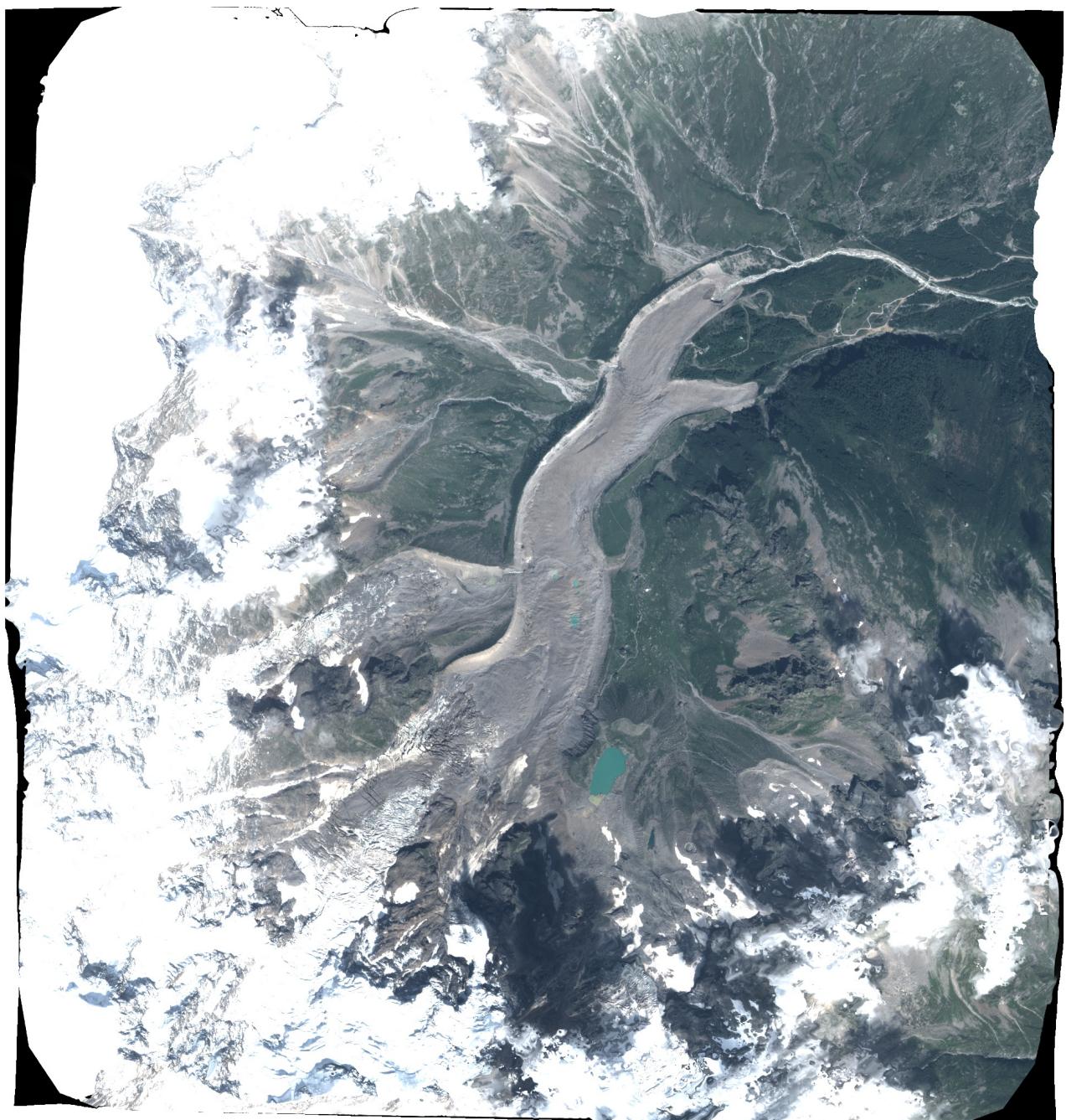


Agisoft Metashape

Processing Report
02 January 2024



Survey Data



Fig. 1. Camera locations and image overlap.

Number of images:	2	Camera stations:	2
Flying altitude:	1.49 km	Tie points:	2,533
Ground resolution:	52 cm/pix	Projections:	5,066
Coverage area:	39.5 km ²	Reprojection error:	0.757 pix

Camera Model	Resolution	Focal Length	Pixel Size	Precalibrated
unknown	12346 x 12465	unknown	unknown	RPC
unknown	12130 x 12083	unknown	unknown	RPC

Table 1. Cameras.

Camera Locations

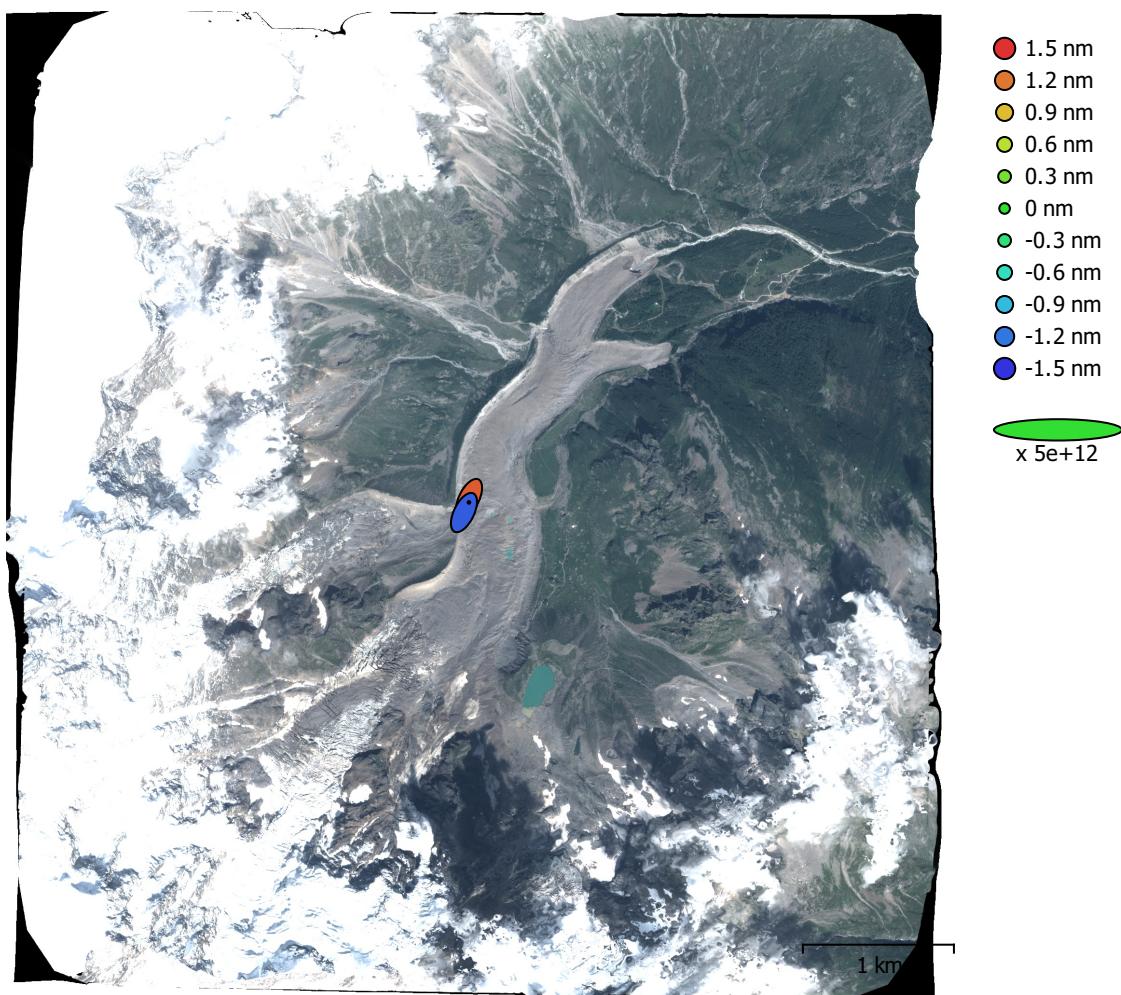


Fig. 2. Camera locations and error estimates.

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 (nm)	Y error (nm)	Z error (nm)	XY error (nm)	Total error (nm)
0.0132083	0.0269038	1.32188	0.0299712	1.32222

Table 2. Average camera location error.

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

Camera Orientations

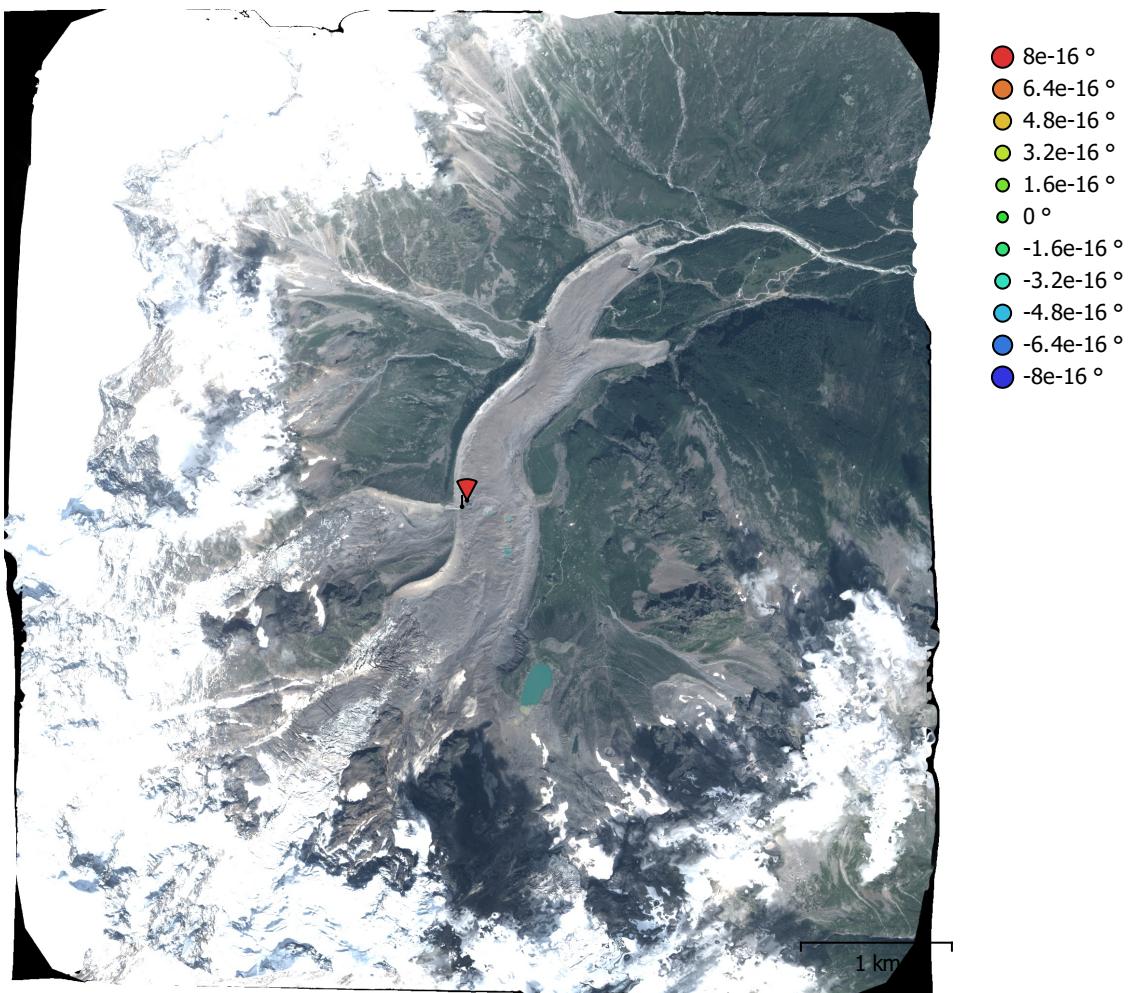


Fig. 3. Camera orientations and error estimates.

Arcs represent yaw error estimates.

Yaw error ($^\circ$)	Pitch error ($^\circ$)	Roll error ($^\circ$)	Total error ($^\circ$)
$5.62248\text{e-}16$	$1.59028\text{e-}14$	$7.90395\text{e-}16$	$1.59323\text{e-}14$

Table 3. Average camera rotation error.

Ground Control Points

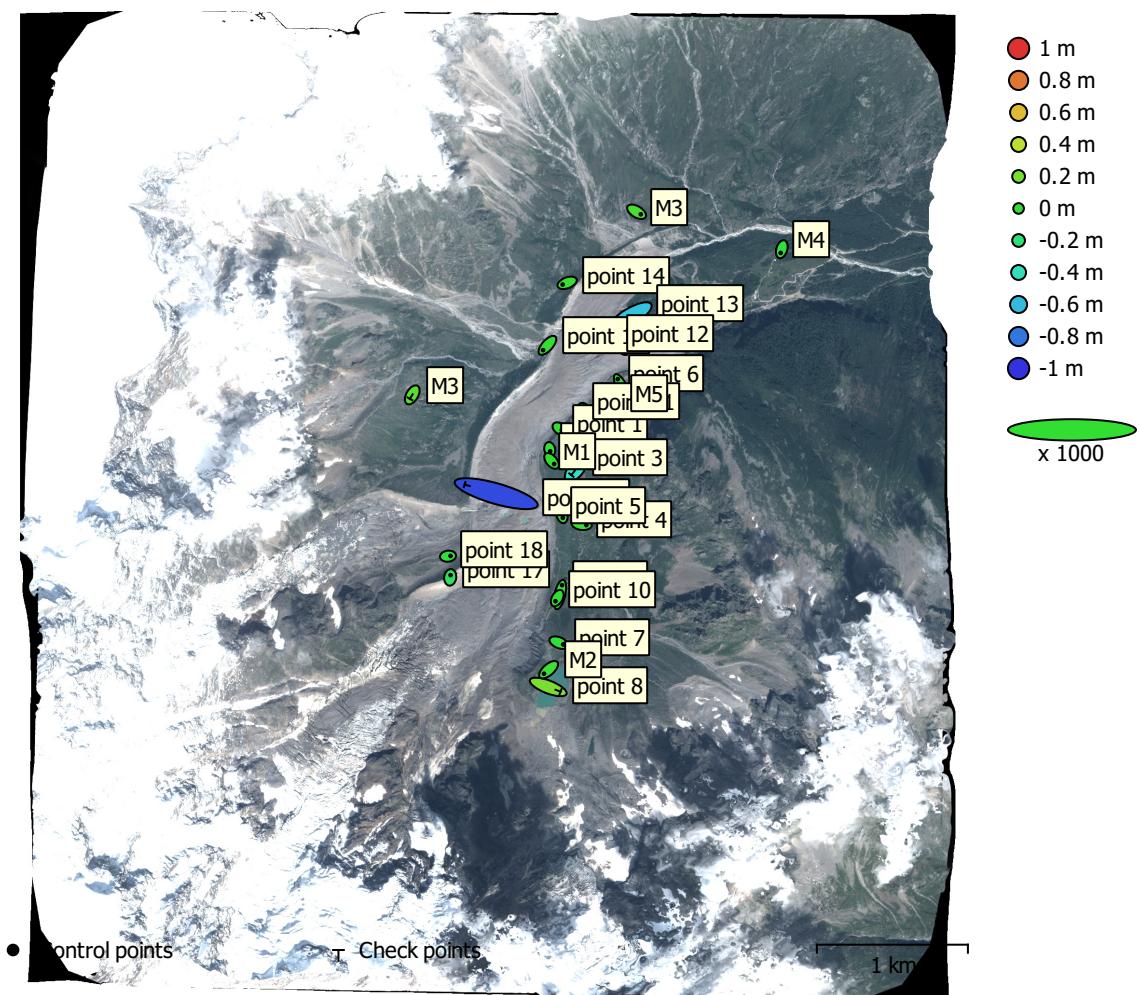


Fig. 4. GCP locations and error estimates.

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)
19	4.10427	5.7022	3.98526	7.02568	8.07728

Table 4. Control points RMSE.

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

Count	X error (cm)	Y error (cm)	Z error (cm)	XY error (cm)	Total (cm)
5	21.9046	8.83493	53.6405	23.6192	58.6103

Table 5. Check points RMSE.

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

Label	X error (cm)	Y error (cm)	Z error (cm)	Total (cm)	Image (pix)
point 2	0.57556	-2.55987	-1.85821	3.21515	0.523 (2)
point 15	-5.76717	-6.36028	1.18967	8.66768	5.492 (2)
point 14	-5.91206	-2.25006	1.53189	6.5086	0.274 (2)
point 6	-6.45254	12.8142	1.05751	14.386	0.495 (2)
point 1	2.77453	-1.85566	0.14006	3.34082	0.240 (2)
point 4	6.12789	-0.698467	1.71246	6.40089	1.354 (2)
point 12	-4.90315	7.04862	2.84892	9.04656	0.422 (2)
point 17	0.430514	2.97503	-13.3378	13.6724	2.318 (2)
point 9	2.86349	12.4321	-0.987244	12.7958	0.325 (2)
point 18	3.34779	0.40817	-3.82031	5.09599	0.929 (2)
point 5	1.09903	-3.95439	0.574766	4.14432	0.258 (2)
point 7	5.59434	-2.28021	-2.32775	6.47413	0.895 (2)
point 11	0.543924	-1.08896	0.344631	1.26509	0.302 (2)
point 10	-2.39946	-4.16529	-0.0310431	4.80708	1.125 (2)
M1	3.45369	-4.04162	0.097962	5.31717	0.303 (2)
M2	-6.09632	-5.35316	3.74768	8.93681	0.923 (2)
M3	5.57797	-3.32977	5.72685	8.66014	1.117 (2)
M4	-1.45976	-4.8751	-2.27303	5.57353	0.531 (2)
M5	-0.313504	8.06892	5.56855	9.8089	1.217 (2)
Total	4.10427	5.7022	3.98526	8.07728	1.545

Table 6. Control points.
X - Easting, Y - Northing, Z - Altitude.

Label	X error (cm)	Y error (cm)	Z error (cm)	Total (cm)	Image (pix)
point 13	-18.4244	-11.0016	-57.7783	61.6346	0.414 (2)
point 19	-41.8095	11.9957	-92.6962	102.394	1.022 (2)
point 3	-6.10137	-7.66036	-43.4843	44.5734	0.246 (2)
point 8	16.274	-6.26414	21.0115	27.3051	0.392 (2)
M3	-3.08101	-5.23718	11.1004	12.6547	0.183 (2)
Total	21.9046	8.83493	53.6405	58.6103	0.541

Table 7. Check points.

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

Digital Elevation Model

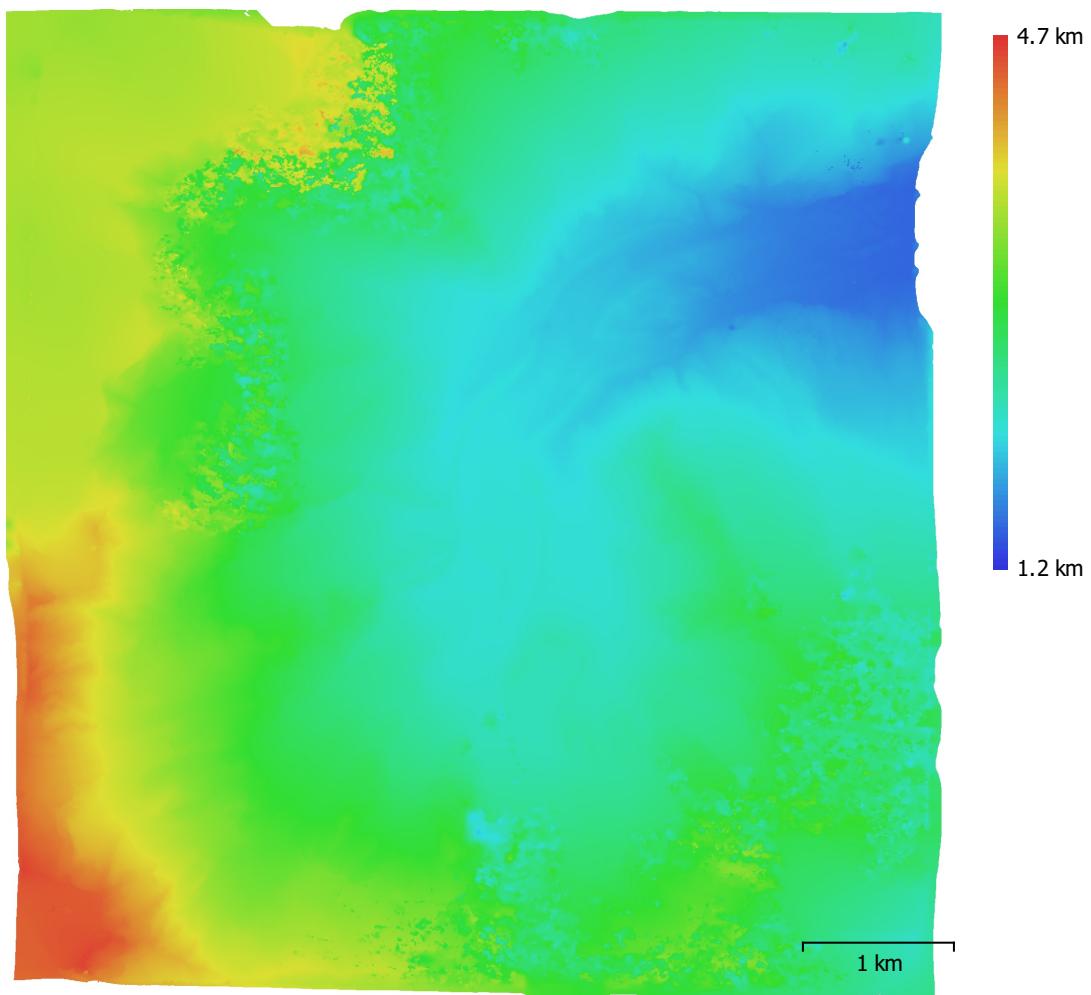


Fig. 5. Reconstructed digital elevation model.

Resolution: 1.04 m/pix

Point density: 0.923 points/m²

Processing Parameters

General

Cameras	2
Aligned cameras	2
Markers	24
Coordinate system	WGS 84 / UTM zone 32N (EPSG::32632)
Rotation angles	Yaw, Pitch, Roll

Tie Points

Points	2,533 of 2,638
RMS reprojection error	0.0929232 (0.757449 pix)
Max reprojection error	0.279943 (17.632 pix)
Mean key point size	5.02582 pix
Point colors	4 bands, uint16
Key points	No
Average tie point multiplicity	2

Alignment parameters

Accuracy	High
Generic preselection	No
Reference preselection	Source
Key point limit	40,000
Key point limit per Mpx	1,000
Tie point limit	4,000
Exclude stationary tie points	No
Guided image matching	No
Adaptive camera model fitting	No
Matching time	47 seconds
Matching memory usage	2.52 GB
Alignment time	0 seconds
Alignment memory usage	228.00 KB

Optimization parameters

Parameters	cx, cy
Adaptive camera model fitting	No
Optimization time	0 seconds
Date created	2024:01:01 14:43:25
Software version	2.0.2.16404
File size	162.68 KB

Depth Maps

Count	2
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Depth maps generation parameters

Quality	High
Filtering mode	Mild
Max neighbors	16
Processing time	2 hours 49 minutes
Memory usage	2.64 GB
Date created	2024:01:01 21:35:51
Software version	2.0.2.16404
File size	114.81 MB

Point Cloud

Points	48,910,784
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Point attributes

Color	4 bands, uint16
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Normal	
Point classes	
Created (never classified)	48,910,784
Depth maps generation parameters	
Quality	High
Filtering mode	Mild
Max neighbors	16
Processing time	2 hours 49 minutes
Memory usage	2.64 GB
Point cloud generation parameters	
Processing time	8 minutes 28 seconds
Memory usage	2.76 GB
Date created	2024:01:01 21:44:18
Software version	2.0.2.16404
File size	952.85 MB
Model	
Faces	2,966,706
Vertices	1,484,294
Vertex colors	3 bands, uint8
Depth maps generation parameters	
Quality	High
Filtering mode	Mild
Max neighbors	16
Processing time	2 hours 53 minutes
Memory usage	2.27 GB
Reconstruction parameters	
Surface type	Arbitrary
Source data	Depth maps
Interpolation	Enabled
Strict volumetric masks	No
Processing time	10 minutes 8 seconds
Memory usage	2.72 GB
Date created	2024:01:01 18:21:18
Software version	2.0.2.16404
File size	67.92 MB
DEM	
Size	5,946 x 6,280
Coordinate system	WGS 84 / UTM zone 32N (EPSG::32632)
Reconstruction parameters	
Source data	Point cloud
Interpolation	Enabled
Processing time	1 minutes 5 seconds
Memory usage	329.27 MB
Date created	2024:01:01 22:03:56
Software version	2.0.2.16404
File size	156.17 MB
Orthomosaic	
Size	6,186 x 6,533
Coordinate system	WGS 84 / UTM zone 32N (EPSG::32632)
Colors	4 bands, uint16
Reconstruction parameters	
Blending mode	Mosaic
Surface	DEM
Enable hole filling	Yes
Enable ghosting filter	No
Processing time	2 minutes 39 seconds

Memory usage	2.81 GB
Date created	2024:01:01 23:12:07
Software version	2.0.2.16404
File size	1.44 GB
System	
Software name	Agisoft Metashape Professional
Software version	2.0.2 build 16404
OS	Windows 64 bit
RAM	5.89 GB
CPU	Intel(R) Core(TM) i7-3630QM CPU @ 2.40GHz
GPU(s)	GeForce 610M Intel(R) HD Graphics 4000