

Ffridd_fawr_stitching_report

Processing Report

12 November 2018



Survey Data

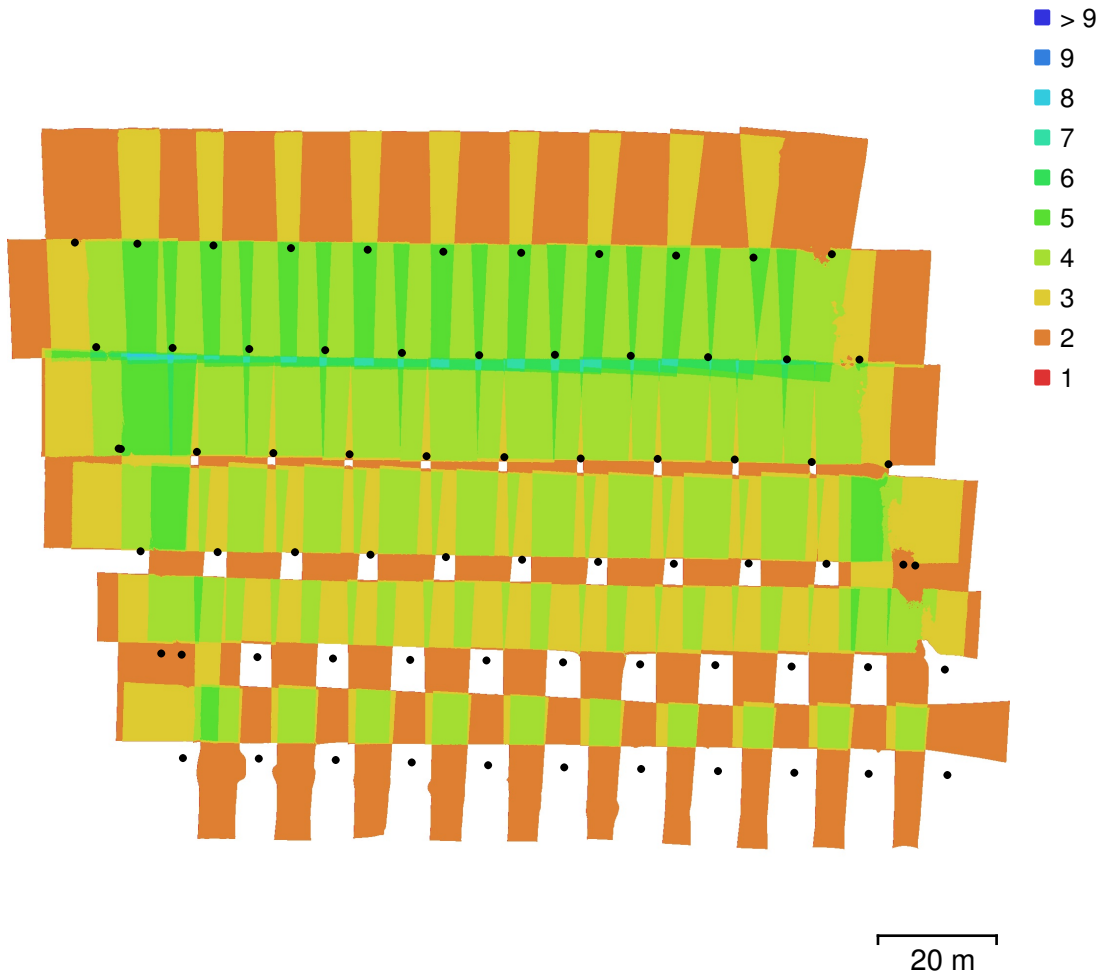


Fig. 1. Camera locations and image overlap.

Number of images:	70	Camera stations:	69
Flying altitude:	21.2 m	Tie points:	146,709
Ground resolution:	8.1 mm/pix	Projections:	312,642
Coverage area:	0.0156 km ²	Reprojection error:	0.419 pix

Camera Model	Resolution	Focal Length	Pixel Size	Precalibrated
FC330 (3.61mm)	4000 x 3000	3.61 mm	1.56 x 1.56 μ m	No

Table 1. Cameras.

Camera Calibration

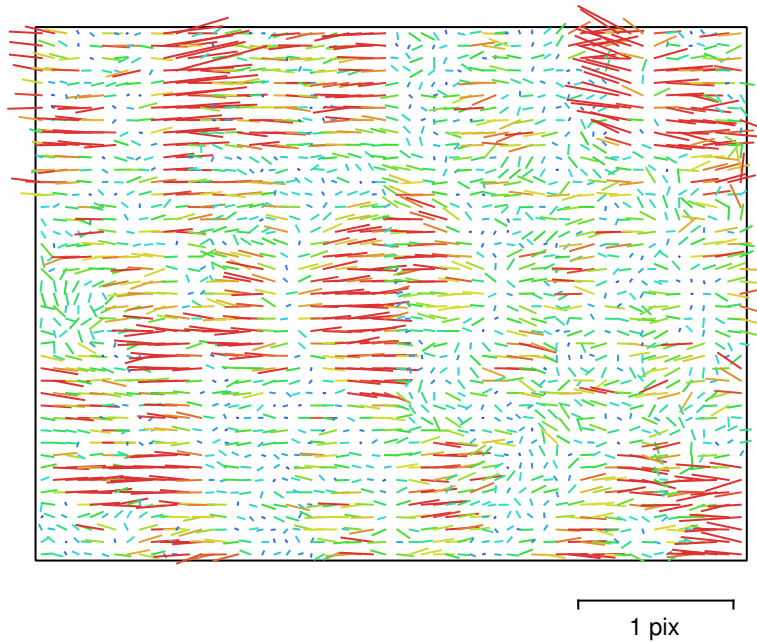


Fig. 2. Image residuals for FC330 (3.61mm).

FC330 (3.61mm)

70 images

Type	Resolution	Focal Length	Pixel Size
Frame	4000 x 3000	3.61 mm	1.56 x 1.56 μm

	Value	Error	K1	K2	K3
F	2311.25				
K1	-0.00858697	7.1e-05	1.00	-0.61	0.54
K2	0.00544435	8.6e-05		1.00	-0.98
K3	-0.00390399	4.9e-05			1.00

Table 2. Calibration coefficients and correlation matrix.

Camera Locations

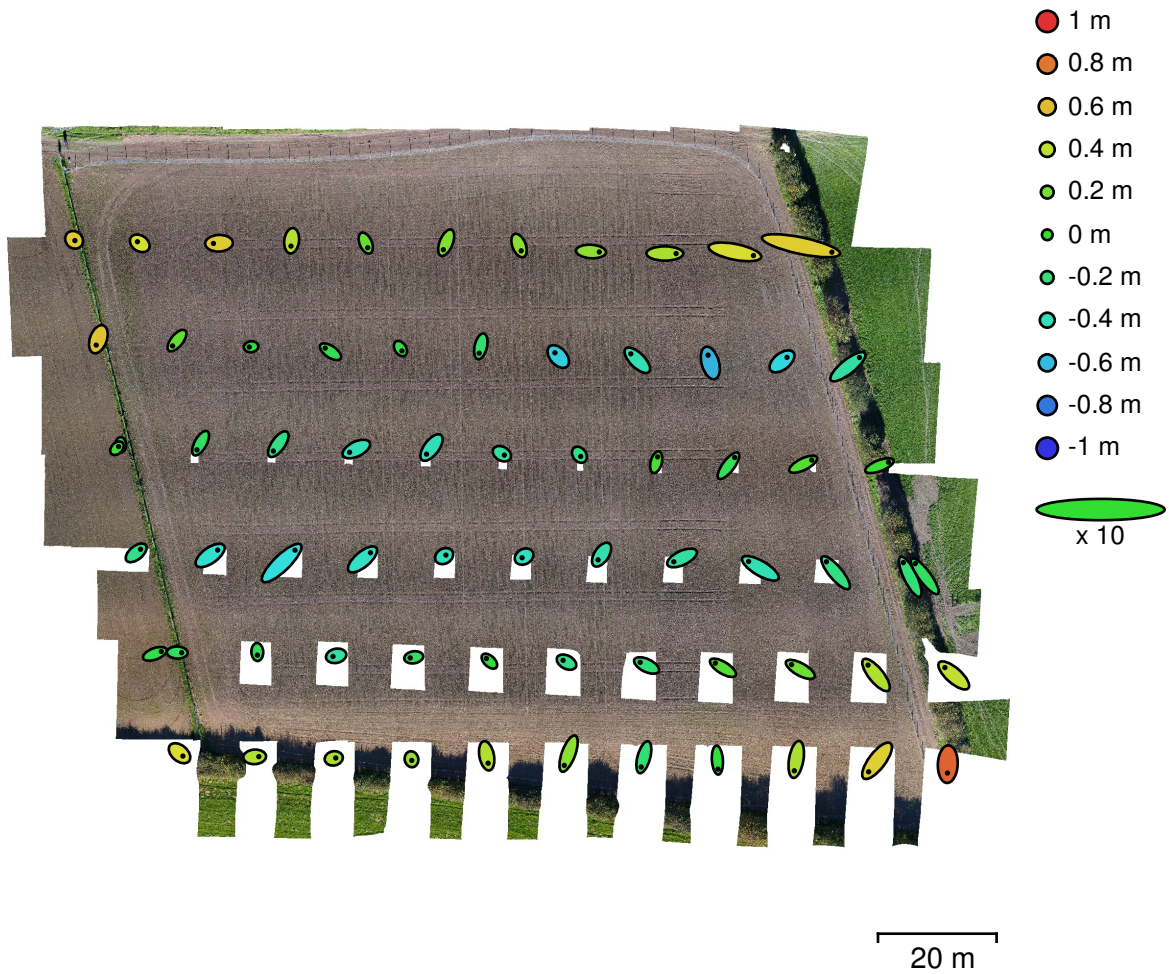


Fig. 3. Camera locations and error estimates.

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 (cm)	Y error (cm)	Z error (cm)	XY error (cm)	Total error (cm)
23.8818	20.6479	34.2332	31.5702	46.5682

Table 3. Average camera location error.

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

Digital Elevation Model

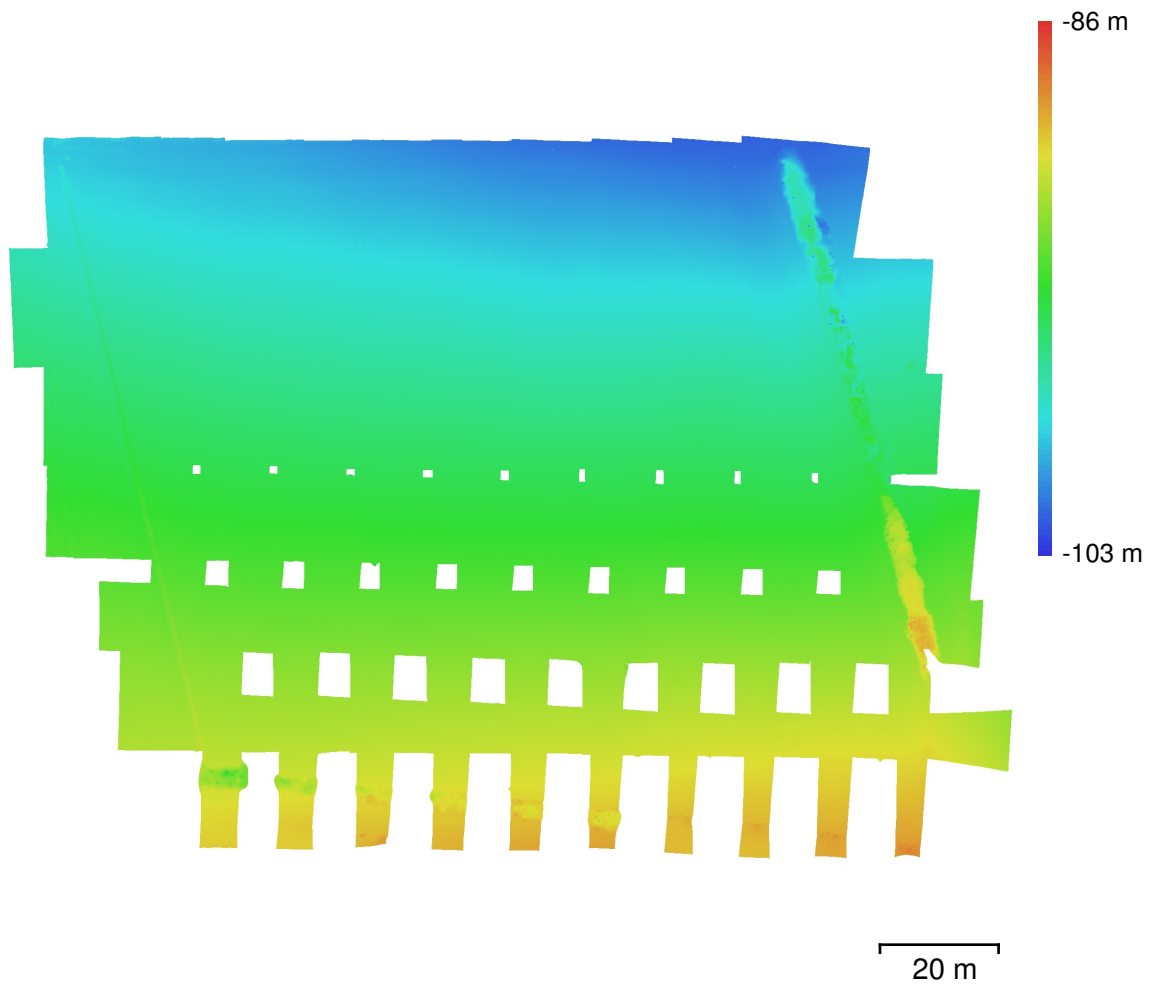


Fig. 4. Reconstructed digital elevation model.

Resolution: 1.62 cm/pix
Point density: 38.1 points/cm²

Processing Parameters

General

Cameras	70
Aligned cameras	69
Coordinate system	WGS 84 (EPSG::4326)
Rotation angles	Yaw, Pitch, Roll

Point Cloud

Points	146,709 of 154,675
RMS reprojection error	0.119785 (0.419032 pix)
Max reprojection error	0.359998 (11.0215 pix)
Mean key point size	3.28384 pix
Point colors	3 bands, uint8
Key points	No
Average tie point multiplicity	2.14117

Alignment parameters

Accuracy	High
Generic preselection	No
Reference preselection	Yes
Key point limit	100,000
Tie point limit	10,000
Adaptive camera model fitting	Yes
Matching time	2 minutes 20 seconds
Alignment time	41 seconds

Dense Point Cloud

Points	56,628,743
Point colors	3 bands, uint8

Reconstruction parameters

Quality	High
Depth filtering	Disabled
Depth maps generation time	36 seconds
Dense cloud generation time	1 minutes 41 seconds

DEM

Size	14,262 x 10,480
Coordinate system	WGS 84 (EPSG::4326)

Reconstruction parameters

Source data	Dense cloud
Interpolation	Enabled
Processing time	56 seconds

Orthomosaic

Size	20,872 x 15,018
Coordinate system	WGS 84 (EPSG::4326)
Colors	3 bands, uint8

Reconstruction parameters

Blending mode	Mosaic
Surface	DEM
Enable hole filling	Yes
Processing time	1 minutes 48 seconds

Software

Version	1.4.2 build 6205
Platform	Linux 64