

RSPF-0133-2022-ITEGI

**Zona: Area de estudio en el ámbito de la UF Fundo Zanja Seca
Código de estudio: ITE-2022-057**

17 September 2022



Survey Data

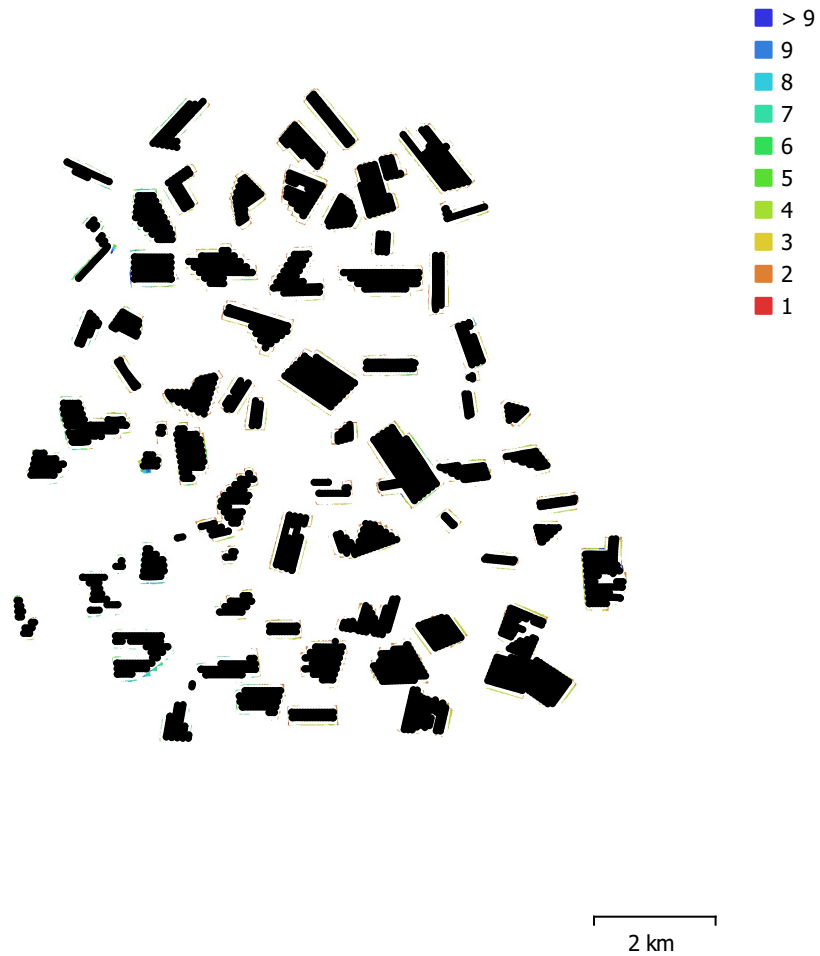


Fig. 1. Camera locations and image overlap.

Number of images:	6,167	Camera stations:	4,905
Flying altitude:	179 m	Tie points:	3,673,994
Ground resolution:	4.27 cm/pix	Projections:	9,496,633
Coverage area:	1.07 km ²	Reprojection error:	1.16 pix

Camera Model	Resolution	Focal Length	Pixel Size	Precalibrated
FC6310S (8.8mm)	5472 x 3648	8.8 mm	2.41 x 2.41 μ m	No

Table 1. Cameras.

Camera Calibration

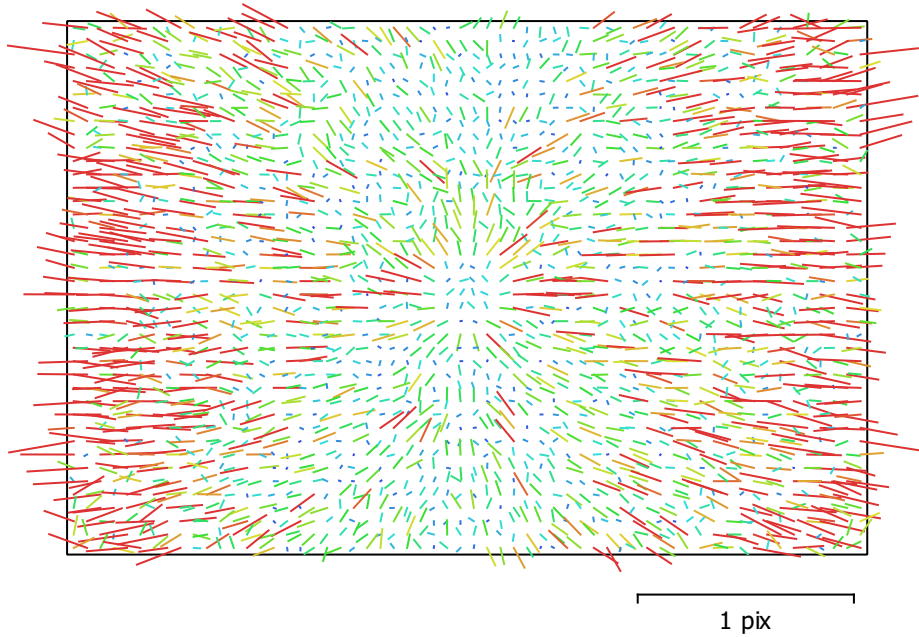


Fig. 2. Image residuals for FC6310S (8.8mm).

FC6310S (8.8mm)

6167 images

Type	Resolution	Focal Length	Pixel Size
Frame	5472 x 3648	8.8 mm	2.41 x 2.41 μm

	Value	Error	F	Cx	Cy	B1	B2	K1	K2	K3	K4	P1	P2
F	3753.87	1.7	1.00	0.04	0.60	0.00	-0.01	-0.03	-0.29	0.49	-0.57	-0.23	-0.59
Cx	-7.8623	0.056		1.00	0.01	-0.03	-0.04	0.01	-0.02	0.03	-0.03	0.19	-0.05
Cy	-25.1204	0.054			1.00	0.02	-0.02	-0.04	-0.17	0.30	-0.34	-0.17	-0.18
B1	-0.167671	0.015				1.00	-0.04	-0.00	-0.01	0.01	-0.01	-0.01	-0.00
B2	0.118745	0.014					1.00	0.01	0.00	-0.01	0.01	0.00	0.01
K1	-0.0101739	5.3e-05						1.00	-0.63	0.53	-0.47	0.03	0.10
K2	-0.0297951	0.00018							1.00	-0.96	0.92	0.06	0.17
K3	0.0741649	0.0004								1.00	-0.99	-0.11	-0.28
K4	-0.0454382	0.00029									1.00	0.12	0.33
P1	-0.00073217	1.5e-06										1.00	0.11
P2	-0.00219851	1.8e-06											1.00

Table 2. Calibration coefficients and correlation matrix.

Camera Locations

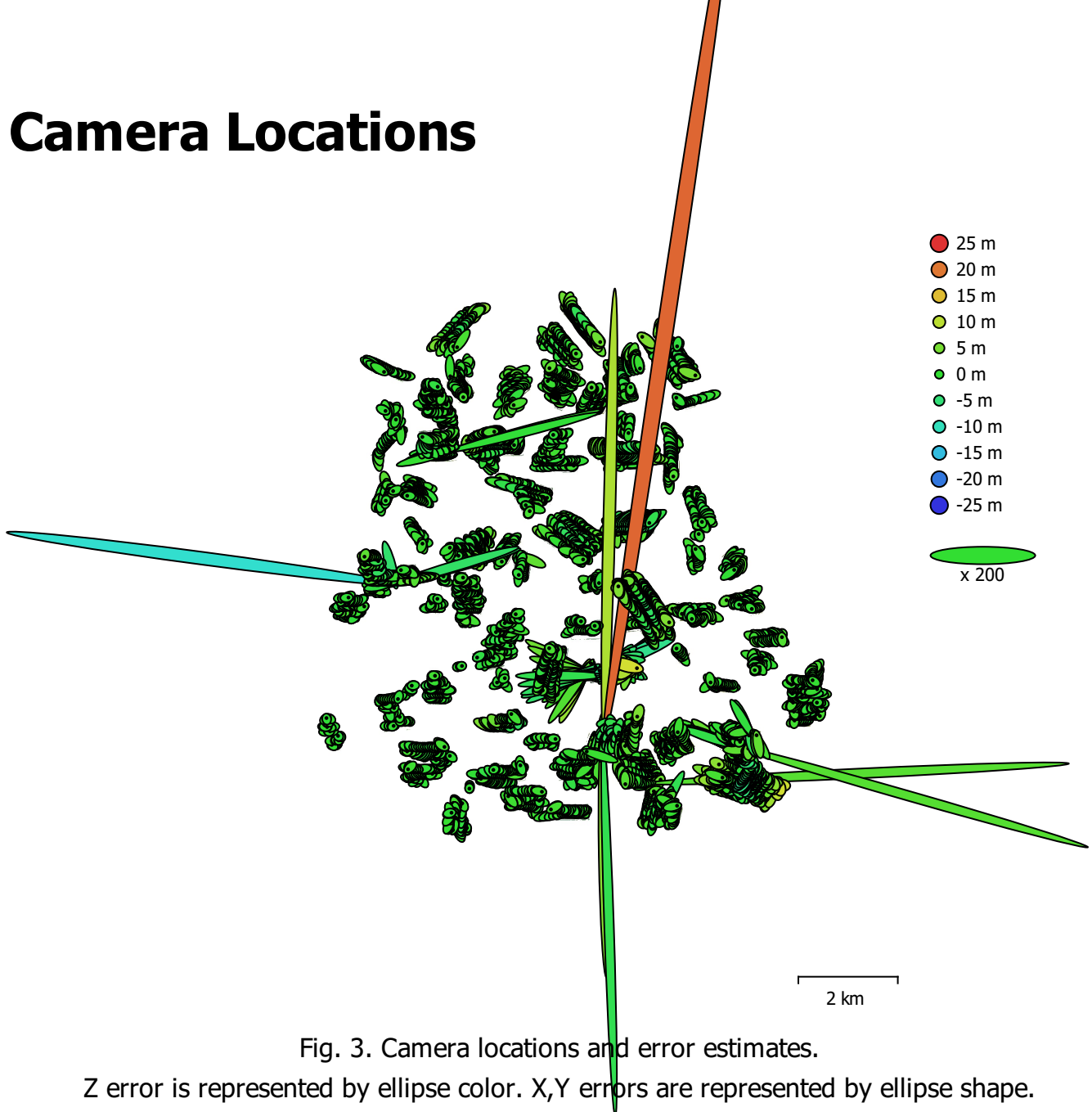


Fig. 3. Camera locations and error estimates.
 Z error is represented by ellipse color. X,Y errors are represented by ellipse shape.
 Estimated camera locations are marked with a black dot.

X error (m)	Y error (m)	Z error (m)	XY error (m)	Total error (m)
1.25468	1.62699	1.79472	2.05459	2.72806

Table 3. Average camera location error.
 X - Longitude, Y - Latitude, Z - Altitude.

Digital Elevation Model

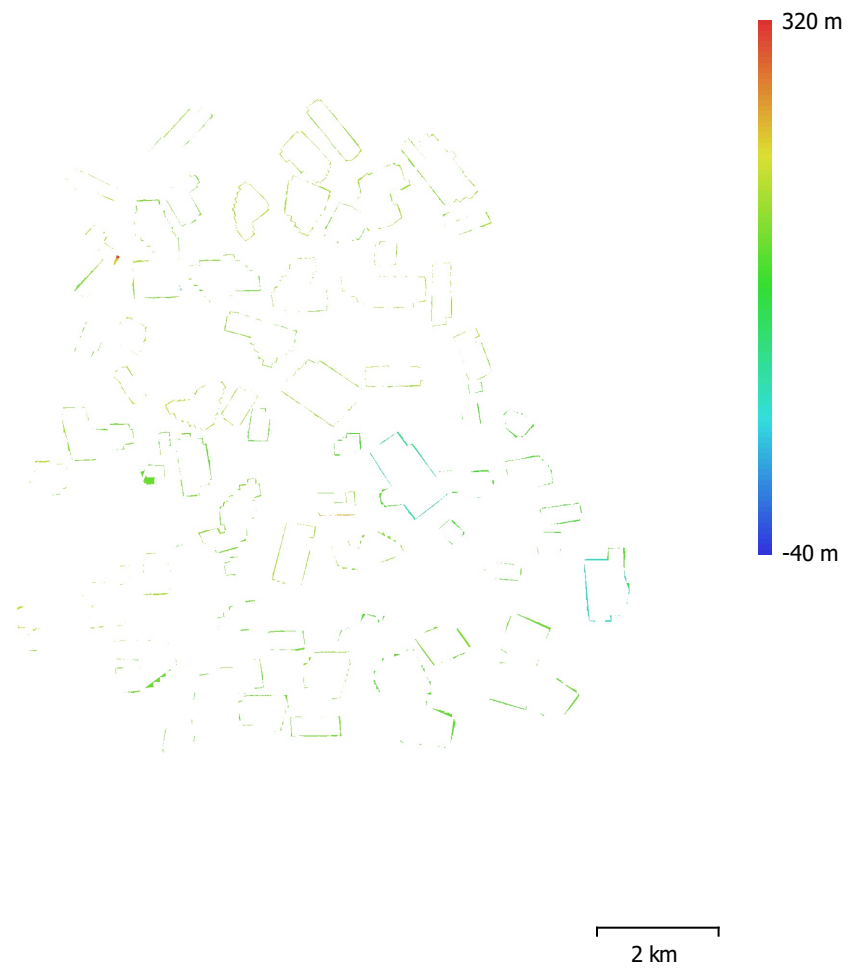


Fig. 4. Reconstructed digital elevation model.

Resolution: 38.1 cm/pix
Point density: 6.87 points/m²

Processing Parameters

General

Cameras 6167
Aligned cameras 4905

Shapes

Polygons 63
Coordinate system WGS 84 / UTM zone 18S (EPSG::32718)
Coordinate system WGS 84 (EPSG::4326)
Rotation angles Yaw, Pitch, Roll

Point Cloud

Points 3,673,994 of 4,843,042
RMS reprojection error 0.108516 (1.16477 pix)
Max reprojection error 0.328648 (41.6362 pix)
Mean key point size 8.58006 pix
Point colors 3 bands, uint8
Key points No
Average tie point multiplicity 2.58971

Alignment parameters

Accuracy Medium
Generic preselection Yes
Reference preselection Estimated
Key point limit 60,000
Tie point limit 6,000
Guided image matching No
Adaptive camera model fitting Yes
Matching time 1 hours 58 minutes
Matching memory usage 27.17 GB
Alignment time 15 minutes 6 seconds
Alignment memory usage 3.16 GB
Software version 1.6.5.11249
File size 290.13 MB

Depth Maps

Count 4882

Depth maps generation parameters

Quality Low
Filtering mode Aggressive
Processing time 17 minutes 7 seconds
Memory usage 2.06 GB
Software version 1.6.5.11249
File size 2.16 GB

Dense Point Cloud

Points 338,648,009
Point colors 3 bands, uint8

Depth maps generation parameters

Quality Low
Filtering mode Aggressive
Processing time 17 minutes 7 seconds
Memory usage 2.06 GB

Dense cloud generation parameters

Processing time 28 minutes 37 seconds
Memory usage 6.04 GB

Software version	1.6.5.11249
File size	4.28 GB
DEM	
Size	39,274 x 45,614
Coordinate system	WGS 84 (EPSG::4326)
Depth maps generation parameters	
Quality	Low
Filtering mode	Aggressive
Processing time	17 minutes 7 seconds
Memory usage	2.06 GB
Reconstruction parameters	
Source data	Depth maps
Interpolation	Disabled
Processing time	1 hours 4 minutes
Memory usage	3.32 GB
Software version	1.6.5.11249
File size	802.94 MB
Orthomosaic	
Size	303,192 x 380,344
Coordinate system	WGS 84 / UTM zone 18S (EPSG::32718)
Colors	3 bands, uint8
Reconstruction parameters	
Blending mode	Mosaic
Surface	DEM
Enable hole filling	Yes
Processing time	1 hours 27 minutes
Memory usage	18.45 GB
Software version	1.6.5.11249
File size	138.88 GB
System	
Software name	Agisoft Metashape Professional
Software version	1.6.5 build 11249
OS	Windows 64 bit
RAM	255.89 GB
CPU	AMD Ryzen Threadripper 3970X 32-Core Processor
GPU(s)	Quadro RTX 4000 Quadro RTX 4000