

Barrio 2 De Febrero

Processing Report
27 September 2021



Survey Data

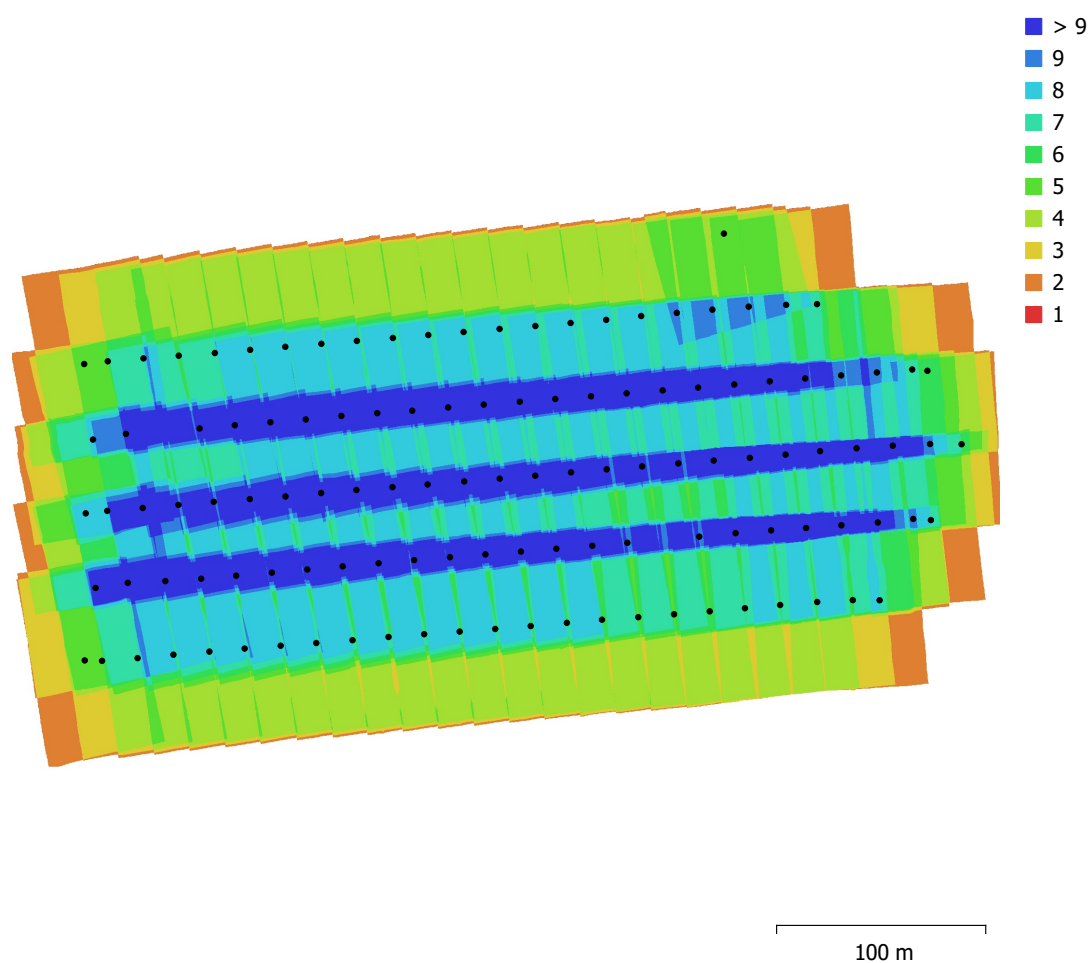


Fig. 1. Camera locations and image overlap.

Number of images:	121	Camera stations:	121
Flying altitude:	71.2 m	Tie points:	129,730
Ground resolution:	1.78 cm/pix	Projections:	467,961
Coverage area:	0.105 km ²	Reprojection error:	0.587 pix

Camera Model	Resolution	Focal Length	Pixel Size	Precalibrated
FC6310 (8.8mm)	4864 x 3648	8.8 mm	2.61 x 2.61 μm	No

Table 1. Cameras.

Camera Calibration

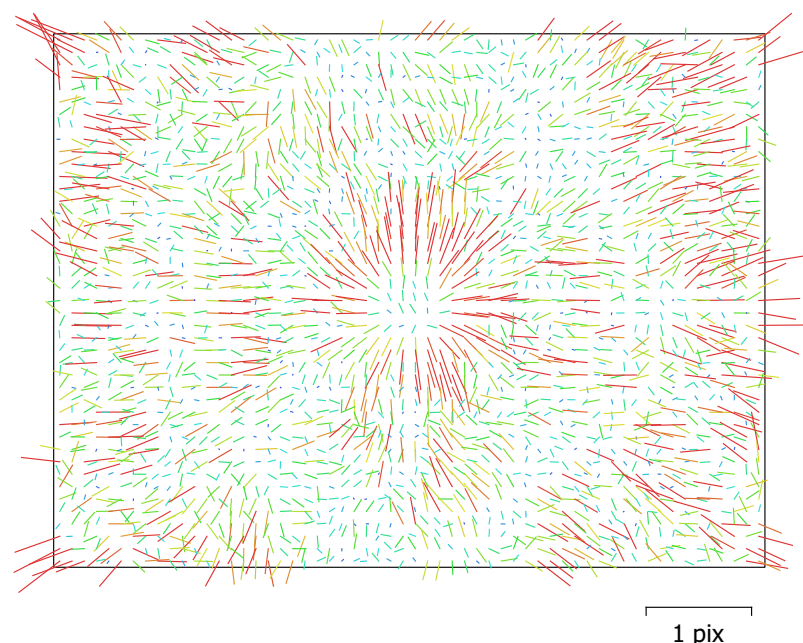


Fig. 2. Image residuals for FC6310 (8.8mm).

FC6310 (8.8mm)

121 images

Type	Resolution	Focal Length	Pixel Size
Frame	4864 x 3648	8.8 mm	2.61 x 2.61 μm

	Value	Error	F	Cx	Cy	K1	K2	K3	P1	P2
F	3677.84	2.6	1.00	0.67	0.84	0.23	-0.53	0.68	-0.00	-0.12
Cx	-5.01023	0.086		1.00	0.56	0.16	-0.36	0.45	0.25	-0.11
Cy	16.8495	0.095			1.00	0.19	-0.45	0.57	-0.04	0.17
K1	0.00649376	4.1e-05				1.00	-0.91	0.80	-0.02	-0.02
K2	-0.0298914	0.00017					1.00	-0.97	0.01	0.06
K3	0.0301783	0.0002						1.00	-0.01	-0.08
P1	-0.000162618	2.7e-06							1.00	-0.09
P2	-0.000422963	3.1e-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)
3.75405	3.92065	0.80599	5.42811	5.48763

Table 3. Average camera location error.

X - Easting, Y - Northing, Z - Altitude.

Ground Control Points



Fig. 4. 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 (cm)	Y error (cm)	Z error (cm)	XY error (cm)	Total (cm)
10	1.17707	1.34955	0.544538	1.79075	1.87171

Table 4. Control points RMSE.

X - Easting, Y - Northing, Z - Altitude.

Label	X error (cm)	Y error (cm)	Z error (cm)	Total (cm)	Image (pix)
1	0.167444	-0.298112	-0.81046	0.879633	0.865 (8)
2	0.33799	1.44119	1.11951	1.85596	0.848 (8)
3	-1.30767	-2.27443	-0.56362	2.68341	1.723 (5)
4	-0.895147	2.77494	0.471117	2.95356	1.269 (7)
5	1.36808	-1.28486	-0.653075	1.98721	1.018 (8)
6	1.83127	-0.205735	0.140996	1.84818	0.751 (7)
7	-2.08351	-0.223774	0.238959	2.10907	0.839 (10)
8	1.12032	0.58414	-0.0544317	1.26463	0.834 (8)
9	0.085663	-0.946645	0.0226359	0.950783	0.604 (4)
10	-0.61049	0.439411	0.0920733	0.757798	0.578 (5)
Total	1.17707	1.34955	0.544538	1.87171	0.970

Table 5. Control points.
X - Easting, Y - Northing, Z - Altitude.

Digital Elevation Model

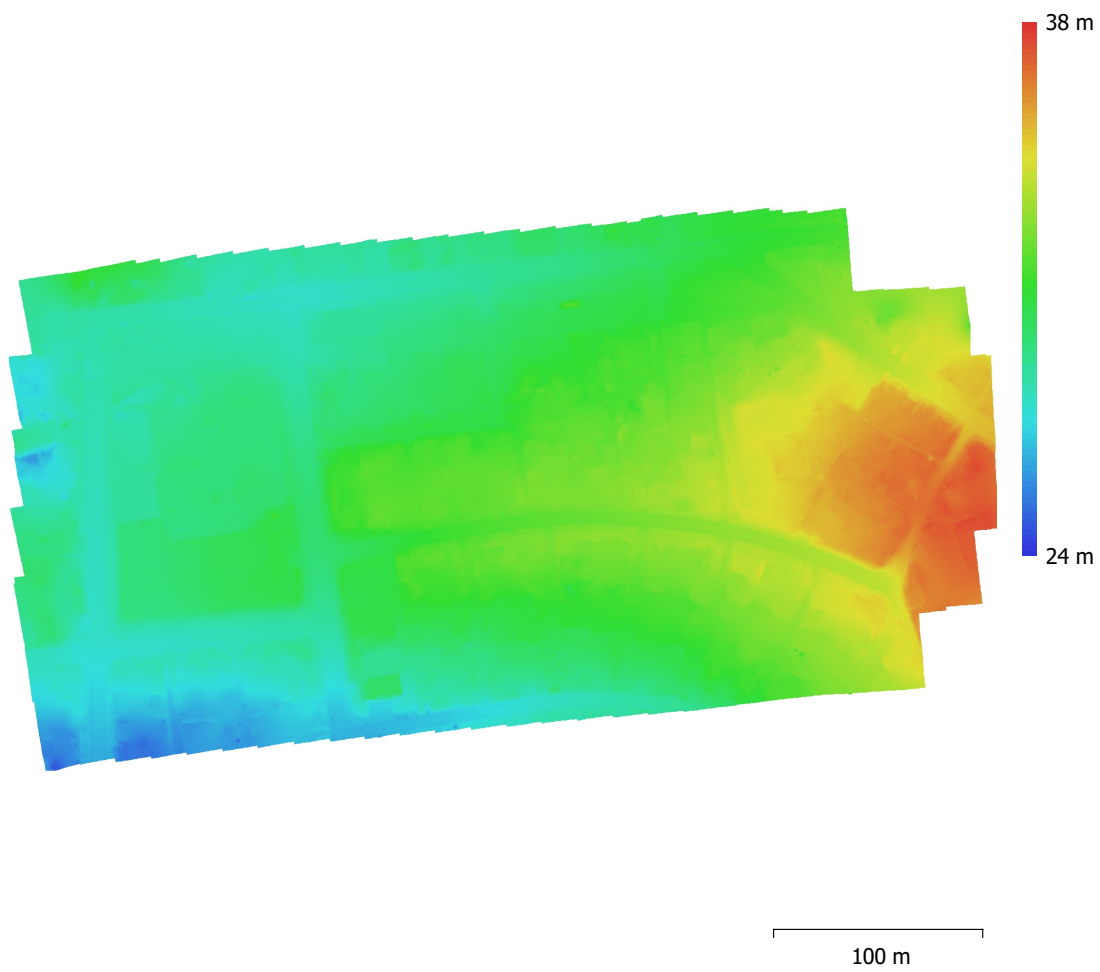


Fig. 5. Reconstructed digital elevation model.

Resolution: 3.55 cm/pix
Point density: 792 points/m²

Processing Parameters

General

Cameras	121
Aligned cameras	121
Markers	10

Shapes

Point	1
LineString	263
Polygon	21609
Coordinate system	WGS 84 / UTM zone 21S EGM08
Rotation angles	Yaw, Pitch, Roll

Point Cloud

Points	129,730 of 138,363
RMS reprojection error	0.173729 (0.586936 pix)
Max reprojection error	0.606767 (20.2803 pix)
Mean key point size	3.30907 pix
Point colors	3 bands, uint8
Key points	No
Average tie point multiplicity	3.71847

Alignment parameters

Accuracy	High
Generic preselection	No
Reference preselection	Source
Key point limit	40,000
Tie point limit	4,000
Guided image matching	No
Adaptive camera model fitting	No
Matching time	6 minutes 13 seconds
Matching memory usage	764.88 MB
Alignment time	43 seconds
Alignment memory usage	64.23 MB

Optimization parameters

Parameters	f, cx, cy, k1-k3, p1, p2
Adaptive camera model fitting	No
Optimization time	1 seconds
Software version	1.6.1.10009
File size	11.23 MB

Depth Maps

Count	121
-------	-----

Depth maps generation parameters

Quality	High
Filtering mode	Mild
Processing time	15 minutes 33 seconds
Memory usage	2.23 GB
Software version	1.6.1.10009
File size	636.63 MB

Dense Point Cloud

Points	101,595,337
Point colors	3 bands, uint8

Depth maps generation parameters

Quality	High
---------	------

Filtering mode	Mild
Processing time	15 minutes 33 seconds
Memory usage	2.23 GB
Dense cloud generation parameters	
Processing time	8 minutes 3 seconds
Memory usage	3.36 GB
Software version	1.6.1.10009
File size	1.43 GB
DEM	
Size	18,313 x 10,951
Coordinate system	WGS 84 / UTM zone 21S EGM08
Reconstruction parameters	
Source data	Dense cloud
Interpolation	Enabled
Processing time	1 minutes 31 seconds
Memory usage	307.66 MB
Software version	1.6.1.10009
File size	334.88 MB
Orthomosaic	
Size	26,559 x 15,093
Coordinate system	WGS 84 / UTM zone 21S EGM08
Colors	3 bands, uint8
Reconstruction parameters	
Blending mode	Mosaic
Surface	DEM
Enable hole filling	Yes
Processing time	2 minutes 55 seconds
Memory usage	1.66 GB
Software version	1.6.1.10009
File size	2.07 GB
System	
Software name	Agisoft Metashape Professional
Software version	1.7.2 build 12070
OS	Windows 64 bit
RAM	63.93 GB
CPU	Intel(R) Core(TM) i7-9700F CPU @ 3.00GHz
GPU(s)	Radeon(TM) RX 460 Graphics (Baffin)