

# Agisoft PhotoScan

Processing Report  
16 February 2019



# Survey Data

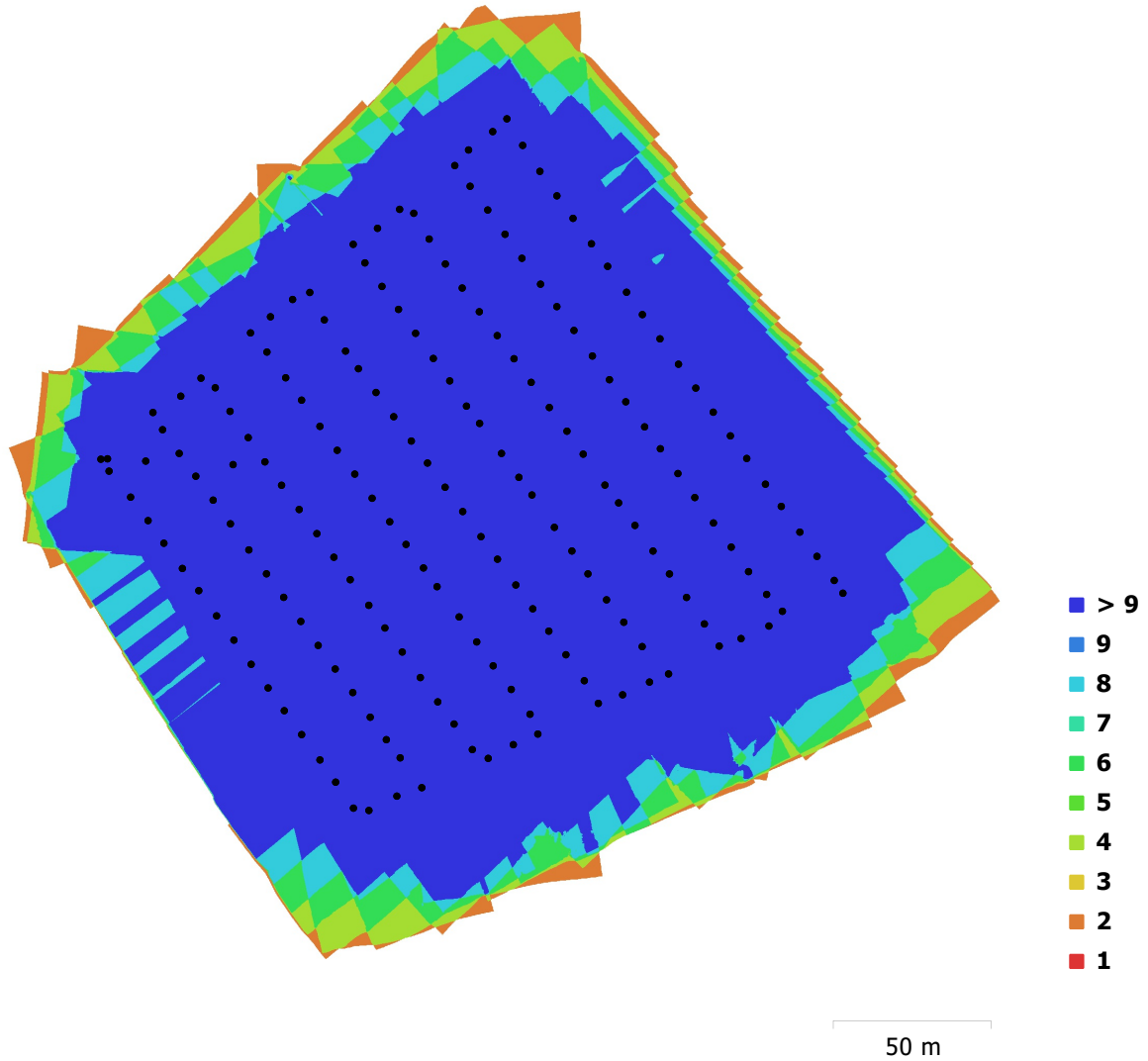


Fig. 1. Camera locations and image overlap.

Number of images:	366	Camera stations:	366
Flying altitude:	58.6 m	Tie points:	78,760
Ground resolution:	1.38 cm/pix	Projections:	656,473
Coverage area:	0.0546 km <sup>2</sup>	Reprojection error:	2.5 pix

Camera Model	Resolution	Focal Length	Pixel Size	Precalibrated
FC550 (15 mm)	4608 x 3456	15 mm	3.76 x 3.76 $\mu$ m	No

Table 1. Cameras.

# Camera Calibration

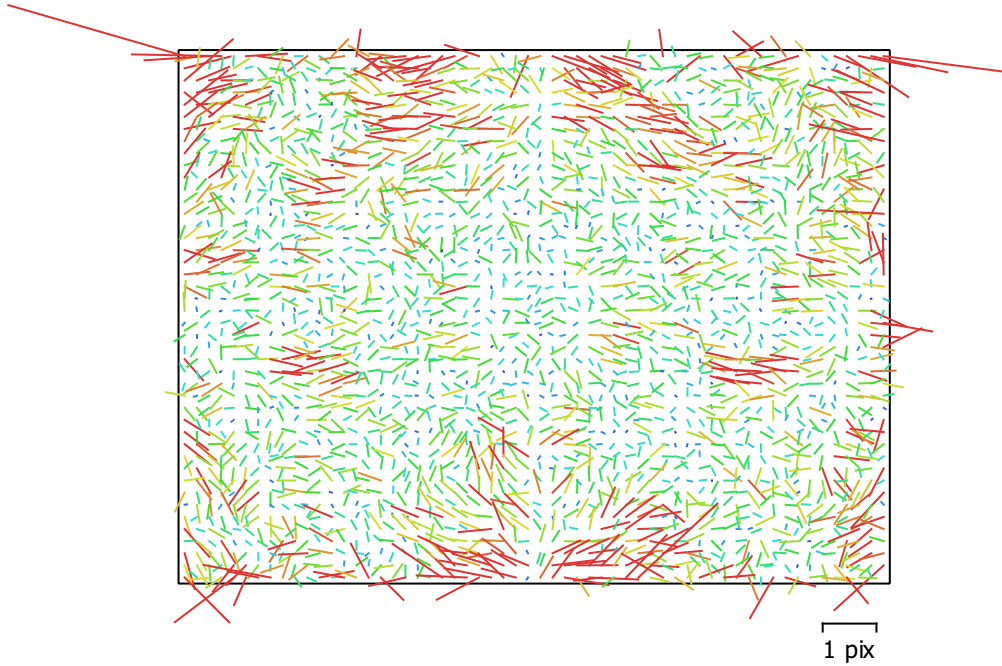


Fig. 2. Image residuals for FC550 (15 mm).

## FC550 (15 mm)

366 images

Type  
Frame

Resolution  
**4608 x 3456**

Focal Length  
**15 mm**

Pixel Size  
**3.76 x 3.76  $\mu$ m**

	Value	Error	Cx	Cy	B1	B2	K1	P1	P2
<b>F</b>	<b>3993.84</b>								
<b>Cx</b>	<b>2.17437</b>	0.12	1.00	-0.02	-0.09	0.10	0.04	0.61	-0.03
<b>Cy</b>	<b>11.9814</b>	0.11		1.00	-0.07	-0.09	0.07	-0.00	0.32
<b>B1</b>	<b>-20.7976</b>	0.032			1.00	0.02	-0.19	-0.04	0.16
<b>B2</b>	<b>-2.4236</b>	0.031				1.00	-0.10	-0.04	0.07
<b>K1</b>	<b>0.00535409</b>	0.00018					1.00	0.24	-0.78
<b>P1</b>	<b>0.000857418</b>	8.8e-06						1.00	-0.19
<b>P2</b>	<b>-0.000312337</b>	1.2e-05							1.00

Table 2. Calibration coefficients and correlation matrix.

# Camera Locations

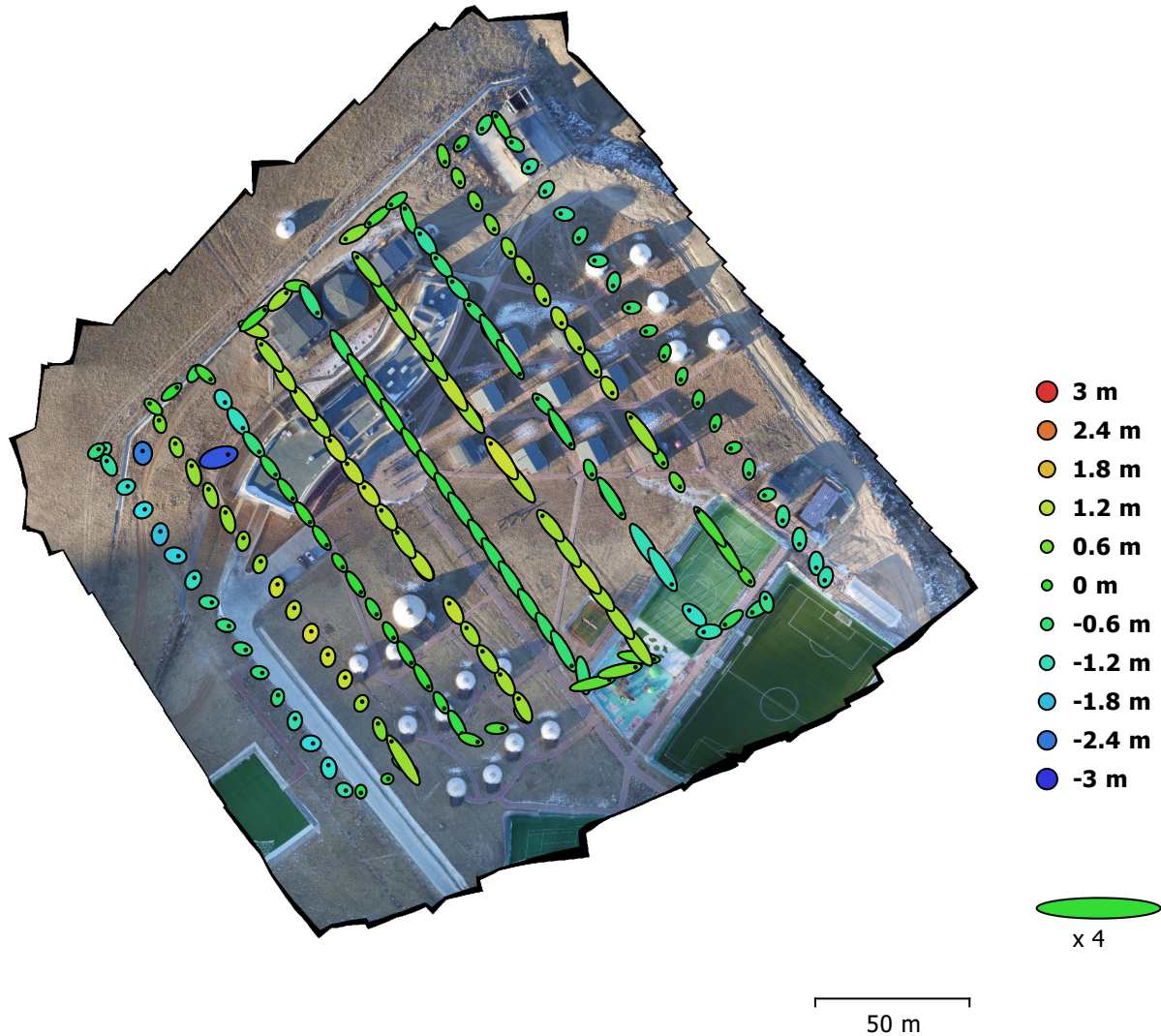


Fig. 3. Camera locations and error estimates.

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)
0.977091	1.27799	0.809211	1.60872	1.80078

Table 3. Average camera location error.

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

# Digital Elevation Model

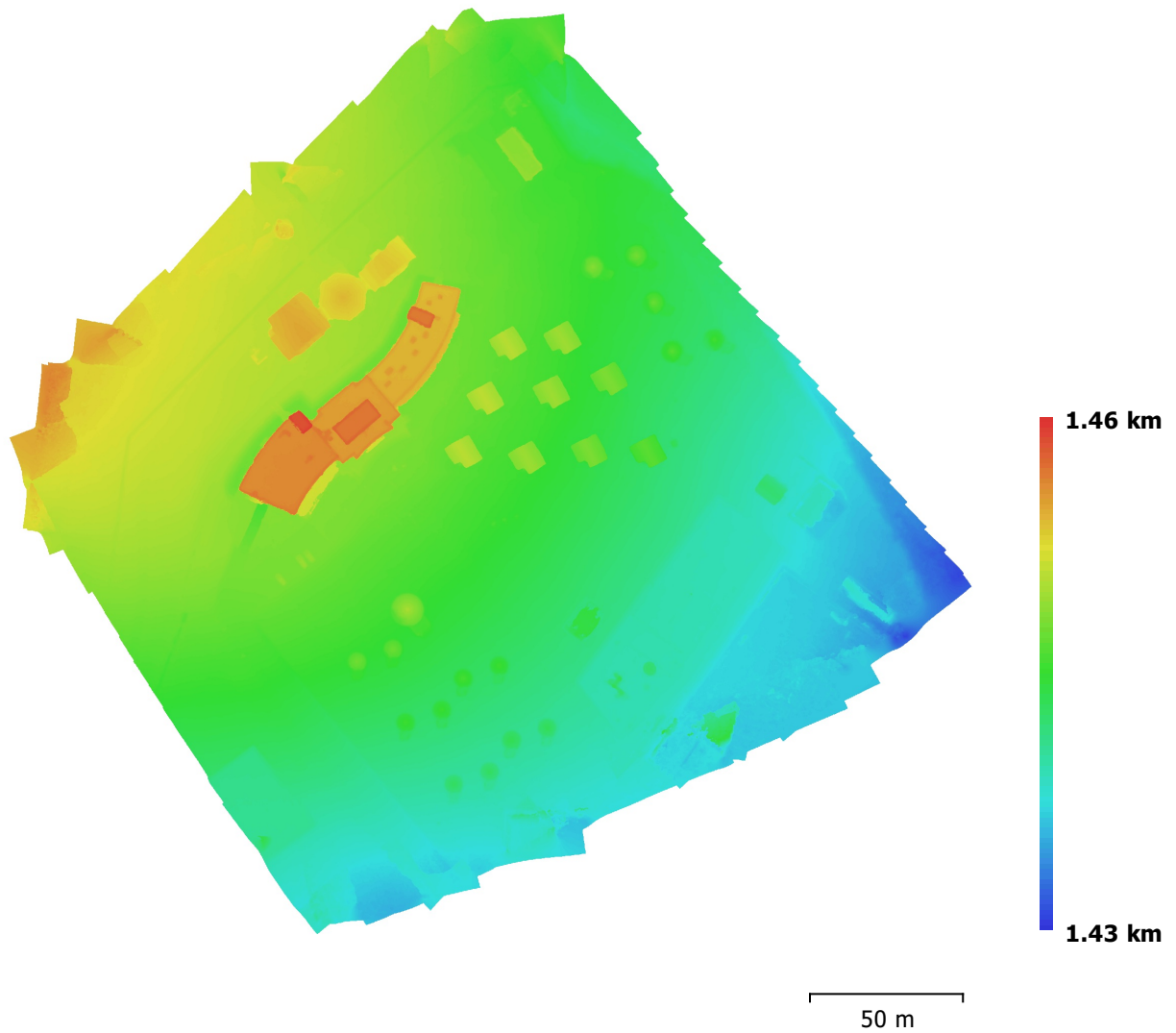


Fig. 4. Reconstructed digital elevation model.

Resolution: 11 cm/pix  
Point density: 82.5 points/m<sup>2</sup>

# Processing Parameters

## General

Cameras	366
Aligned cameras	366
Coordinate system	WGS 84 (EPSG::4326)
Rotation angles	Yaw, Pitch, Roll

## Point Cloud

Points	78,760 of 258,582
RMS reprojection error	0.160992 (2.50007 pix)
Max reprojection error	0.495977 (51.4948 pix)
Mean key point size	14.8553 pix
Effective overlap	4.73649

### Alignment parameters

Accuracy	Low
Generic preselection	Yes
Reference preselection	Yes
Key point limit	40,000
Tie point limit	4,000
Adaptive camera model fitting	Yes
Matching time	23 minutes 47 seconds
Alignment time	7 minutes 36 seconds

## Dense Point Cloud

Points	5,116,778
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### Reconstruction parameters

Quality	Low
Depth filtering	Aggressive
Depth maps generation time	4 hours 29 minutes
Dense cloud generation time	16 minutes 53 seconds

## Model

Faces	10,000
Vertices	5,173
Texture	4,096 x 4,096, uint8

### Reconstruction parameters

Surface type	Arbitrary
Source data	Sparse
Interpolation	Enabled
Face count	10,000
Processing time	6 seconds

### Texturing parameters

Mapping mode	Generic
Blending mode	Mosaic
Texture size	4,096 x 4,096
Enable color correction	No
Enable hole filling	Yes
UV mapping time	9 seconds
Blending time	17 minutes 9 seconds

## DEM

Size	3,443 x 3,260
Coordinate system	WGS 84 (EPSG::4326)

### Reconstruction parameters

Source data	Dense cloud
Interpolation	Enabled
Processing time	22 seconds

## Software

Version	1.3.2 build 4164
Platform	Windows 64