

Summary

Project:	oblique_sullens
Processed:	2014-Jun-21 13:54:04
Camera name:	CanonPowerShotS110_5.2_4000x3000
Average Ground Sampling Distance (GSD):	5.46 cm
Image coordinate system:	WGS84
Output coordinate system:	WGS84 / UTM zone 32N
Processing type:	full (scale 1) oblique
Time for initial processing (without report):	14m:14s

Quality Check

Images:	median of 28634 keypoints per image	✔
Dataset:	37 out of 37 images calibrated (100%), all images enabled	✔
Camera optimization quality:	3.6% relative difference between initial and final focal length	✔
Matching quality:	median of 6944.16 matches per calibrated image	✔
Georeferencing:	no GCP	⚠

Preview

The preview is not generated in oblique mode.

Calibration details

Number of calibrated images:	37 out of 37
Number of geotagged images:	37 out of 37

Geotag Position

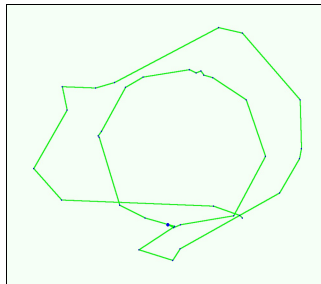


Figure 2: Top view of the geotags. The green line follows the geotags of the images in time starting from the large blue dot.

Optimized Camera Position

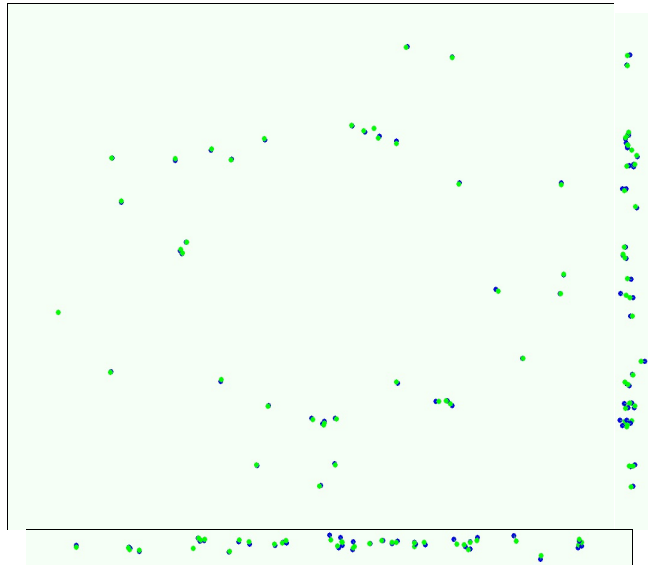


Figure 3: Offset between image geotags (blue dots) and optimized positions (green dots) as well as the offset between the GCP's positions (blue crosses) and their optimized positions (green crosses) in the top-view (XY plane), front-view (XZ plane) and side-view (YZ plane).

Overlap

The preview is not generated in oblique mode.

Bundle Block Adjustment details

Number of 2D keypoint observations for Bundle Block Adjustment	283994
Number of 3D points for Bundle Block Adjustment	112068
Mean reprojection error	0.23794 [pixels]

Internal Camera Parameters CanonPowerShotS110_5.2_4000x3000. Sensor dimensions: 7.44 [mm] x 5.58 [mm]

EXIF ID: CanonPowerShotS110_5.2_4000x3000

	Focal length	Principal point x	Principal point y	R1	R2	R3	T1	T2
Initial values	2794.872 [pix] 5.200 [mm]	2000.000 [pix] 3.721 [mm]	1500.000 [pix] 2.791 [mm]	-0.040	-0.012	0.007	0.000	0.004
Optimized values	2895.637 [pix] 5.387 [mm]	2035.642 [pix] 3.787 [mm]	1491.801 [pix] 2.776 [mm]	-0.029	-0.023	0.016	-0.001	0.003

2D Keypoint Table

	Number of 2D keypoints per image	Number of matched 2D keypoints per image
Median	28634	6944

Mn	26352	1579
Max	34496	14178
Mean	29066	7676

3D Points from 2D Keypoint Matches

	Number of 3D points observed
In 2 images	79429
In 3 images	18896
In 4 images	6871
In 5 images	3415
In 6 images	1742
In 7 images	939
In 8 images	431
In 9 images	176
In 10 images	89
In 11 images	49
In 12 images	13
In 13 images	10
In 14 images	5
In 15 images	2
In 17 images	1

2D Keypoint Graph

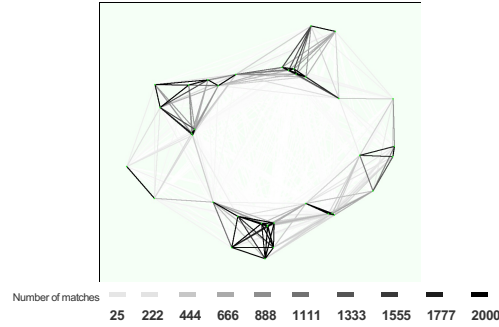


Figure 5: Top view of the geotags with a link between matching images. The darkness of the links indicates the number of matched 2D keypoints between the images. Bright links indicate weak links and require manual tie points or more images.

Most visible 2D keypoints

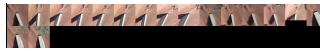


Figure 6: Cropped area of 1 3D point arising from 17 2D keypoints. Each cropped area should represent the same 3D object.

Absolute Geotag Variance

0 out of 37 geotagged and calibrated images have been labeled as inaccurate.

Min error [m]	Max error [m]	Geotag error X [%]	Geotag error Y [%]	Geotag error Z [%]
-	-10.07	0.00	0.00	0.00
-10.07	-8.05	0.00	0.00	0.00
-8.05	-6.04	0.00	0.00	0.00
-6.04	-4.03	0.00	0.00	0.00
-4.03	-2.01	0.00	0.00	5.41
-2.01	0.00	43.24	43.24	51.35
0.00	2.01	56.76	56.76	24.32
2.01	4.03	0.00	0.00	18.92
4.03	6.04	0.00	0.00	0.00
6.04	8.05	0.00	0.00	0.00
8.05	10.07	0.00	0.00	0.00
10.07	-	0.00	0.00	0.00
Mean		-0.018087	0.008481	0.001266
Sigma		0.592627	0.686326	1.608319
RMS error		0.592903	0.686378	1.608319

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

Geotag orientational variance	RMS [degree]
Omega	5.801630
Phi	5.202350
Kappa	5.976093

Geotag RMS error of the orientation angles: The difference between the image orientation angles and the optimized orientation angles.

Relative Geotag Variance

Tolerance [%]	Images X [%]	Images Y [%]	Images Z [%]
10.00	72.97	59.46	24.32
20.00	94.59	91.89	45.95
30.00	100.00	100.00	64.86
40.00	100.00	100.00	78.38
50.00	100.00	100.00	83.78
60.00	100.00	100.00	97.30
70.00	100.00	100.00	100.00
80.00	100.00	100.00	100.00
90.00	100.00	100.00	100.00
100.00	100.00	100.00	100.00
110.00	100.00	100.00	100.00
120.00	100.00	100.00	100.00
130.00	100.00	100.00	100.00
140.00	100.00	100.00	100.00
150.00	100.00	100.00	100.00
Mean tolerance	6.212622	6.212622	5.153676
Sigma tolerance	0.234217	0.234217	0.217128

Images X, Y, Z represent the percentage of images with a geotag error in X, Y, Z smaller than the given percentage of their corresponding tolerance.