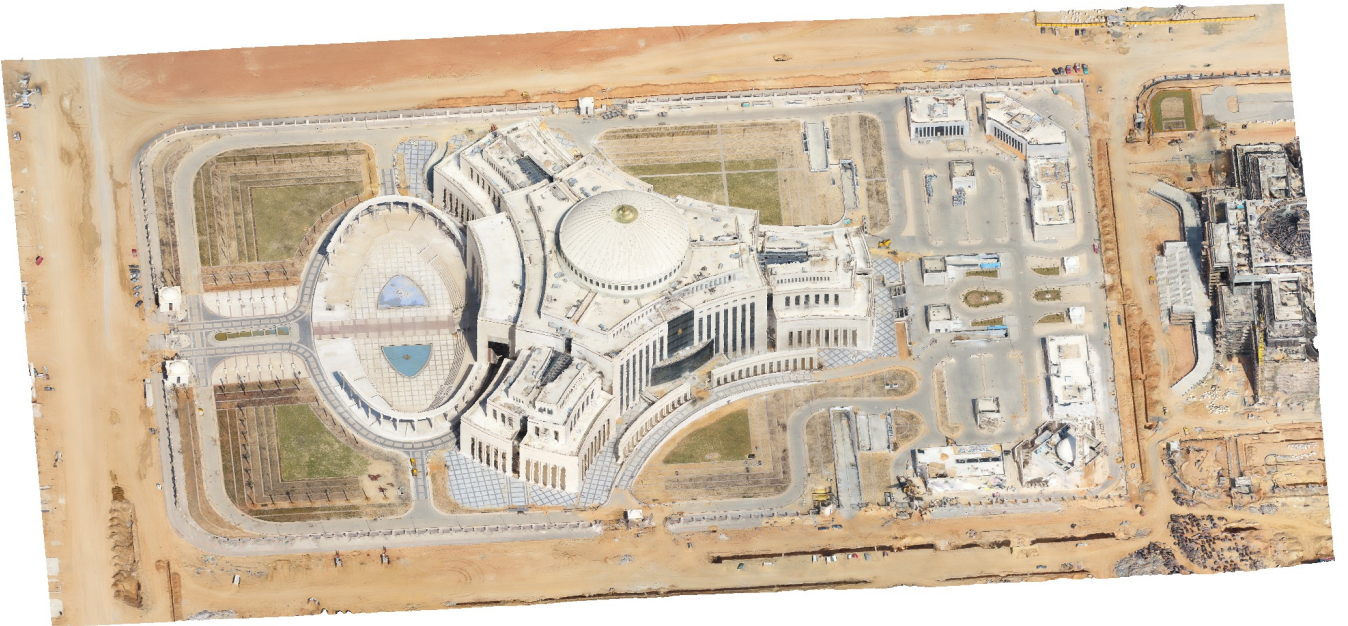


تقرير مفصل عن النموذج

المسح التصويري
محمد حامد - زياد أشرف

23 February 2021



Survey Data

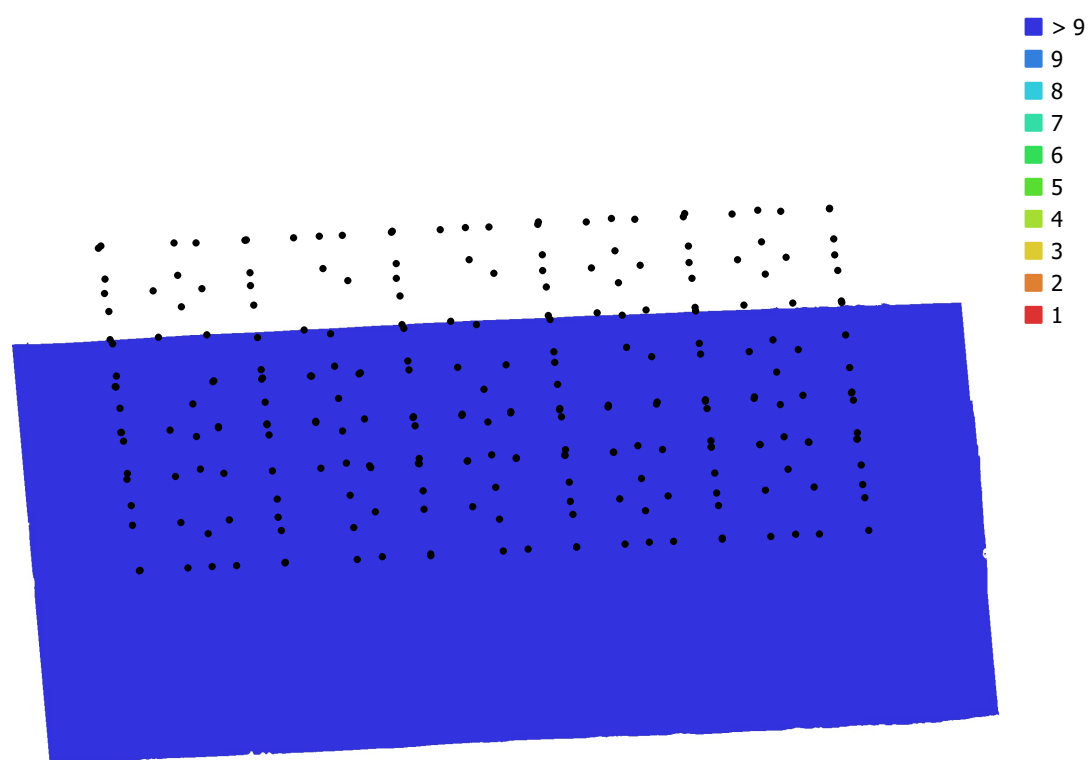


Fig. 1. Camera locations and image overlap.

Number of images:	248	Camera stations:	248
		Tie points:	339,986
		Projections:	924,890
		Reprojection error:	0.414 pix

Camera Model	Resolution	Focal Length	Pixel Size	Precalibrated
FC6310 (8.8mm)	5472 x 3648	8.8 mm	2.41 x 2.41 μ m	No

Table 1. Cameras.

Camera Calibration

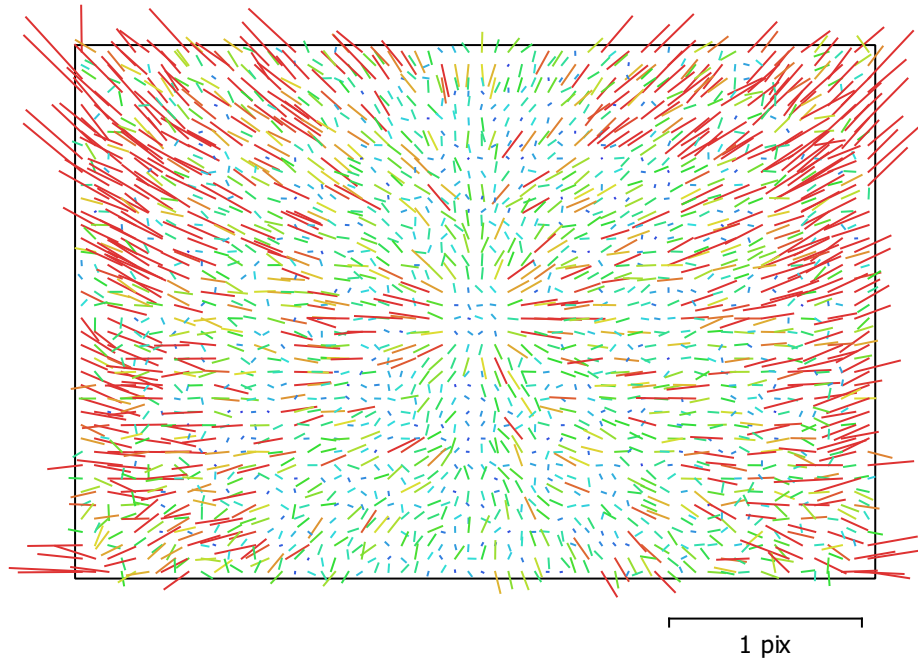


Fig. 2. Image residuals for FC6310 (8.8mm).

FC6310 (8.8mm)

248 images

Type
Frame

Resolution
5472 x 3648

Focal Length
8.8 mm

Pixel Size
2.41 x 2.41 μm

	Value	Error	F	Cx	Cy	K1	K2	K3	P1	P2
F	3660.21	0.044	1.00	-0.01	-0.86	-0.10	0.20	-0.20	-0.01	-0.48
Cx	-13.1876	0.029		1.00	0.02	-0.01	0.00	-0.00	0.92	0.01
Cy	-1.22278	0.066			1.00	-0.16	-0.02	0.06	0.01	0.78
K1	0.0027616	2.7e-05				1.00	-0.93	0.86	-0.02	-0.22
K2	-0.00896582	7.8e-05					1.00	-0.98	0.02	0.02
K3	0.00900118	7e-05						1.00	-0.02	0.03
P1	-0.000972731	2.6e-06							1.00	0.01
P2	-0.00016318	3.8e-06								1.00

Table 2. Calibration coefficients and correlation matrix.

Digital Elevation Model

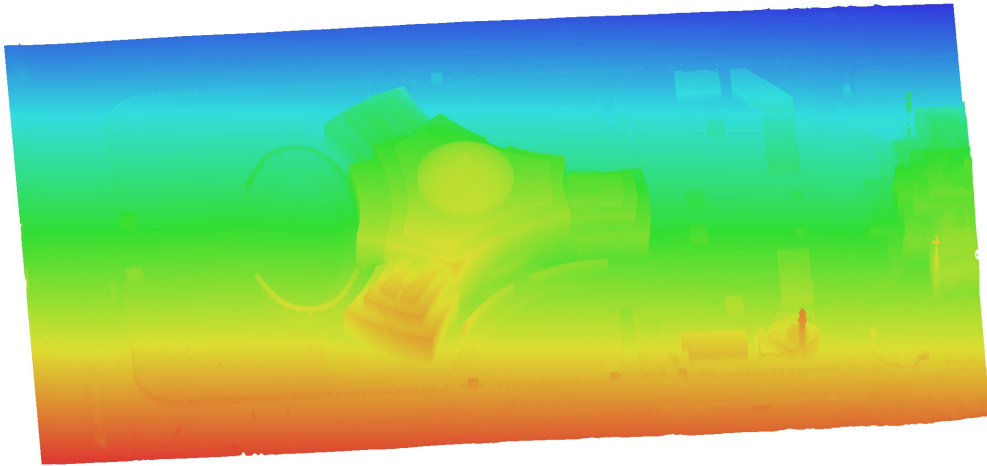


Fig. 3. Reconstructed digital elevation model.

Processing Parameters

General

Cameras	248
Aligned cameras	248
Coordinate system	WGS 84 (EPSG::4326)
Rotation angles	Yaw, Pitch, Roll

Point Cloud

Points	339,986 of 361,992
RMS reprojection error	0.178195 (0.414002 pix)
Max reprojection error	0.536709 (22.2284 pix)
Mean key point size	2.19177 pix
Point colors	3 bands, uint8
Key points	No
Average tie point multiplicity	2.78237

Alignment parameters

Accuracy	Highest
Generic preselection	Yes
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 54 seconds
Matching memory usage	360.39 MB
Alignment time	2 minutes 26 seconds
Alignment memory usage	160.02 MB
Software version	1.6.4.10928
File size	24.22 MB

Depth Maps

Count	243
Depth maps generation parameters	
Quality	High
Filtering mode	Mild
Processing time	26 minutes 14 seconds
Memory usage	1.47 GB
Software version	1.6.4.10928
File size	1.24 GB

Dense Point Cloud

Points	49,099,895
Point colors	3 bands, uint8
Depth maps generation parameters	
Quality	High
Filtering mode	Mild
Processing time	26 minutes 14 seconds
Memory usage	1.47 GB
Dense cloud generation parameters	
Processing time	1 hours 43 minutes
Memory usage	10.86 GB
Software version	1.6.4.10928
File size	655.71 MB

Model

Faces	9,819,850
Vertices	4,918,073
Vertex colors	3 bands, uint8
Texture	4,096 x 4,096, 4 bands, uint8
Depth maps generation parameters	
Quality	High
Filtering mode	Mild
Processing time	26 minutes 14 seconds
Memory usage	1.47 GB
Reconstruction parameters	
Surface type	Arbitrary
Source data	Dense cloud
Interpolation	Enabled
Strict volumetric masks	No
Processing time	1 hours 19 minutes
Memory usage	13.68 GB
Texturing parameters	
Mapping mode	Generic
Blending mode	Mosaic
Texture size	4,096
Enable hole filling	Yes
Enable ghosting filter	Yes
UV mapping time	6 minutes 56 seconds
UV mapping memory usage	2.99 GB
Blending time	6 minutes 34 seconds
Blending memory usage	3.08 GB
Software version	1.6.4.10928
File size	445.28 MB
System	
Software name	Agisoft Metashape Professional
Software version	1.6.4 build 10928
OS	Windows 64 bit
RAM	15.89 GB
CPU	Intel(R) Core(TM) i7-7700 CPU @ 3.60GHz
GPU(s)	GeForce GTX 1060 3GB