

Ledeganck - Groep Gaia TOP

Processing Report
02 September 2025



Survey Data

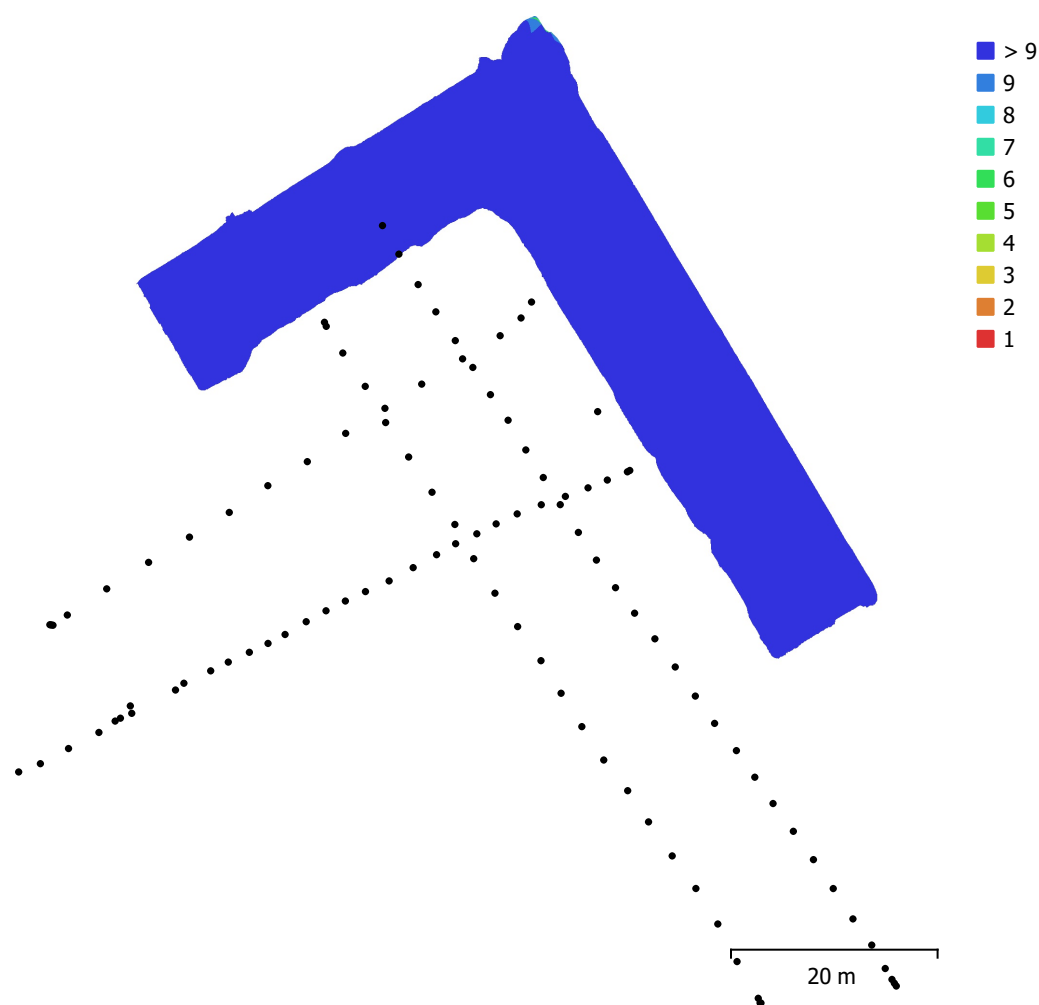


Fig. 1. Camera locations and image overlap.

Number of images:	105	Camera stations:	105
Flying altitude:	32.9 m	Tie points:	33,713
Ground resolution:	5.27 mm/pix	Projections:	121,090
Coverage area:	1.18e+03 m ²	Reprojection error:	0.949 pix

Camera Model	Resolution	Focal Length	Pixel Size	Precalibrated
FC8482 (6.72mm)	8064 x 6048	6.72 mm	1.2 x 1.2 μm	No
FC8482 (6.72mm)	8064 x 6048	6.72 mm	1.2 x 1.2 μm	No

Table 1. Cameras.

Camera Calibration

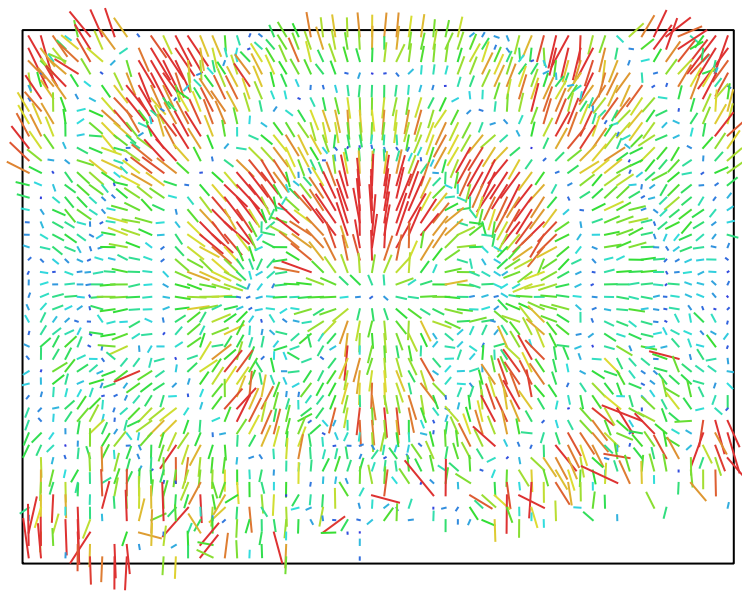


Fig. 2. Image residuals for FC8482 (6.72mm). 2 pix

FC8482 (6.72mm)

55 images

Type
Frame

Resolution
8064 x 6048

Focal Length
6.72 mm

Pixel Size
1.2 x 1.2 μm

	Value	Error	F	Cx	Cy	K1	K2	K3	P1	P2
F	5920.86	0.61	1.00	-0.05	0.28	0.11	0.01	-0.02	-0.05	0.21
Cx	11.5811	1.3		1.00	0.03	-0.04	0.04	-0.04	0.98	0.04
Cy	-18.5612	1.1			1.00	0.19	0.01	-0.04	0.04	0.96
K1	0.083097	0.00017				1.00	-0.93	0.86	-0.04	0.22
K2	-0.111145	0.00054					1.00	-0.98	0.04	-0.02
K3	0.0654838	0.00056						1.00	-0.04	-0.02
P1	-0.00033886	6.1e-05							1.00	0.05
P2	6.31062e-05	5.1e-05								1.00

Table 2. Calibration coefficients and correlation matrix.

Camera Calibration

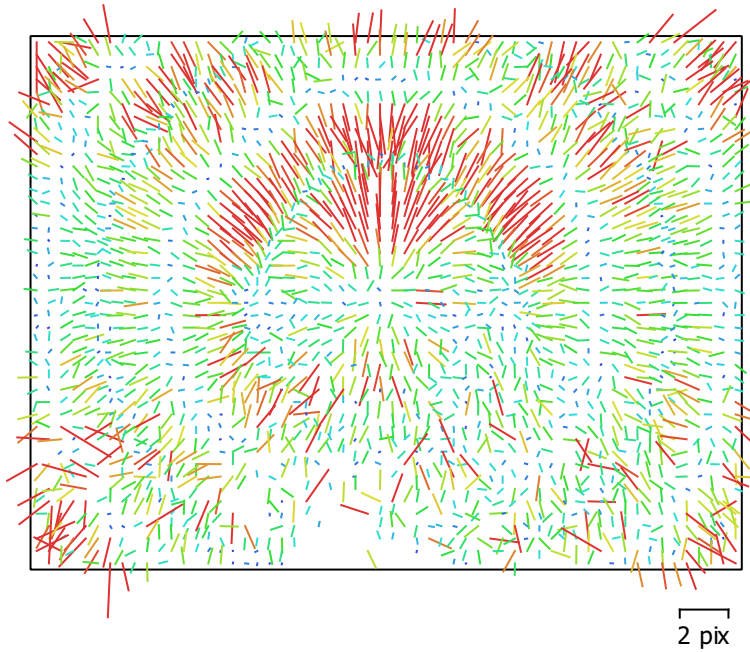


Fig. 3. Image residuals for FC8482 (6.72mm).

FC8482 (6.72mm)

50 images

Type
Frame

Resolution
8064 x 6048

Focal Length
6.72 mm

Pixel Size
1.2 x 1.2 μm

	Value	Error	F	Cx	Cy	K1	K2	K3	P1	P2
F	5923.4	0.56	1.00	-0.10	0.37	0.17	-0.01	-0.01	-0.09	0.27
Cx	5.88416	1.2		1.00	-0.15	-0.08	0.06	-0.05	0.99	-0.13
Cy	-2.07675	1.1			1.00	0.22	-0.06	0.03	-0.15	0.97
K1	0.0837592	0.00021				1.00	-0.94	0.88	-0.08	0.22
K2	-0.115318	0.00063					1.00	-0.98	0.05	-0.08
K3	0.0685652	0.00062						1.00	-0.05	0.04
P1	-7.62113e-05	5.8e-05							1.00	-0.14
P2	0.000487339	5.1e-05								1.00

Table 3. Calibration coefficients and correlation matrix.

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)
5	1.58769	4.50806	3.81805	4.77947	6.11726

Table 4. Control points RMSE.

Count	X error (cm)	Y error (cm)	Z error (cm)	XY error (cm)	Total (cm)
2	3.99187	2.26743	4.22002	4.59089	6.23577

Table 5. Check points RMSE.

Label	X error (cm)	Y error (cm)	Z error (cm)	Total (cm)	Image (pix)
F1	0.711255	-1.73512	1.51686	2.41193	2.596 (16)
F2	-1.19736	-0.335327	1.11492	1.67008	2.045 (21)
F4	-1.88825	7.34726	-7.0196	10.3355	1.799 (26)
F5	-0.275671	-6.54898	4.4789	7.93887	2.519 (31)
F7	2.65003	1.27217	-0.0910854	2.94099	2.418 (21)
Total	1.58769	4.50806	3.81805	6.11726	2.283

Table 6. Control points.

Label	X error (cm)	Y error (cm)	Z error (cm)	Total (cm)	Image (pix)
F3	-4.10966	2.23606	5.83433	7.47855	2.425 (24)
F6	3.87051	-2.29837	-1.25606	4.67344	1.670 (29)
point 1_origin					1.682 (3)
point 2_horizontal					0.522 (2)
point 3_vertical					0.732 (2)
Total	3.99187	2.26743	4.22002	6.23577	2.047

Table 7. Check points.

Digital Elevation Model

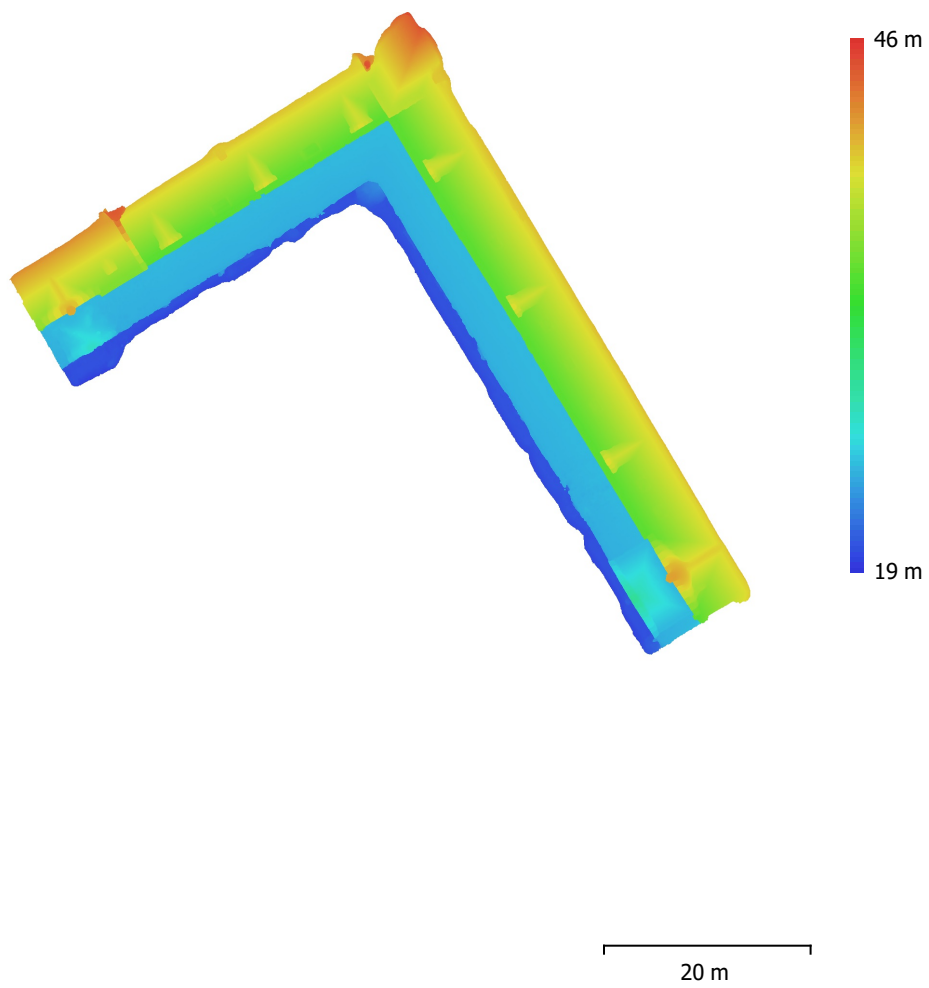


Fig. 5. Reconstructed digital elevation model.

Resolution: 2.11 cm/pix
Point density: 0.225 points/cm²

Processing Parameters

General

Cameras	105
Aligned cameras	105
Markers	10
Coordinate system	Local Coordinates (m)
Rotation angles	Yaw, Pitch, Roll

Point Cloud

Points	33,713 of 87,315
RMS reprojection error	0.349249 (0.949167 pix)
Max reprojection error	0.968249 (4.23214 pix)
Mean key point size	2.68449 pix
Point colors	3 bands, uint8
Key points	No
Average tie point multiplicity	5.10672

Optimization parameters

Parameters	f, cx, cy, k1-k3, p1, p2
Adaptive camera model fitting	No
Optimization time	0 seconds

Depth Maps

Count	105
Depth maps generation parameters	
Quality	Medium
Filtering mode	Mild
Processing time	3 minutes 32 seconds
Software version	1.6.3.10732

Dense Point Cloud

Points	6,760,301
Point colors	3 bands, uint8

Depth maps generation parameters

Quality	Medium
Filtering mode	Mild
Processing time	3 minutes 32 seconds

Dense cloud generation parameters

Processing time	3 minutes 40 seconds
Software version	1.6.3.10732

Model

Faces	1,348,185
Vertices	675,871
Vertex colors	3 bands, uint8
Texture	4,096 x 4,096, 4 bands, uint8

Depth maps generation parameters

Quality	Medium
Filtering mode	Mild
Processing time	3 minutes 32 seconds

Reconstruction parameters

Surface type	Arbitrary
Source data	Dense cloud
Interpolation	Enabled
Strict volumetric masks	No
Processing time	1 minutes 41 seconds

Texturing parameters	
Mapping mode	Generic
Blending mode	Mosaic
Texture size	4,096
Enable hole filling	Yes
Enable ghosting filter	Yes
UV mapping time	1 minutes 12 seconds
Blending time	23 seconds
Software version	1.6.3.10732
DEM	
Size	3,596 x 2,661
Coordinate system	Local Coordinates (m)
Reconstruction parameters	
Source data	Dense cloud
Interpolation	Enabled
Processing time	2 seconds
Software version	1.6.3.10732
Orthomosaic	
Size	13,613 x 11,800
Coordinate system	Local Coordinates (m)
Colors	3 bands, uint8
Reconstruction parameters	
Blending mode	Mosaic
Surface	Mesh
Enable hole filling	Yes
Processing time	42 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	31.84 GB
CPU	13th Gen Intel(R) Core(TM) i7-13700KF
GPU(s)	NVIDIA GeForce RTX 4070