

Alpha 1

Processing Report



Survey Data

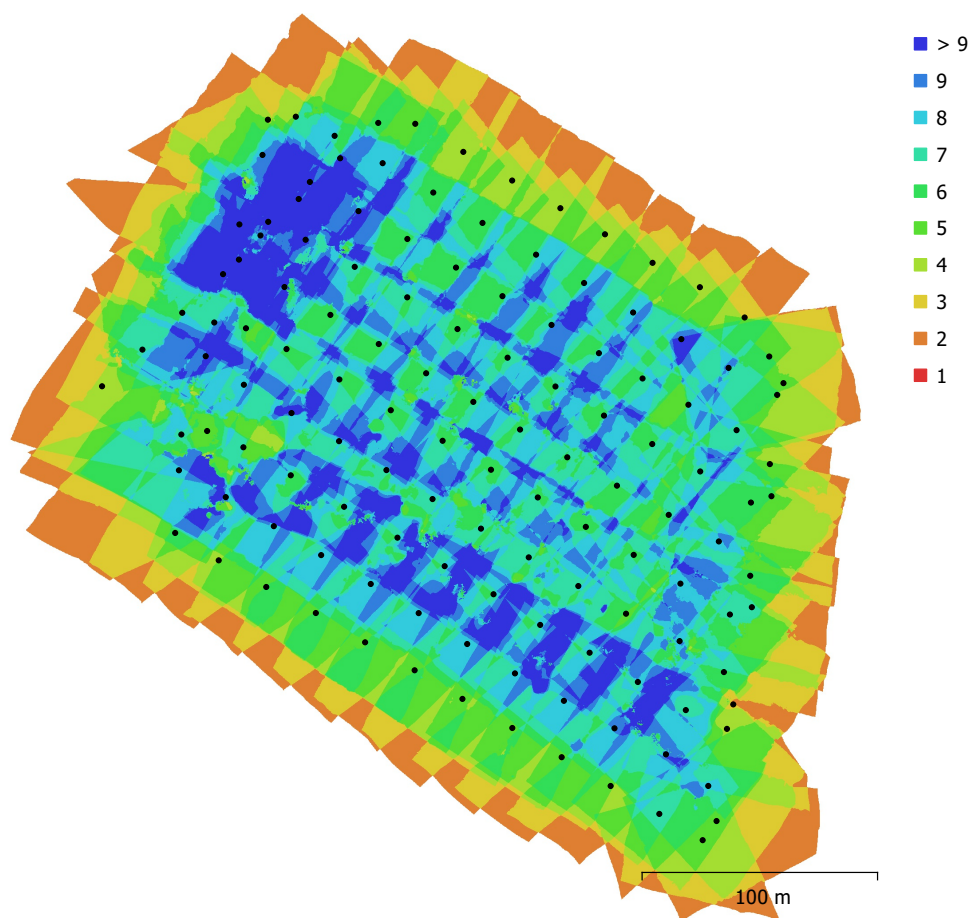


Fig. 1. Camera locations and image overlap.

Number of images:	131	Camera stations:	131
Flying altitude:	64.2 m	Tie points:	33,991
Ground resolution:	1.83 cm/pix	Projections:	100,298
Coverage area:	0.0879 km ²	Reprojection error:	2.2 pix

Camera Model	Resolution	Focal Length	Pixel Size	Precalibrated
Canon PowerShot D30 (5 mm)	4000 x 3000	5 mm	1.55 x 1.55 μ m	No

Table 1. Cameras.

Camera Calibration

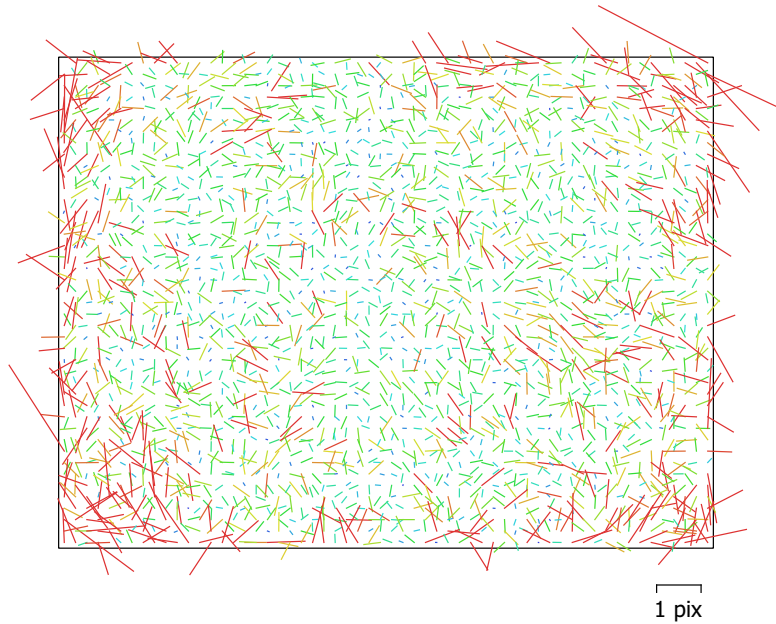


Fig. 2. Image residuals for Canon PowerShot D30 (5 mm).

Canon PowerShot D30 (5 mm)

131 images

Type
Frame

Resolution
4000 x 3000

Focal Length
5 mm

Pixel Size
1.55 x 1.55 μm

	Value	Error	Cx	Cy	B1	P1	P2
F	3227.06						
Cx	0.324087	0.46	1.00	-0.03	0.08	0.48	0.05
Cy	58.6238	0.42		1.00	-0.27	0.01	0.52
B1	-3.14487	0.12			1.00	-0.02	-0.11
P1	-0.00019946	3.1e-005				1.00	0.03
P2	0.00644982	3.2e-005					1.00

Table 2. Calibration coefficients and correlation matrix.

Camera Locations

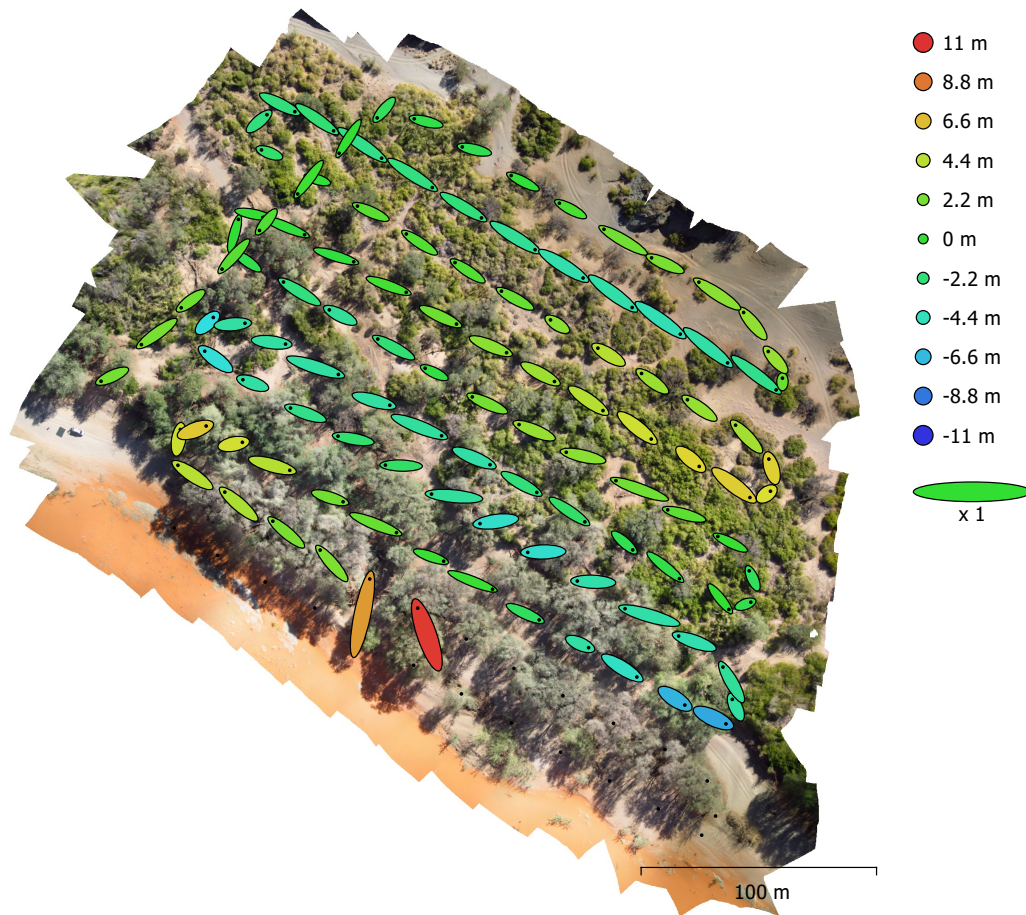


Fig. 3. Camera locations and error estimates.

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)
11.8848	7.9072	3.35697	14.2749	14.6643

Table 3. Average camera location error.

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

Digital Elevation Model

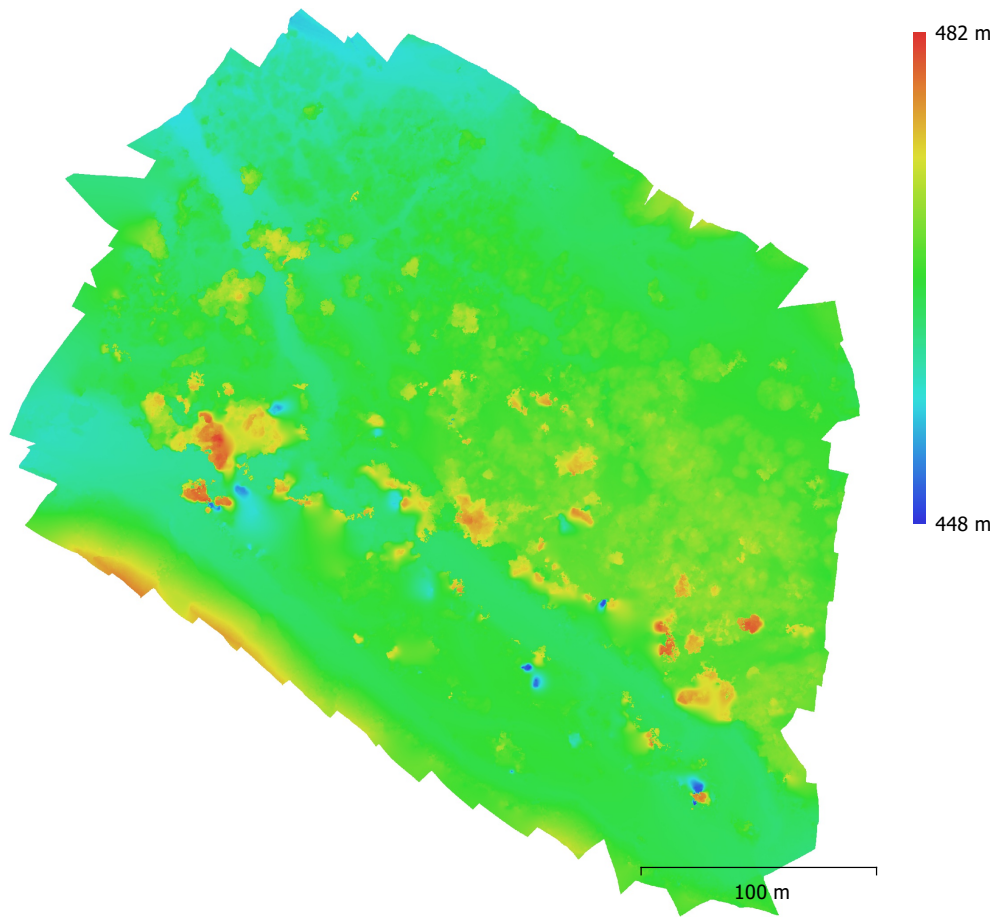


Fig. 4. Reconstructed digital elevation model.

Resolution: 7.33 cm/pix
Point density: 186 points/m²

Processing Parameters

General

Cameras	131
Aligned cameras	131
Coordinate system	WGS 84 / UTM zone 33S (EPSG::32733)
Rotation angles	Yaw, Pitch, Roll

Point Cloud

Points	33,991 of 43,489
RMS reprojection error	0.268176 (2.20261 pix)
Max reprojection error	0.815227 (30.0654 pix)
Mean key point size	8.63863 pix
Point colors	3 bands, uint8
Key points	No
Average tie point multiplicity	3.07358

Alignment parameters

Accuracy	Medium
Generic preselection	No
Reference preselection	No
Key point limit	40,000
Tie point limit	1,000
Filter points by mask	No
Adaptive camera model fitting	Yes
Matching time	20 minutes 32 seconds
Alignment time	17 seconds

Dense Point Cloud

Points	16,681,585
Point colors	3 bands, uint8

Depth maps generation parameters

Quality	Medium
Filtering mode	Aggressive
Processing time	9 minutes 54 seconds

Dense cloud generation parameters

Processing time	1 minutes 42 seconds
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DEM

Size	7,695 x 7,770
Coordinate system	WGS 84 / UTM zone 33S (EPSG::32733)

Reconstruction parameters

Source data	Dense cloud
Interpolation	Enabled
Processing time	1 minutes 4 seconds

Orthomosaic

Size	19,716 x 21,060
Coordinate system	WGS 84 / UTM zone 33S (EPSG::32733)
Colors	3 bands, uint8

Reconstruction parameters

Blending mode	Mosaic
Surface	DEM
Enable color correction	No
Enable hole filling	Yes
Processing time	4 minutes 10 seconds

Software

General

Version

1.5.3 build 8407

Platform

Windows 64