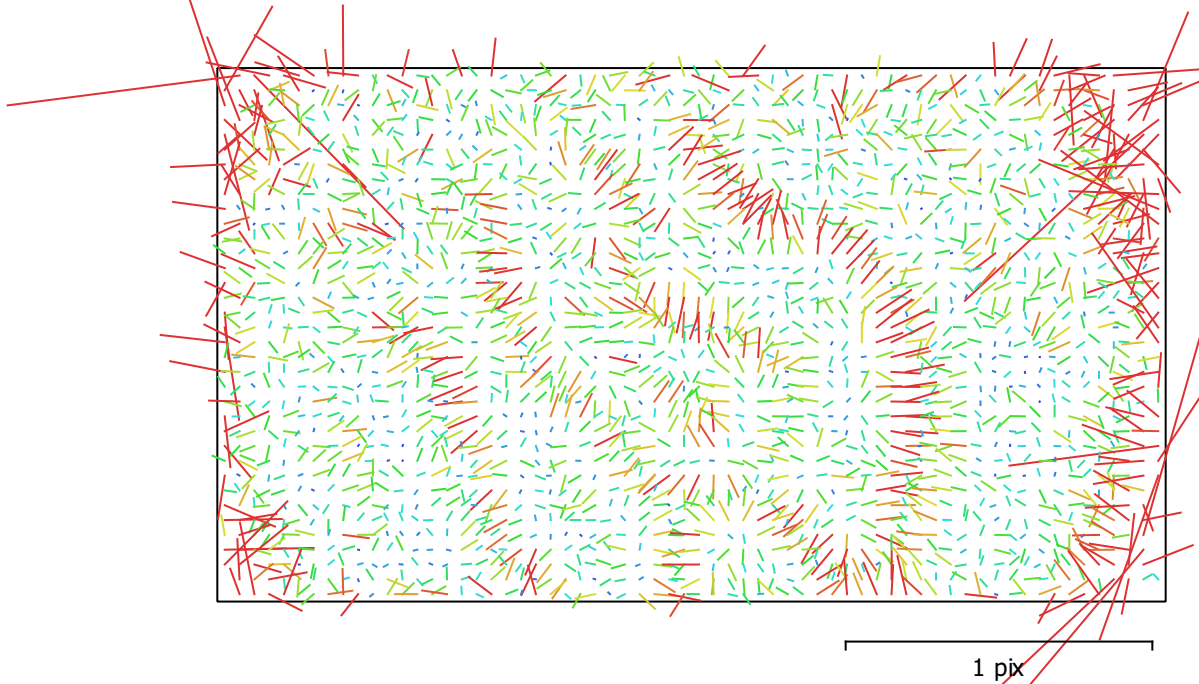


Fig. 2. Image residuals for unknown.

## unknown

2359 images, precalibrated

Type	Resolution	Focal Length	Pixel Size
<b>Frame</b>	<b>1920 x 1080</b>	<b>unknown</b>	<b>unknown</b>

	Value	Error	K1	K2	P1	P2
<b>F</b>	<b>1189.15</b>					
<b>Cx</b>	<b>-37.5914</b>					
<b>Cy</b>	<b>-15.3894</b>					
<b>B1</b>	<b>4.23376</b>					
<b>B2</b>	<b>-2.29873</b>					
<b>K3</b>	<b>-0.016046</b>					
<b>K1</b>	<b>-0.221596</b>	7.2e-05	1.00	-0.88	-0.06	-0.18
<b>K2</b>	<b>0.141635</b>	7.7e-05		1.00	0.05	0.05
<b>P1</b>	<b>0.000518592</b>	1.3e-05			1.00	-0.01
<b>P2</b>	<b>0.000681079</b>	1.4e-05				1.00

Table 2. Calibration coefficients and correlation matrix.

# Ground Control Points

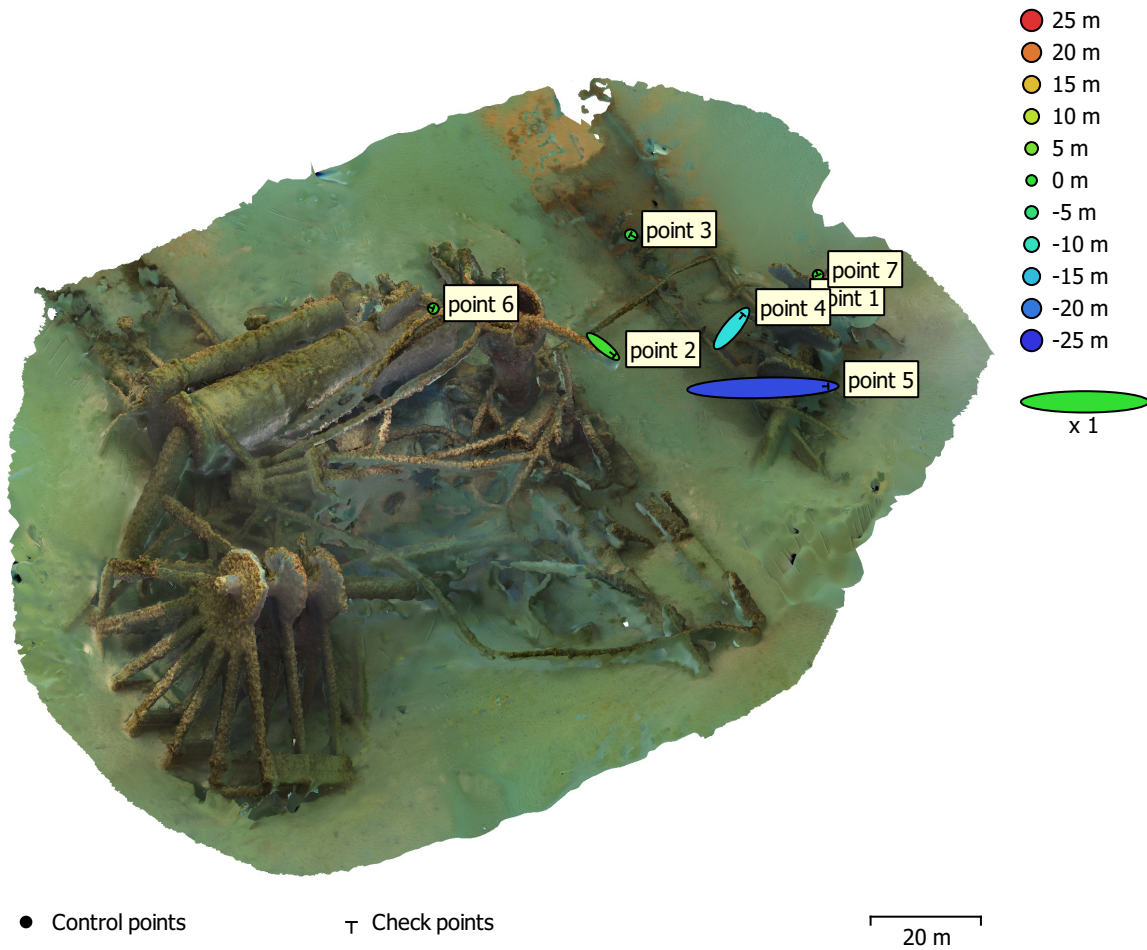


Fig. 3. GCP locations and error estimates.

Z error is represented by ellipse color. X,Y errors are represented by ellipse shape.

Estimated GCP locations are marked with a dot or crossing.

Count	X error (m)	Y error (m)	Z error (m)	XY error (m)	Total (m)
7	9.23714	2.31482	9.95637	9.52277	13.7772

Table 3. Check points RMSE.

<b>Label</b>	<b>X error (m)</b>	<b>Y error (m)</b>	<b>Z error (m)</b>	<b>Total (m)</b>	<b>Image (pix)</b>
point 1	-3.235e-07	-1.16621e-07	4.68637e-07	5.81269e-07	0.000 (93)
point 2	4.14634	-3.36889	1.00663	5.43644	3.451 (12)
point 3	-0.303439	0.170244	-0.449133	0.568136	2.005 (50)
point 4	4.23165	5.07934	-12.3796	14.0342	0.462 (34)
point 5	23.7083	0.574948	-23.2258	33.1941	0.610 (32)
point 6	9.90826e-07	-3.58061e-07	1.28795e-06	1.66396e-06	0.000 (12)
point 7	2.50965e-07	-5.50818e-07	4.24655e-08	6.06784e-07	0.000 (101)
<b>Total</b>	<b>9.23714</b>	<b>2.31482</b>	<b>9.95637</b>	<b>13.7772</b>	<b>1.043</b>

Table 4. Check points.

# Digital Elevation Model

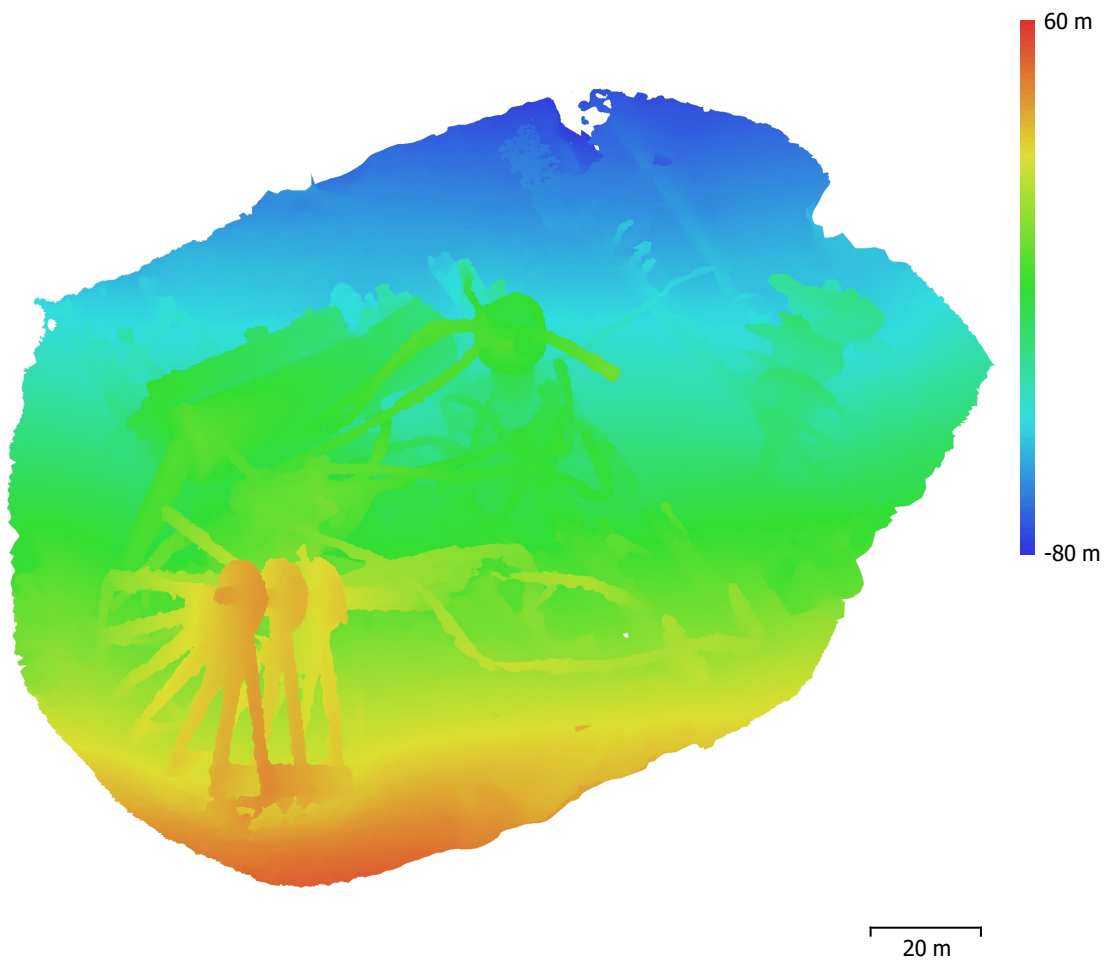


Fig. 4. Reconstructed digital elevation model.

Resolution: 5.38 cm/pix  
Point density: 346 points/m<sup>2</sup>

# Processing Parameters

## General

Cameras	2359
Aligned cameras	2052
Markers	7

## Point Cloud

Points	792,160 of 980,834
RMS reprojection error	0.227935 (1.17079 pix)
Max reprojection error	0.695869 (36.8893 pix)
Mean key point size	4.89296 pix
Point colors	3 bands, uint8
Key points	3.27 GB
Average tie point multiplicity	3.26311

## Alignment parameters

Accuracy	High
Generic preselection	Yes
Reference preselection	No
Key point limit	30,000
Tie point limit	4,000
Filter points by mask	Yes
Mask tie points	No
Guided image matching	No
Adaptive camera model fitting	Yes
Matching time	7 seconds
Matching memory usage	229.91 MB
Alignment time	12 minutes 42 seconds
Alignment memory usage	412.93 MB
Date created	2021:01:11 20:58:12
Software version	1.6.3.10732
File size	82.34 MB

## Depth Maps

Count	2032
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## Depth maps generation parameters

Quality	High
Filtering mode	Aggressive
Processing time	43 minutes 57 seconds
Memory usage	1.09 GB
Date created	2021:01:27 17:05:39
Software version	1.6.3.10732
File size	1005.28 MB

## Dense Point Cloud

Points	113,509,151
Point colors	3 bands, uint8

## Depth maps generation parameters

Quality	High
Filtering mode	Mild
Processing time	45 minutes 58 seconds
Memory usage	1.04 GB

## Dense cloud generation parameters

Processing time	1 hours 20 minutes
Memory usage	15.89 GB

Date created	2021:01:27 08:53:31
Software version	1.6.3.10732
File size	1.46 GB
<b>Model</b>	
Faces	8,300,000
Vertices	4,151,019
Vertex colors	3 bands, uint8
Texture	4,096 x 4,096, 4 bands, uint8
<b>Depth maps generation parameters</b>	
Quality	High
Filtering mode	Mild
Processing time	42 minutes 41 seconds
Memory usage	1.17 GB
<b>Reconstruction parameters</b>	
Surface type	Arbitrary
Source data	Depth maps
Interpolation	Extrapolated
Strict volumetric masks	No
Processing time	19 minutes 50 seconds
Memory usage	10.22 GB
<b>Texturing parameters</b>	
Mapping mode	Generic
Blending mode	Mosaic
Texture size	4,096
Enable hole filling	Yes
Enable ghosting filter	No
UV mapping time	3 minutes 52 seconds
Blending time	5 minutes 23 seconds
Date created	2021:01:15 00:22:52
Software version	1.6.3.10732
File size	377.63 MB
<b>System</b>	
Software name	Agisoft Metashape Standard
Software version	1.7.5 build 13229
OS	Windows 64 bit
RAM	63.92 GB
CPU	Intel(R) Core(TM) i9-9900K CPU @ 3.60GHz
GPU(s)	NVIDIA GeForce RTX 2060 SUPER