

Quality Report



Generated with Pix4Denterprise version 4.5.6



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Additional information about the sections



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Summary



Project	Skate Park Small
Processed	2025-06-07 21:52:54
Camera Model Name(s)	FC9113_8.7_4096x2304 (RGB)
Average Ground Sampling Distance (GSD)	2.42 cm / 0.95 in
Area Covered	0.013 km ² / 1.2866 ha / 0.00 sq. mi. / 3.1808 acres

Quality Check



Images	median of 36148 keypoints per image	
Dataset	23 out of 23 images calibrated (100%), all images enabled	
Camera Optimization	16.36% relative difference between initial and optimized internal camera parameters	
Matching	median of 15085.8 matches per calibrated image	
Georeferencing	yes, no 3D GCP	

Preview

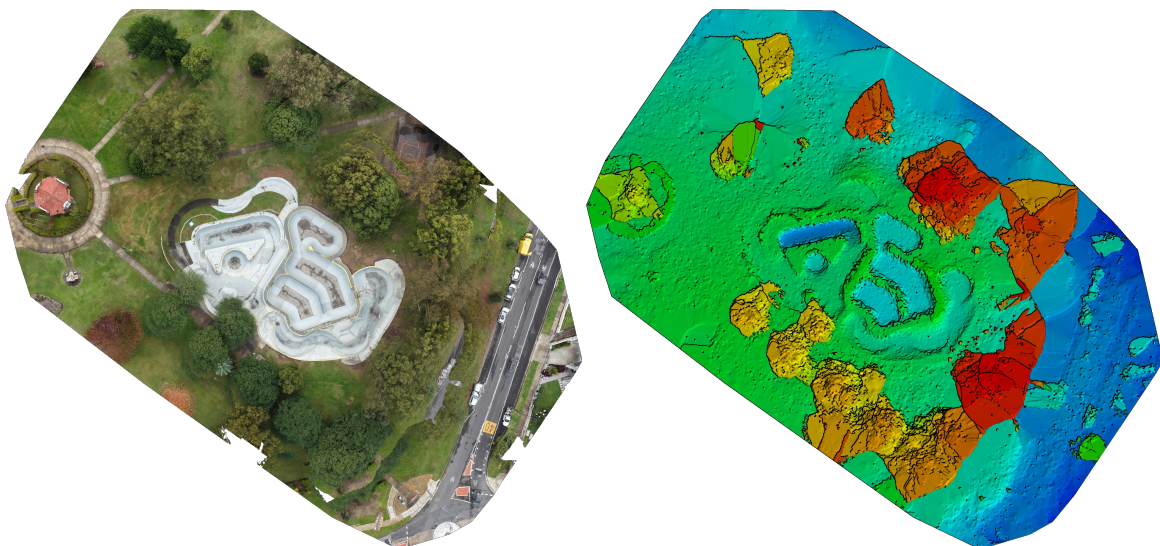


Figure 1: Orthomosaic and the corresponding sparse Digital Surface Model (DSM) before densification.

Calibration Details



Number of Calibrated Images	23 out of 23
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Initial Image Positions

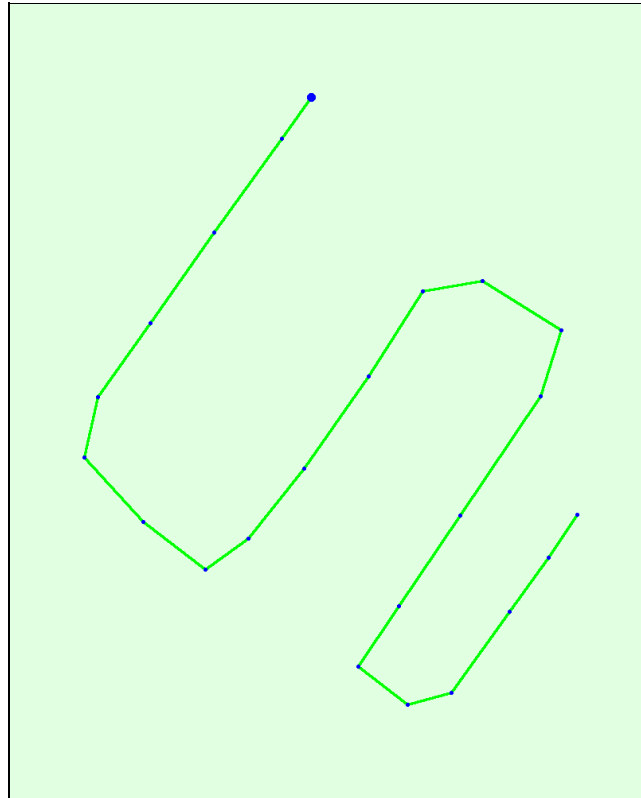


Figure 2: Top view of the initial image position. The green line follows the position of the images in time starting from the large blue dot.

 Computed Image/GCPs/Manual Tie Points Positions

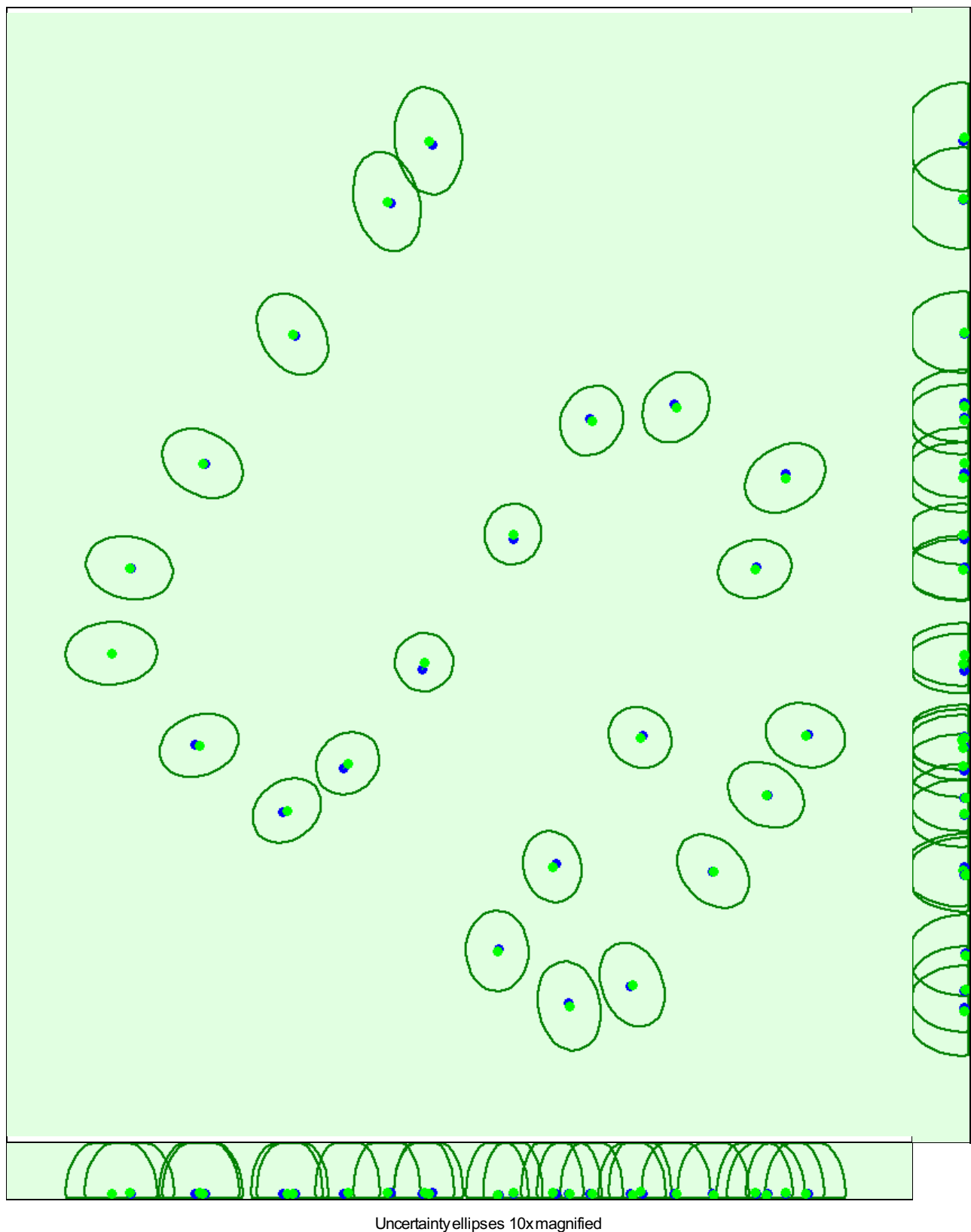


Figure 3: Offset between initial (blue dots) and computed (green dots) image positions as well as the offset between the GCPs initial positions (blue crosses) and their computed positions (green crosses) in the top-view (XY plane), front-view (XZ plane), and side-view (YZ plane). Dark green ellipses indicate the absolute position uncertainty of the bundle block adjustment result.

? Absolute camera position and orientation uncertainties



	X[m]	Y[m]	Z[m]	Omega [degree]	Phi [degree]	Kappa [degree]
Mean	0.274	0.280	0.451	0.142	0.145	0.198
Sigma	0.034	0.048	0.002	0.002	0.002	0.000

Overlap

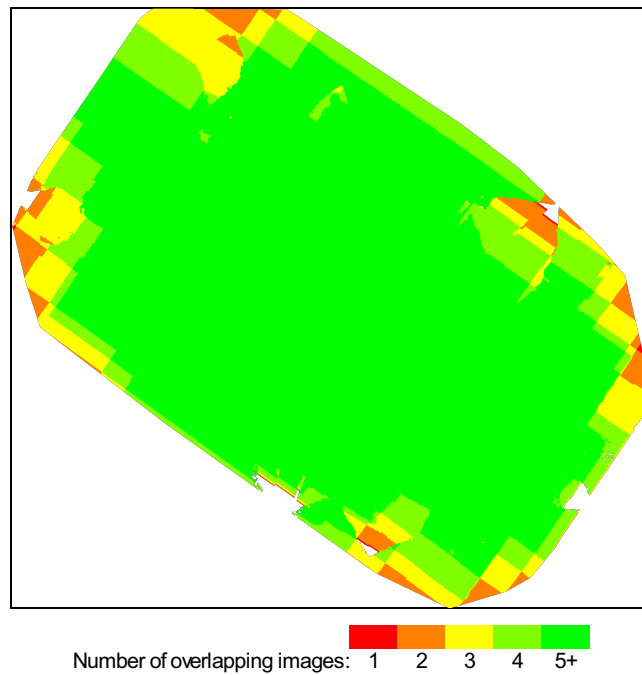


Figure 4: Number of overlapping images computed for each pixel of the orthomosaic. Red and yellow areas indicate low overlap for which poor results may be generated. Green areas indicate an overlap of over 5 images for every pixel. Good quality results will be generated as long as the number of keypoint matches is also sufficient for these areas (see Figure 5 for keypoint matches).

Bundle Block Adjustment Details



Number of 2D Keypoint Observations for Bundle Block Adjustment	354241
Number of 3D Points for Bundle Block Adjustment	101778
Mean Reprojection Error [pixels]	0.260

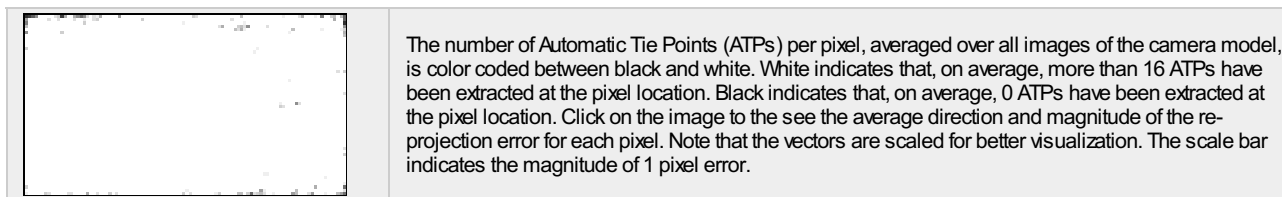
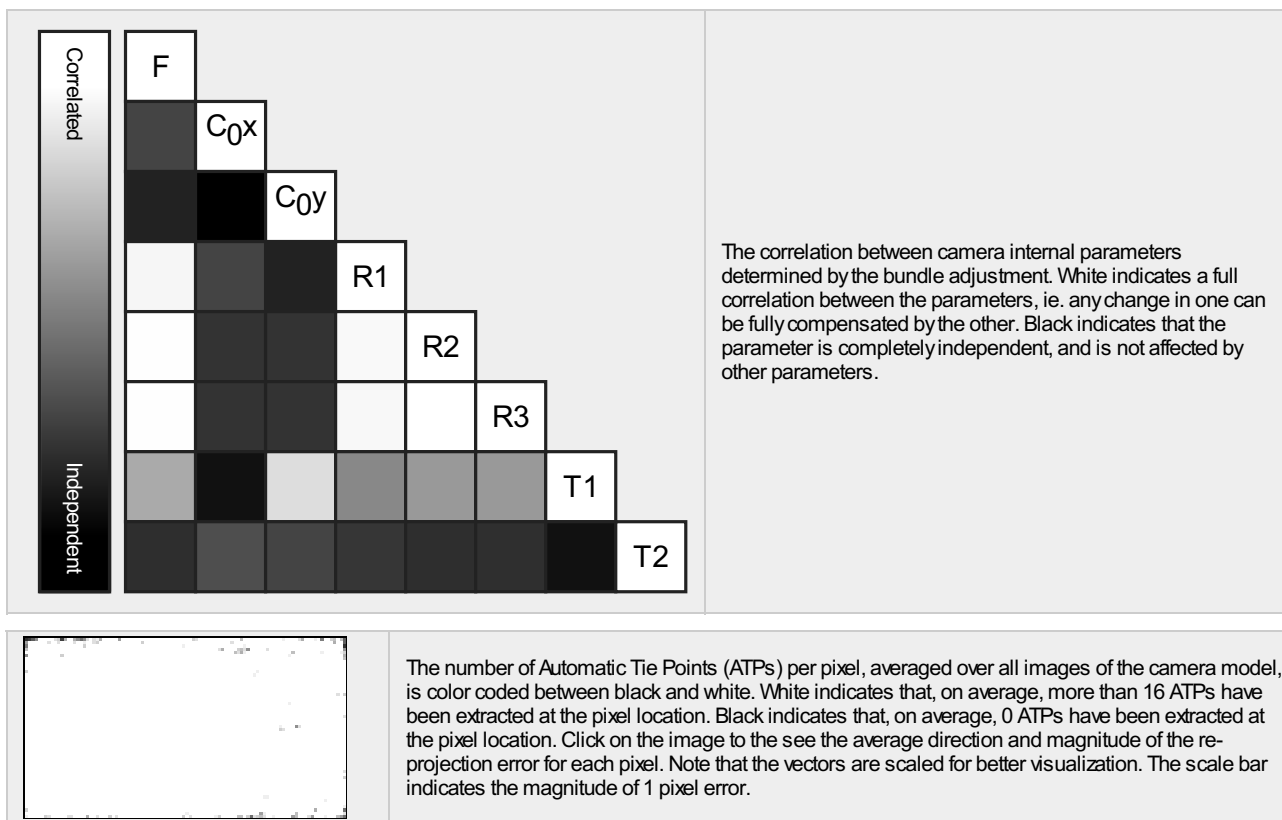
Internal Camera Parameters

FC9113_8.7_4096x2304 (RGB). Sensor Dimensions: 12.644 [mm] x 7.112 [mm]



EXIF ID: FC9113_8.7_4096x2304

	Focal Length	Principal Point x	Principal Point y	R1	R2	R3	T1	T2
Initial Values	2808.686 [pixel] 8.670 [mm]	2048.000 [pixel] 6.322 [mm]	1152.000 [pixel] 3.556 [mm]	0.000	0.000	0.000	0.000	0.000
Optimized Values	3268.234 [pixel] 10.089 [mm]	2067.413 [pixel] 6.382 [mm]	1141.059 [pixel] 3.522 [mm]	0.129	-0.401	0.471	-0.000	-0.003
Uncertainties (Sigma)	49.737 [pixel] 0.154 [mm]	1.205 [pixel] 0.004 [mm]	1.541 [pixel] 0.005 [mm]	0.004	0.025	0.043	0.000	0.000



2D Keypoints Table

	Number of 2D Keypoints per Image	Number of Matched 2D Keypoints per Image
Median	36148	15086
Mn	34595	11461
Max	37102	18419
Mean	36095	15402

3D Points from 2D Keypoint Matches

	Number of 3D Points Observed
In 2 Images	61340
In 3 Images	15961
In 4 Images	7533
In 5 Images	4354
In 6 Images	2526
In 7 Images	1992
In 8 Images	1370
In 9 Images	1048
In 10 Images	802
In 11 Images	707
In 12 Images	583
In 13 Images	529
In 14 Images	457
In 15 Images	476
In 16 Images	437
In 17 Images	408
In 18 Images	328
In 19 Images	267
In 20 Images	167
In 21 Images	163
In 22 Images	182
In 23 Images	148

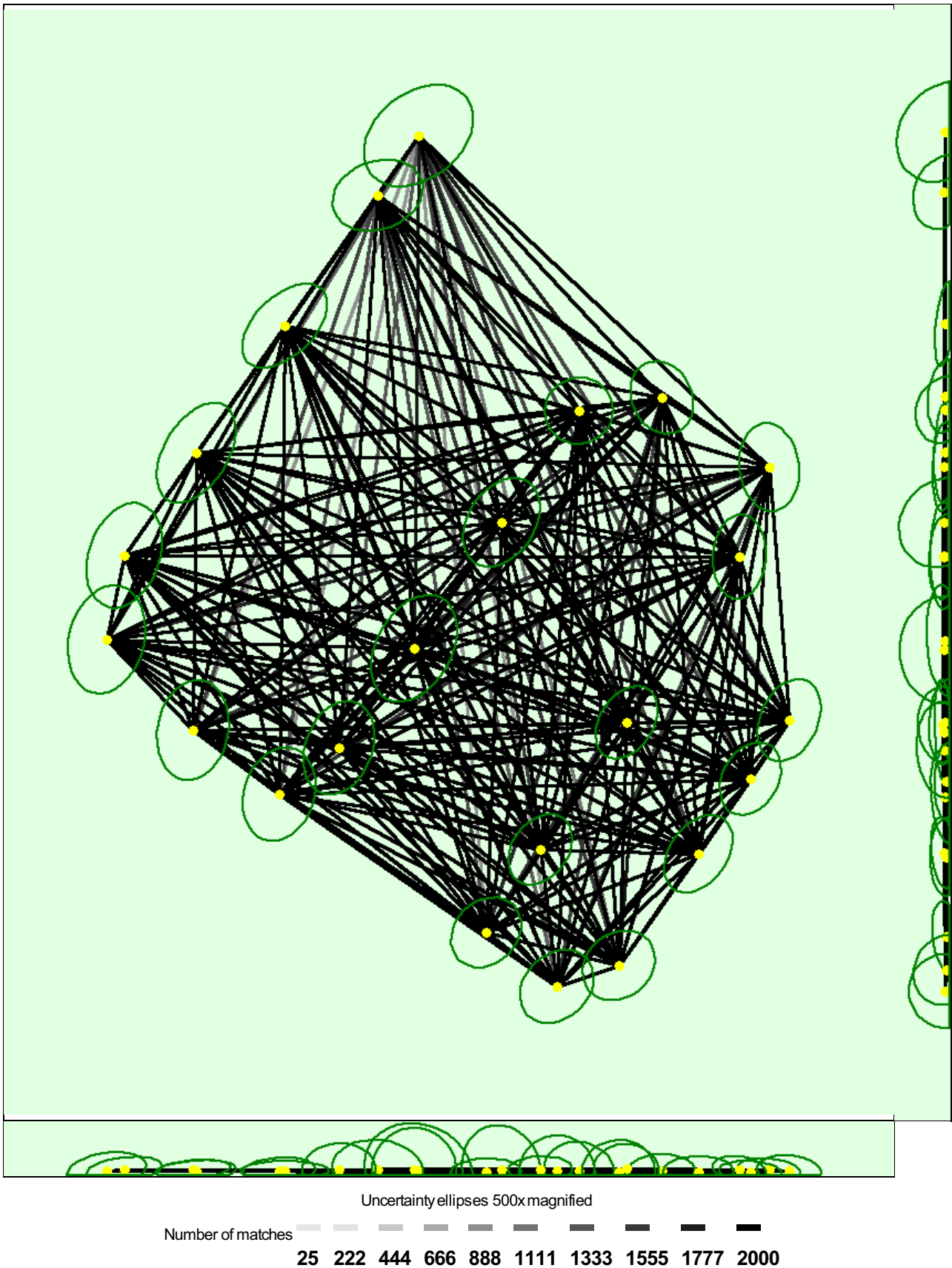


Figure 5: Computed image positions with links between matched images. The darkness of the links indicates the number of matched 2D keypoints between the images. Bright links indicate weak links and require manual tie points or more images. Dark green ellipses indicate the relative camera position uncertainty of the bundle block adjustment result.

X[m]	Y[m]	Z[m]	Omega [degree]	Phi [degree]	Kappa [degree]
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Mean	0.006	0.007	0.003	0.037	0.041	0.011
Sigma	0.001	0.001	0.002	0.005	0.008	0.002

Geolocation Details

Absolute Geolocation Variance

Min Error [m]	Max Error [m]	Geolocation Error X[%]	Geolocation Error Y[%]	Geolocation Error Z[%]
-	-15.00	0.00	0.00	0.00
-15.00	-12.00	0.00	0.00	0.00
-12.00	-9.00	0.00	0.00	0.00
-9.00	-6.00	0.00	0.00	0.00
-6.00	-3.00	0.00	0.00	0.00
-3.00	0.00	43.48	47.83	52.17
0.00	3.00	56.52	52.17	47.83
3.00	6.00	0.00	0.00	0.00
6.00	9.00	0.00	0.00	0.00
9.00	12.00	0.00	0.00	0.00
12.00	15.00	0.00	0.00	0.00
15.00	-	0.00	0.00	0.00
Mean [m]		-0.000000	-0.000000	-0.000001
Sigma [m]		0.194366	0.227093	0.072358
RMS Error [m]		0.194366	0.227093	0.072358

Min Error and Max Error represent geolocation error intervals between -1.5 and 1.5 times the maximum accuracy of all the images. Columns X, Y, Z show the percentage of images with geolocation errors within the predefined error intervals. The geolocation error is the difference between the initial and computed image positions. Note that the image geolocation errors do not correspond to the accuracy of the observed 3D points.

Relative Geolocation Variance

Relative Geolocation Error	Images X[%]	Images Y[%]	Images Z[%]
[-1.00, 1.00]	100.00	100.00	100.00
[-2.00, 2.00]	100.00	100.00	100.00
[-3.00, 3.00]	100.00	100.00	100.00
Mean of Geolocation Accuracy [m]	5.000000	5.000000	10.000000
Sigma of Geolocation Accuracy [m]	0.000000	0.000000	0.000000

Images X, Y, Z represent the percentage of images with a relative geolocation error in X, Y, Z.

Geolocation Orientational Variance	RMS [degree]
Omega	0.812
Phi	0.538
Kappa	2.347

Geolocation RMS error of the orientation angles given by the difference between the initial and computed image orientation angles.

Initial Processing Details

System Information

Hardware	CPU: 12th Gen Intel(R) Core(TM) i5-12450H RAM: 8GB GPU: Intel(R) UHD Graphics (Driver: 31.0.101.5592), NVIDIA GeForce RTX 2050 (Driver: 32.0.15.6614)
Operating System	Windows 10 Home, 64-bit

Coordinate Systems



Image Coordinate System	WGS 84 (EGM96 Geoid)
Output Coordinate System	WGS 84 / UTM zone 56S (EGM96 Geoid)

Processing Options



Detected Template	No Template Available
Keypoints Image Scale	Full, Image Scale: 1
Advanced: Matching Image Pairs	Aerial Grid or Corridor
Advanced: Matching Strategy	Use Geometrically Verified Matching: no
Advanced: Keypoint Extraction	Targeted Number of Keypoints: Automatic
Advanced: Calibration	Calibration Method: Standard Internal Parameters Optimization: All External Parameters Optimization: All Rematch: Auto, yes

Point Cloud Densification details



Processing Options



Image Scale	multiscale, 1/2 (Half image size, Default)
Point Density	Optimal
Minimum Number of Matches	3
3D Textured Mesh Generation	yes
3D Textured Mesh Settings:	Resolution: Medium Resolution (default) Color Balancing: no
LOD	Generated: no
Advanced: 3D Textured Mesh Settings	Sample Density Divider: 1
Advanced: Image Groups	group1
Advanced: Use Processing Area	yes
Advanced: Use Annotations	yes

Results



Number of Generated Tiles	1
Number of 3D Densified Points	1730462
Average Density (per m ³)	182.53

DSM, Orthomosaic and Index Details



Processing Options



DSM and Orthomosaic Resolution	1 x GSD (2.42 [cm/pixel])
DSM Filters	Noise Filtering: yes Surface Smoothing: yes, Type: Sharp
Raster DSM	Generated: yes Method: Inverse Distance Weighting Merge Tiles: yes

Orthomosaic	Generated: yes Merge Tiles: yes GeoTIFF Without Transparency: no Google Maps Tiles and KML: no
Contour Lines Generation	Generated: yes Contour Base [m]: 0 Elevation Interval [m]: 1 Resolution [cm]: 100 Minimum Line Size [vertices]: 20