

Agisoft PhotoScan

Processing Report

11 January 2016



Survey Data

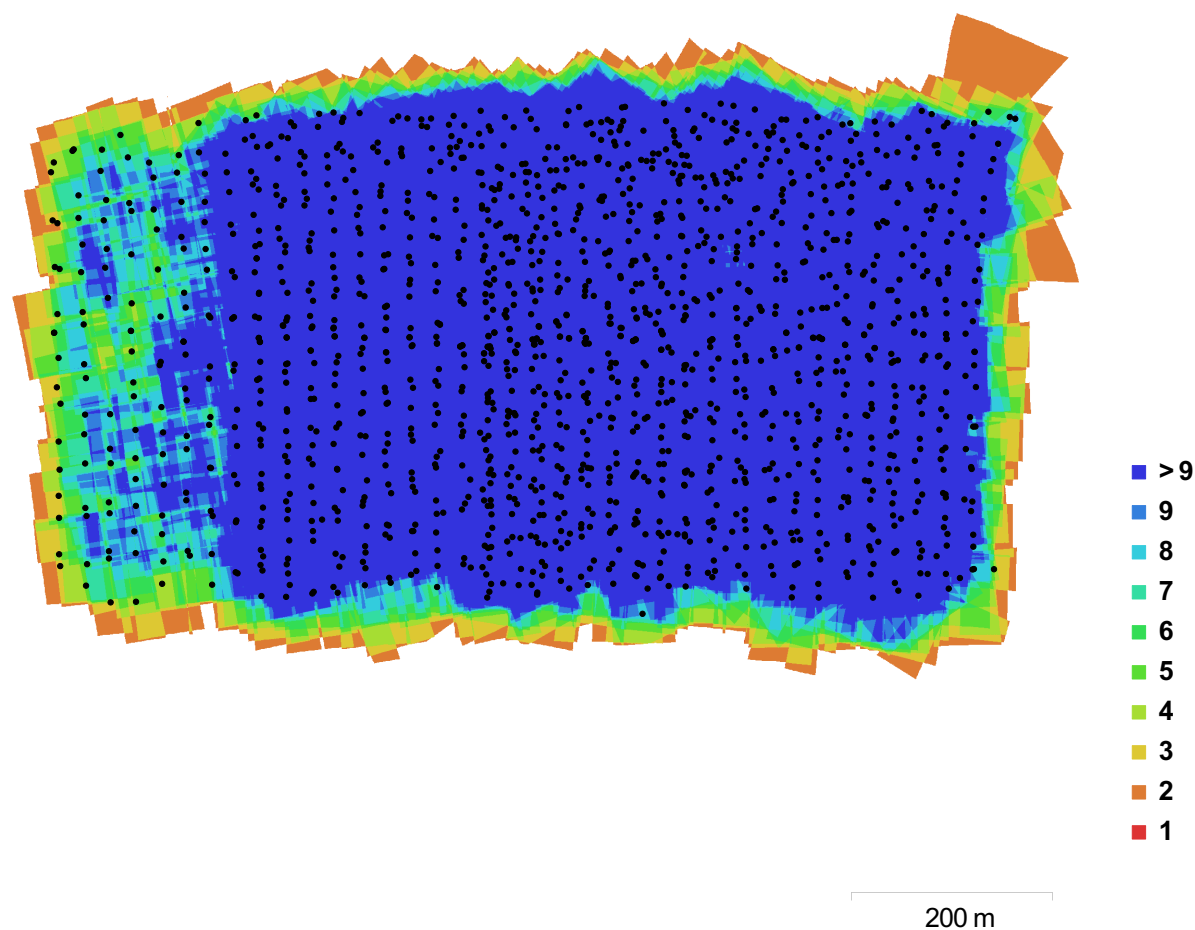


Fig. 1. Camera locations and image overlap.

Number of images:	1,604	Camera stations:	1,590
Flying altitude:	124 m	Tie points:	5,482,506
Ground resolution:	2.31 cm/pix	Projections:	18,311,951
Coverage area:	5.66e+05 sq m	Reprojection error:	0.734 pix

Camera Model		Resolution	Focal Length	Pixel Size	Precalibrated
E-420	(25 mm)	3648 x 2736	25 mm	unknown	No
E-420	(25 mm)	3648 x 2736	25 mm	unknown	No

Table 1. Cameras.

Camera Calibration

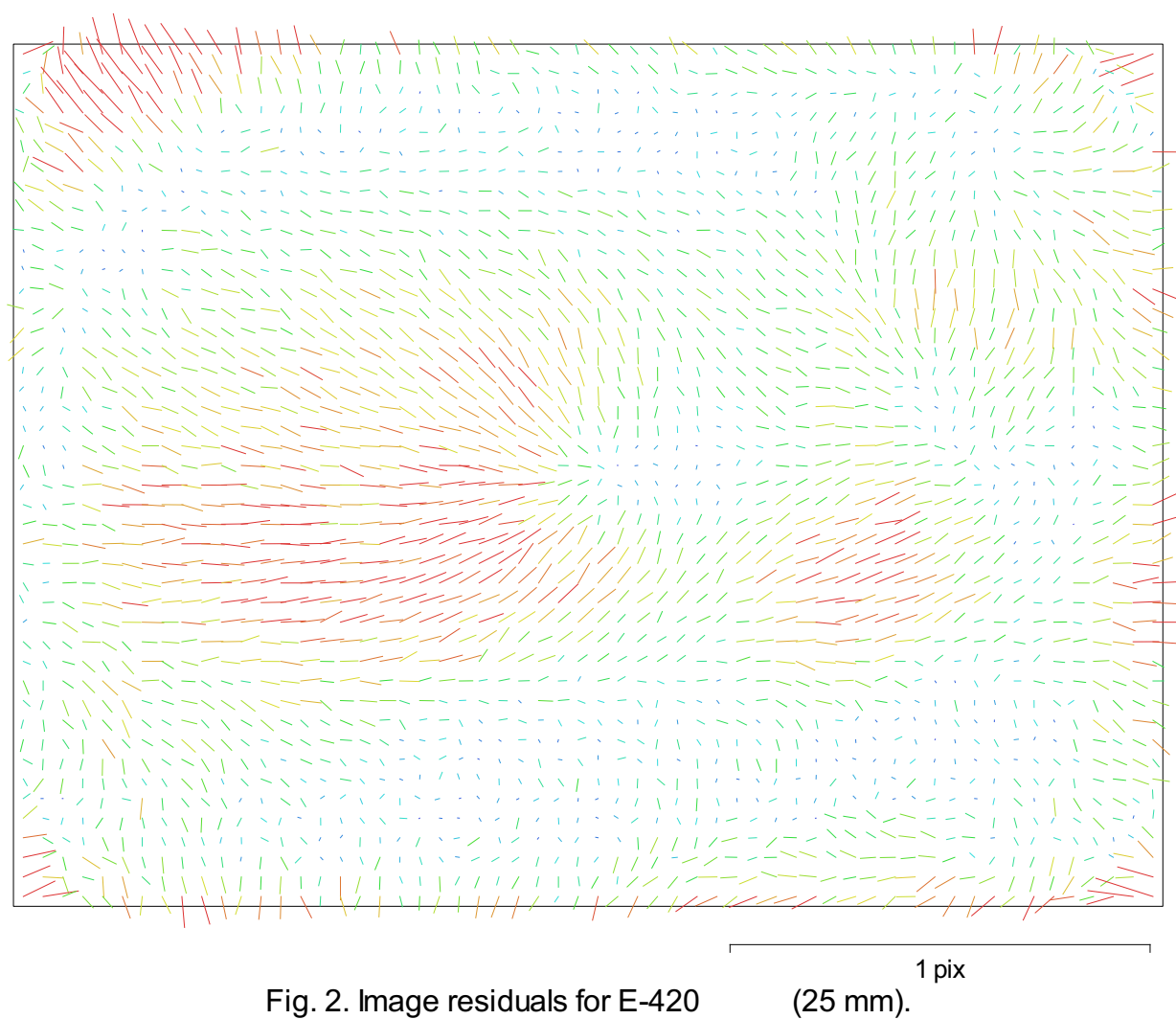


Fig. 2. Image residuals for E-420

E-420 **(25 mm)**
828 images

Resolution	Focal Length	Pixel Size	Precalibrated
3648 x 2736	25 mm	unknown	No
Type:	Frame	Skew:	2.75915
Fx:	5257.67	Cx:	1801.39
Fy:	5257.53	Cy:	1383.34
K1:	-0.18102	P1:	-0.00013042
K2:	0.249488	P2:	0.000366409
K3:	-0.499496	P3:	0
K4:	0	P4:	0

Camera Calibration

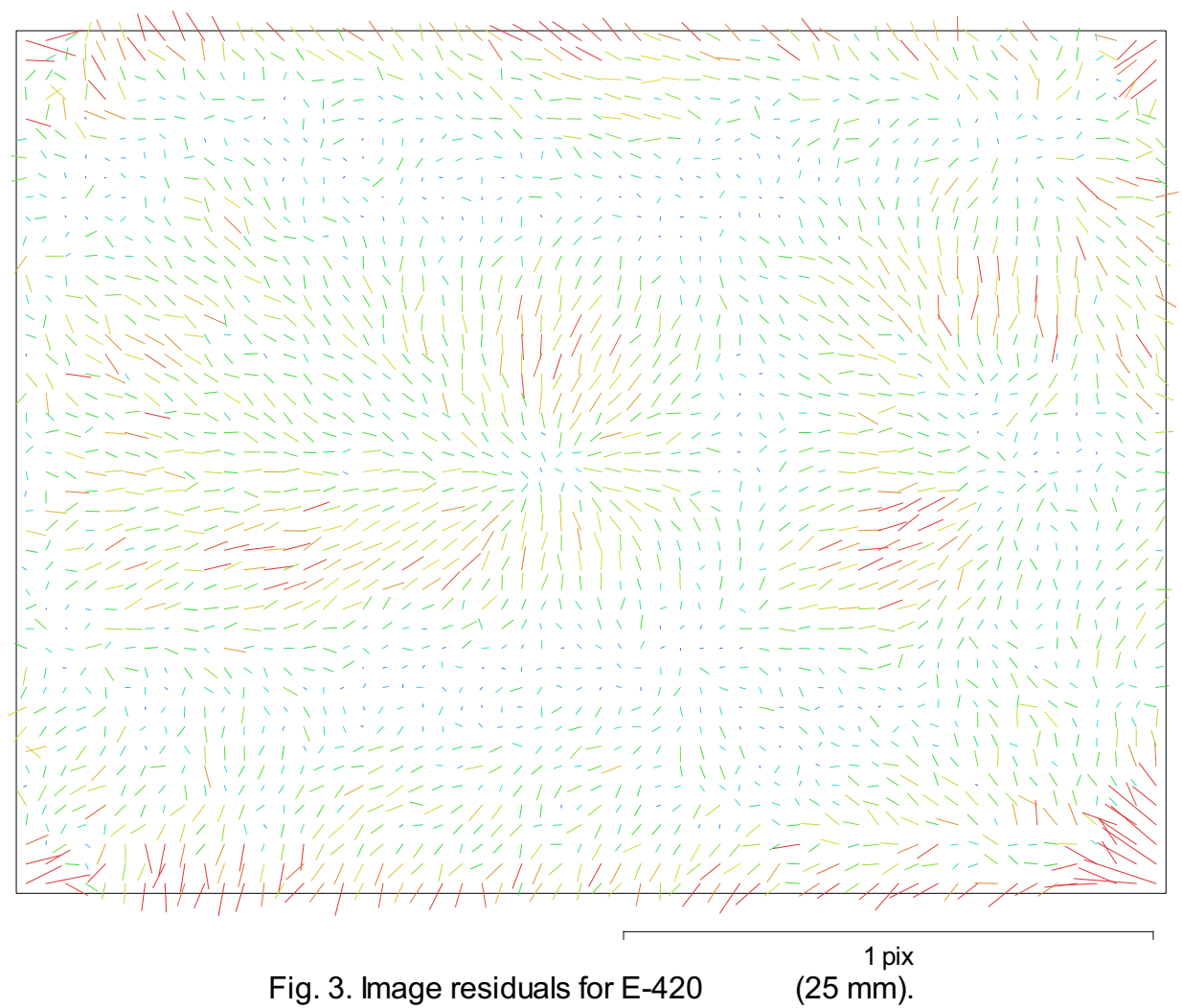


Fig. 3. Image residuals for E-420

E-420 **(25 mm)**
776 images

Resolution	Focal Length	Pixel Size	Precalibrated
3648 x 2736	25 mm	unknown	No
Type:	Frame	Skew:	3.06698
Fx:	5282.49	Cx:	1813.76
Fy:	5283.07	Cy:	1381.1
K1:	-0.18245	P1:	-0.000107514
K2:	0.249862	P2:	0.000140924
K3:	-0.497459	P3:	0
K4:	0	P4:	0

Ground Control Points

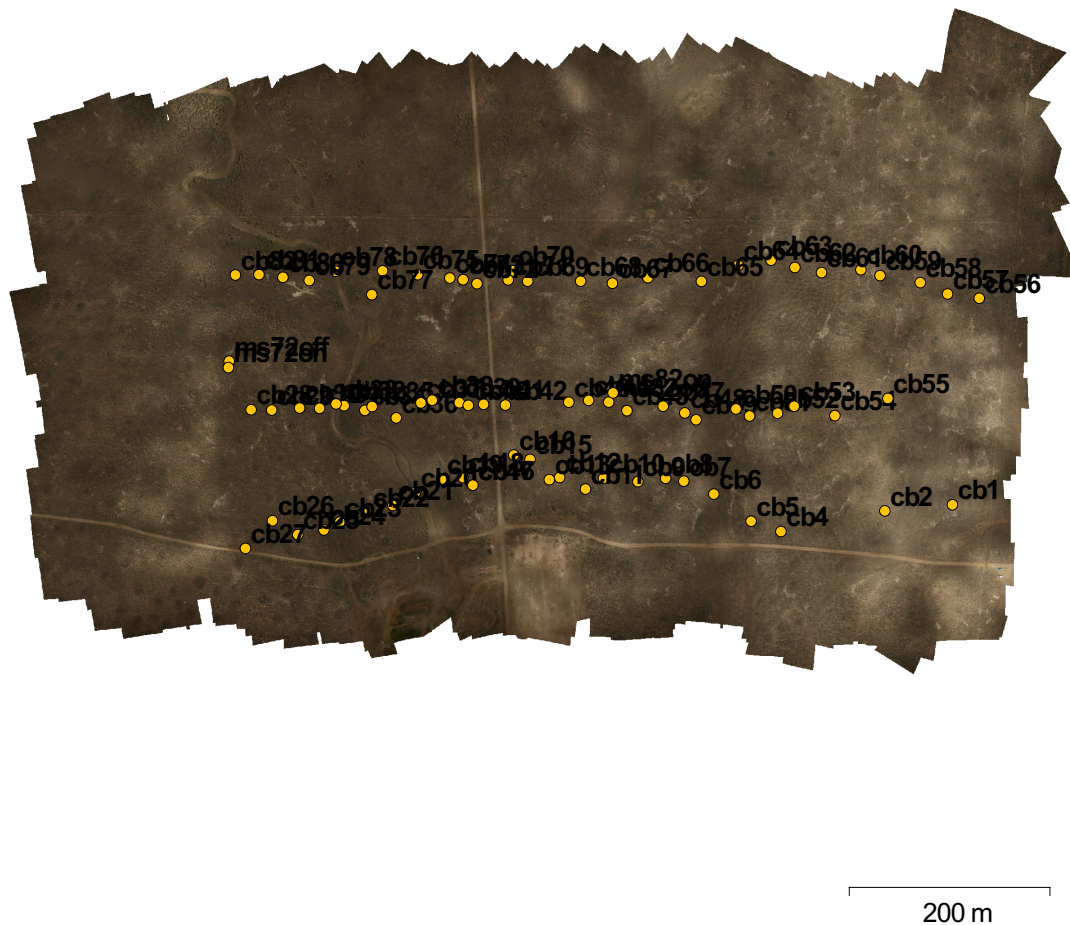


Fig. 4. GCP locations.

Label	XY error (m)	Z error (m)	Error (m)	Projections	Error (pix)
cb1	0.0217481	0.00285709	0.021935	17	0.130
cb2	0.00693319	-0.00489447	0.00848676	24	0.130
cb4	0.017751	-0.000448871	0.0177567	18	0.211
cb5	0.0171091	0.00384671	0.0175362	17	0.187
cb6	0.0170114	0.00149432	0.0170769	26	0.089
cb7	0.00669888	-0.00210632	0.00702223	26	0.161
cb8	0.0167284	-0.0153147	0.0226799	20	0.271
cb9	0.00469295	0.0339455	0.0342684	23	0.242
cb10	0.0163889	-0.0228729	0.0281383	26	0.231

Label	XY error (m)	Z error (m)	Error (m)	Projections	Error (pix)
cb11	0.0147069	0.00720505	0.016377	27	0.219
cb12	0.0041782	0.00132905	0.00438449	33	0.307
cb13	0.0793832	-0.00924639	0.0799199	31	0.259
cb15	0.0212973	-0.00894667	0.0231002	31	0.278
cb16	0.0124454	0.00176406	0.0125698	35	0.222
cb17	0.014511	0.0136026	0.0198897	29	0.359
cb18	0.0458714	-0.0432174	0.0630232	26	0.764
cb19	0.0493093	0.0158268	0.0517871	17	0.309
cb20	0.02486	-0.0271502	0.0368124	20	0.170
cb21	0.00278573	0.0341183	0.0342319	17	0.119
cb22	0.0201844	-0.0208362	0.0290096	16	0.113
cb23	0.0215589	0.0098952	0.0237213	19	0.170
cb24	0.0117489	0.0117619	0.0166247	16	0.176
cb25	0.0297004	-0.0237896	0.0380534	20	0.161
cb26	0.0212017	0.0174199	0.0274402	18	0.084
cb27	0.0278329	-0.00496667	0.0282726	16	0.068
cb28	0.0535527	-0.00682362	0.0539856	17	0.200
cb29	0.00891139	-0.00033866	0.00891782	21	0.182
cb30	0.00986287	-0.0100671	0.0140933	18	0.229
cb31	0.0574504	0.0021133	0.0574893	17	0.224
cb32	0.0134836	0.0207202	0.0247212	16	0.312
cb33	0.0118798	-0.000773994	0.011905	16	0.214
cb34	0.0255933	0.00820137	0.0268753	19	0.230
cb35	0.0300357	-0.0182037	0.0351215	19	0.281
cb36	0.0209446	-0.00397413	0.0213183	15	0.152
cb37	0.0432934	-0.00784994	0.0439993	16	0.314
cb38	0.0186228	0.00795055	0.020249	15	0.302
cb39	0.0325294	0.000432014	0.0325323	22	0.535
cb40	0.0100722	-0.0120332	0.0156923	22	0.431
cb41	0.0161304	0.0376285	0.0409401	25	0.290
cb42	0.0170466	-0.0059492	0.0180549	26	0.251
cb43	0.0225811	0.00287851	0.0227639	24	0.158
cb44	0.0451453	-0.0209766	0.0497807	24	0.253

Label	XY error (m)	Z error (m)	Error (m)	Projections	Error (pix)
cb45	0.0456996	-0.00073368	0.0457055	21	0.275
cb46	0.0373473	0.02146	0.0430738	29	0.355
cb47	0.0119685	0.00479505	0.0128933	22	0.211
cb48	0.00819962	0.00500078	0.00960425	23	0.291
cb49	0.00117231	-0.0137017	0.0137517	18	0.376
cb50	0.0208221	0.00743797	0.0221107	18	0.165
cb51	0.0452568	-0.00267821	0.0453359	19	0.174
cb52	0.0278283	-0.0370012	0.046298	21	0.417
cb53	0.0456385	0.044574	0.0637943	18	0.458
cb54	0.0215434	0.00459878	0.0220287	16	0.196
cb55	0.0220736	-0.00811043	0.0235165	18	0.141
cb56	0.0313117	0.0108137	0.0331264	9	0.212
cb57	0.045554	-0.0187661	0.0492679	17	0.225
cb58	0.102904	0.0177731	0.104428	19	0.123
cb59	0.101387	0.00809629	0.10171	16	0.192
cb60	0.0300621	-0.0246663	0.0388864	13	0.159
cb61	0.0959347	-0.00718741	0.0962036	12	0.142
cb62	0.0711227	-0.0629214	0.0949608	14	0.346
cb63	0.0586718	0.13719	0.14921	13	0.477
cb64	0.0838373	-0.0548439	0.100183	14	0.272
cb65	0.0581582	-0.00653405	0.0585241	21	0.104
cb66	0.0560688	0.00976729	0.0569132	35	0.110
cb67	0.0796588	0.00766604	0.0800268	32	0.167
cb68	0.0286662	-0.0111251	0.0307493	32	0.126
cb69	0.0569938	0.00825848	0.057589	30	0.229
cb70	0.0970777	-0.00158998	0.0970907	28	0.330
cb71	0.036872	-0.0064322	0.0374288	34	0.293
cb72	0.0304637	0.00920969	0.0318254	34	0.225
cb73	0.0497197	-0.0113677	0.0510027	32	0.254
cb74	0.0766941	-0.00658688	0.0769765	23	0.212
cb75	0.0202282	0.00623087	0.0211661	14	0.178
cb76	0.0767568	0.0215734	0.0797309	19	0.208
cb77	0.0197878	-0.0115907	0.0229325	17	0.171

Label	XY error (m)	Z error (m)	Error (m)	Projections	Error (pix)
cb78	0.0396742	0.00198227	0.0397236	22	0.418
cb79	0.00875295	-0.0310852	0.032294	27	0.466
cb80	0.0123773	0.0107388	0.0163866	27	0.194
cb81	0.045299	0.0060803	0.0457053	16	0.134
cb82	0.0208275	-0.00227031	0.0209508	14	0.082
ms72off	0.0479139	-0.00148508	0.0479369	11	0.303
ms72on	0.0927303	0.0118983	0.0934906	7	0.382
ms82off	0.0109285	0.0232907	0.0257272	25	0.468
ms82on	0.0448194	-0.00942288	0.0457992	26	0.414
Total	0.0427295	0.023364	0.0487		0.277

Table 2. Control points.

Digital Elevation Model

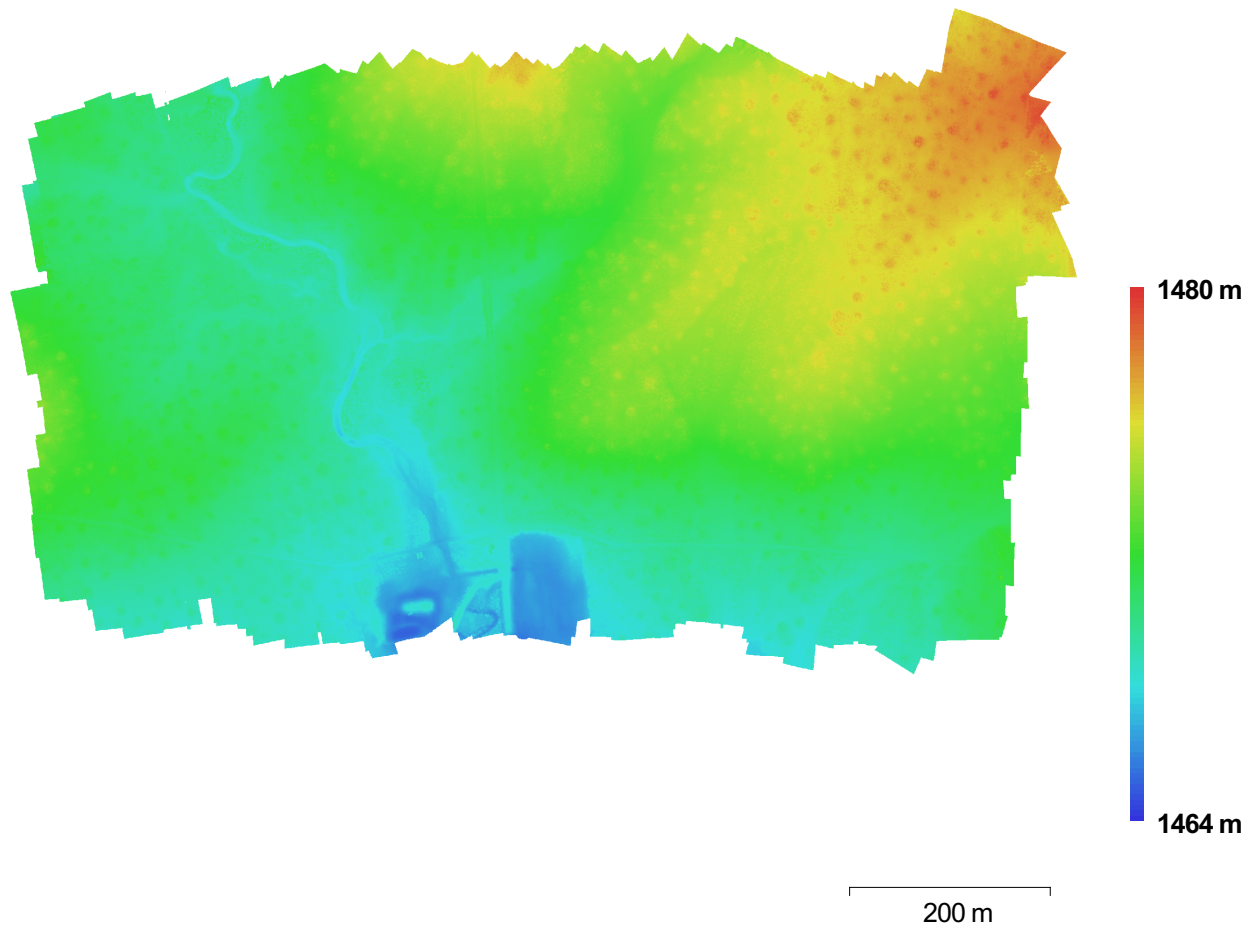


Fig. 5. Reconstructed digital elevation model.

Resolution: 9.24 cm/pix
Point density: 117.165 points per sq m

Processing Parameters

General

Cameras	1604
Aligned cameras	1590
Markers	84
Coordinate system	WGS 84 (EPSG:4326)

Point Cloud

Points	5,482,506 of 5,887,612
RMS reprojection error	0.180421 (0.734088 pix)
Max reprojection error	3.50041 (30.0407 pix)
Mean key point size	3.83246 pix
Effective overlap	3.7473

Optimization parameters

Parameters	fx, fy, cx, cy, skew, k1-k3, p1, p2
Optimization time	3 minutes 20 seconds

Depth Maps

Count	1590
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Reconstruction parameters

Quality	Medium
Filtering mode	Aggressive
Processing time	4 hours 46 minutes

Dense Point Cloud

Points	81,237,145
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Reconstruction parameters

Quality	Medium
Depth filtering	Aggressive
Processing time	1 hours 7 minutes

Model

Faces	16,093,571
Vertices	8,055,305
Texture	8,192 x 8,192, uint8

Reconstruction parameters

Surface type	Height field
Source data	Dense
Interpolation	Enabled
Quality	Medium
Depth filtering	Aggressive
Face count	16,247,429
Processing time	3 minutes 34 seconds

Texturing parameters

Mapping mode	Orthophoto
Blending mode	Mosaic
Texture size	8,192 x 8,192
UV mapping time	4 minutes 45 seconds
Blending time	3 hours 19 minutes

DEM

Size	12,673 x 8,266
Coordinate system	WGS 84 (EPSG:4326)

Reconstruction parameters

Source data	Dense cloud
Interpolation	Enabled

Orthomosaic

Size	46,073 x 28,728
Coordinate system	WGS 84 (EPSG:4326)
Channels	3, uint8
Blending mode	Mosaic

Reconstruction parameters

Surface
Enable color correction

DEM
Yes