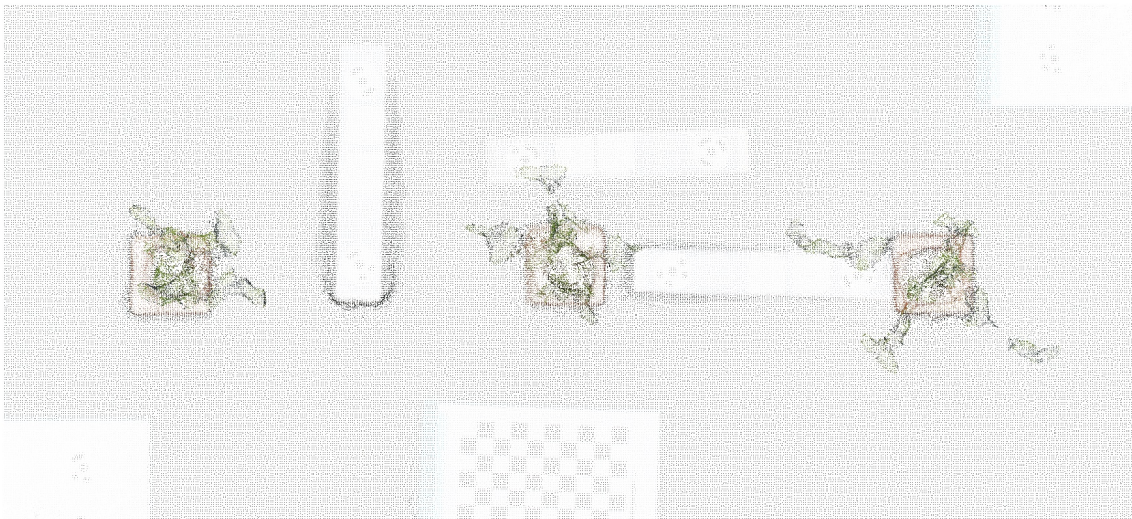


# Agisoft Metashape

Processing Report

08 August 2020



# Survey Data

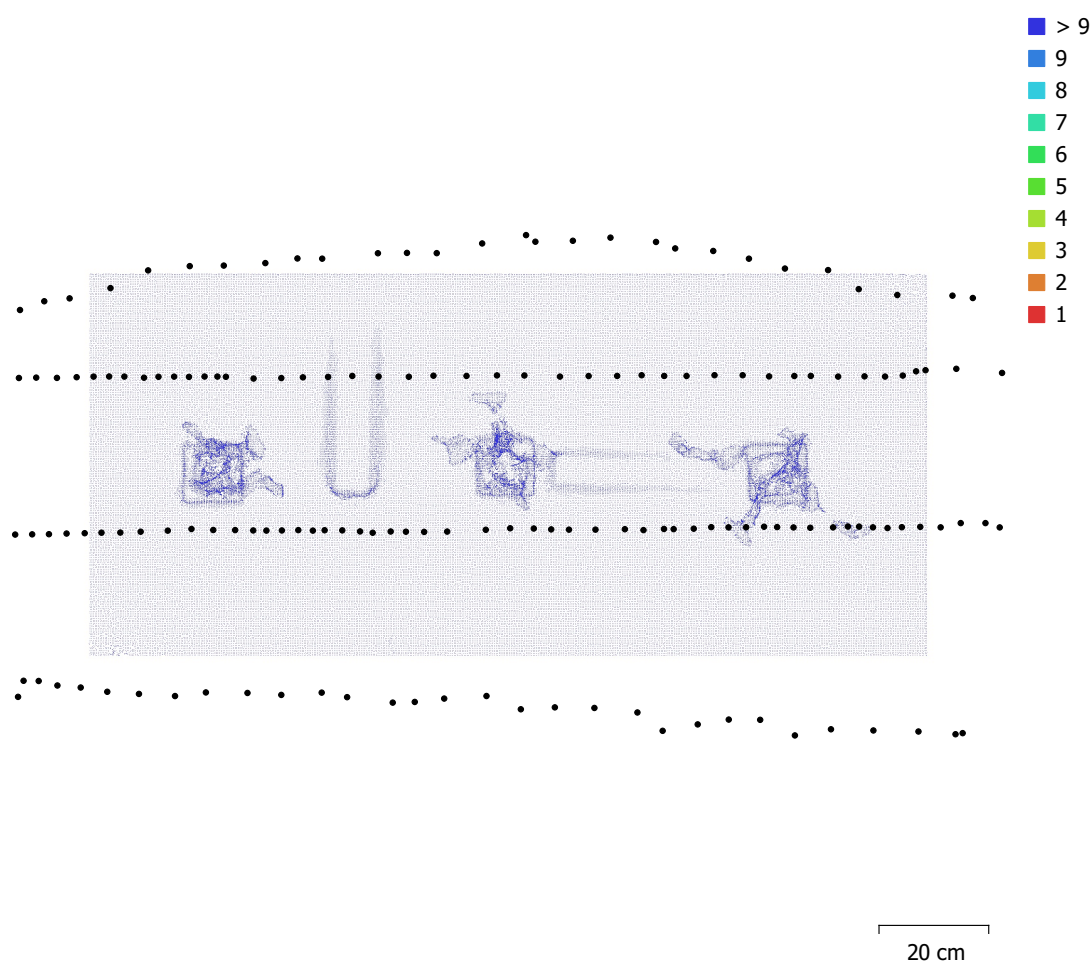


Fig. 1. Camera locations and image overlap.

Number of images:	157	Camera stations:	157
Flying altitude:	1.19 m	Tie points:	15,126
Ground resolution:	0.192 mm/pix	Projections:	71,810
Coverage area:	1.04e+03 cm <sup>2</sup>	Reprojection error:	4.52 pix

Camera Model	Resolution	Focal Length	Pixel Size	Precalibration
EOS Kiss X7, EF-S18-55mm f/3.5-5.6 IS STM (24mm)	5184 x 3456	24 mm	4.38 x 4.38 μm	No

Table 1. Cameras.

# Camera Calibration

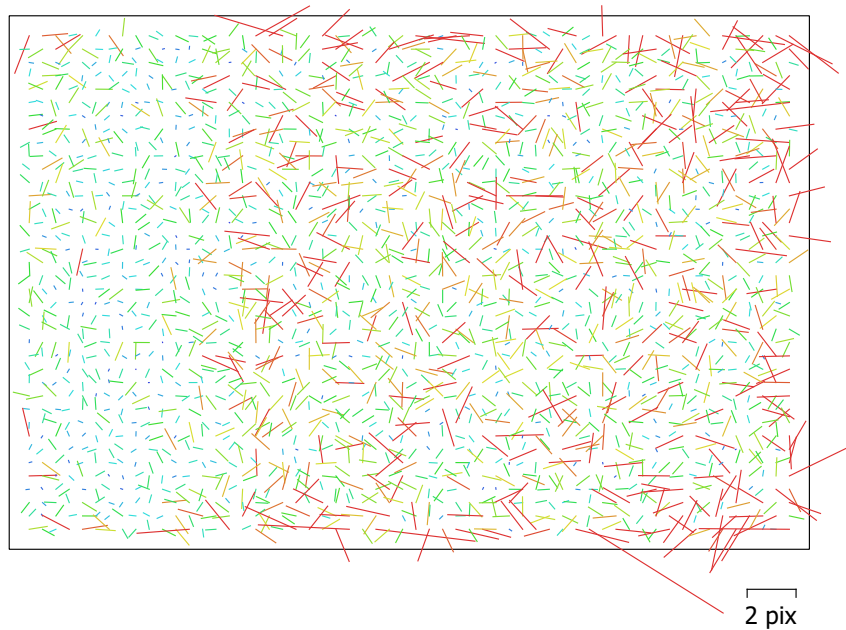


Fig. 2. Image residuals for Canon EOS Kiss X7, EF-S18-55mm f/3.5-5.6 IS STM (24mm).

## Canon EOS Kiss X7, EF-S18-55mm f/3.5-5.6 IS STM (24mm)

157 images

Type	Resolution	Focal Length	Pixel Size
<b>Frame</b>	<b>5184 x 3456</b>	<b>24 mm</b>	<b>4.38 x 4.38 <math>\mu\text{m}</math></b>

	Value	Error	F	Cx	Cy	K1	K2	K3	P1	P2
<b>F</b>	<b>5583.67</b>	2.1	1.00	-0.85	-0.16	0.09	-0.05	0.05	-0.18	0.19
<b>Cx</b>	<b>-43.1835</b>	1.6		1.00	0.20	-0.20	0.10	-0.08	0.33	-0.10
<b>Cy</b>	<b>2.50791</b>	0.77			1.00	-0.07	0.06	-0.02	0.05	0.43
<b>K1</b>	<b>-0.125521</b>	0.00061				1.00	-0.90	0.82	-0.24	-0.02
<b>K2</b>	<b>0.133085</b>	0.0049					1.00	-0.98	-0.07	-0.03
<b>K3</b>	<b>0.00689374</b>	0.012						1.00	0.09	0.05
<b>P1</b>	<b>-0.00047676</b>	5.8e-05							1.00	0.20
<b>P2</b>	<b>0.000610075</b>	3.3e-05								1.00

Table 2. Calibration coefficients and correlation matrix.

# Scale Bars

Label	Distance (m)	Error (m)
target 1_target 2	0.0852615	0.000261484
target 1_target 3	0.126918	0.000917673
target 1_target 4	0.15292	-0.00108014
target 2_target 3	0.152963	-0.00103703
target 2_target 4	0.126944	0.000943614
target 3_target 4	0.0853873	0.000387258
target 5_target 6	0.0852747	0.000274721
target 5_target 7	0.127068	0.00106807
target 5_target 8	0.153035	-0.00096468
target 6_target 7	0.153058	-0.000941851
target 6_target 8	0.127074	0.0010737
target 7_target 8	0.0853311	0.000331094
<b>Total</b>		<b>0.000841101</b>

Table 3. Control scale bars.

# Digital Elevation Model

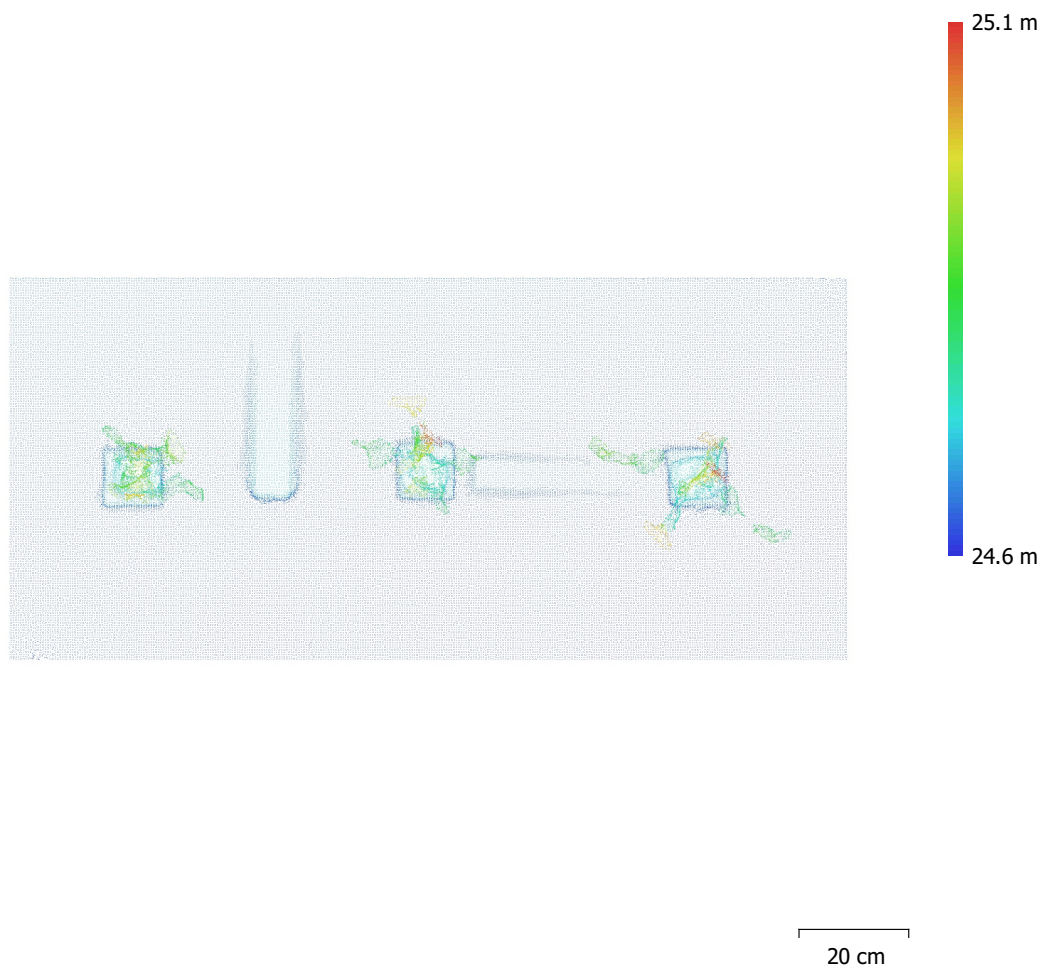


Fig. 3. Reconstructed digital elevation model.

Resolution: unknown  
Point density: unknown

# Processing Parameters

## General

Cameras	157
Aligned cameras	157
Markers	14
Scale bars	12
Coordinate system	Local Coordinates (m)
Rotation angles	Yaw, Pitch, Roll

## Point Cloud

Points	15,126 of 18,563
RMS reprojection error	0.167051 (4.51895 pix)
Max reprojection error	2.62673 (92.7972 pix)
Mean key point size	26.9207 pix
Point colors	3 bands, uint8
Key points	No
Average tie point multiplicity	5.65711

## Alignment parameters

Accuracy	Lowest
Generic preselection	No
Reference preselection	Sequential
Key point limit	40,000
Tie point limit	4,000
Guided image matching	No
Adaptive camera model fitting	No
Matching time	28 seconds
Matching memory usage	214.18 MB
Alignment time	21 seconds
Alignment memory usage	41.80 MB

## Optimization parameters

Parameters	f, cx, cy, k1-k3, p1, p2
Adaptive camera model fitting	No
Optimization time	3 seconds
Software version	1.6.3.10732

## Depth Maps

Count	149
<b>Depth maps generation parameters</b>	
Quality	Lowest
Filtering mode	Mild
Processing time	25 seconds
Software version	1.6.3.10732

## Dense Point Cloud

Points	150,532
Point colors	3 bands, uint8

## Depth maps generation parameters

Quality	Lowest
Filtering mode	Mild
Processing time	25 seconds

## Dense cloud generation parameters

Processing time	17 seconds
Software version	1.6.3.10732

## System

Software name	Agisoft Metashape Professional
Software version	1.6.3 build 10732
OS	Windows 64 bit
RAM	127.68 GB
CPU	Intel(R) Core(TM) i9-9940X CPU @ 3.30GHz
GPU(s)	GeForce GTX 1080 Ti GeForce RTX 2080 Ti