# Quality Report

See *Quality Report Help* for detailed explanations. Generated with version 2.9.33

### Summary

| | |
|---|---|
| Project: | merlischachen |
| Processed: | 2013-Dec-26 15:49:14 |
| Camera name: | CanonIXUS125HS_4.3_4608x3456 |
| Average Ground Sampling Distance (GSD): | 5.32 cm |
| Area covered: | 0.5938 $km^2$ / 59.3755 ha / 0.2294 sq. mi. |
| Image coordinate system: | WGS84 |
| Output coordinate system: | WGS84 / UTM zone 32N |
| Processing type: | full (scale 1) aerial |
| Time for Initial Processing (without report): | 01h:00m:50s |

### Quality Check

| | | |
|---|---|---|
| **Images:** | median of 30652 keypoints per image | ✓ |
| **Dataset:** | 297 out of 297 images calibrated (100%), all images enabled | ✓ |
| **Camera optimization quality:** | 0.54% relative difference between initial and final focal length | ✓ |
| **Matching quality:** | median of 13397 matches per calibrated image | ✓ |
| **Georeferencing:** | no GCP | ⚠ |

### Preview

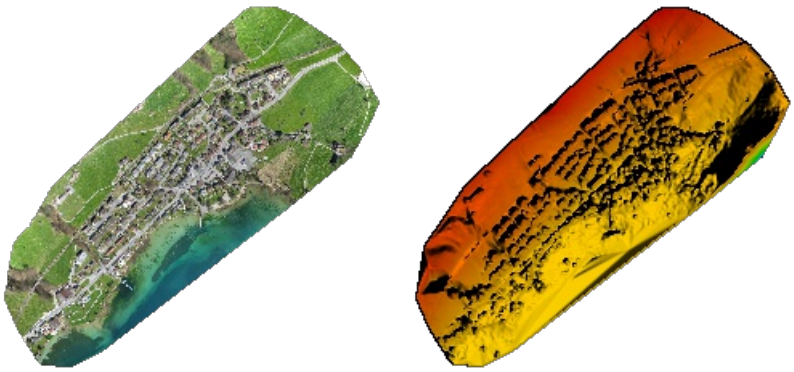
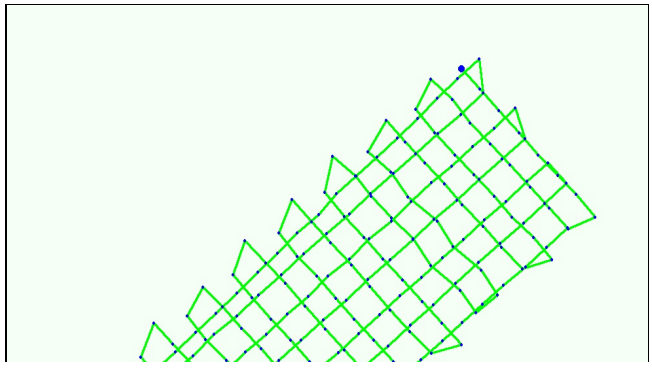


**Figure 1: Ortho mosaic and the corresponding sparse digital surface model (DSM) before densification.**

## Calibration details

| | |
|---|---|
| Number of calibrated images: | 297 out of 297 |
| Number of geotagged images: | 297 out of 297 |

### Geotag position



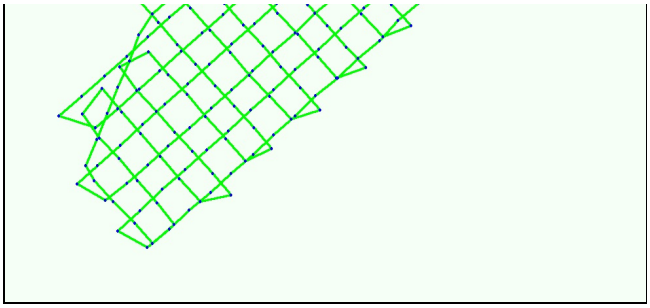


Figure 2: Top view of the geotags. The green line follows the geotags of the images in time starting from the large blue dot.

## Optimized camera position

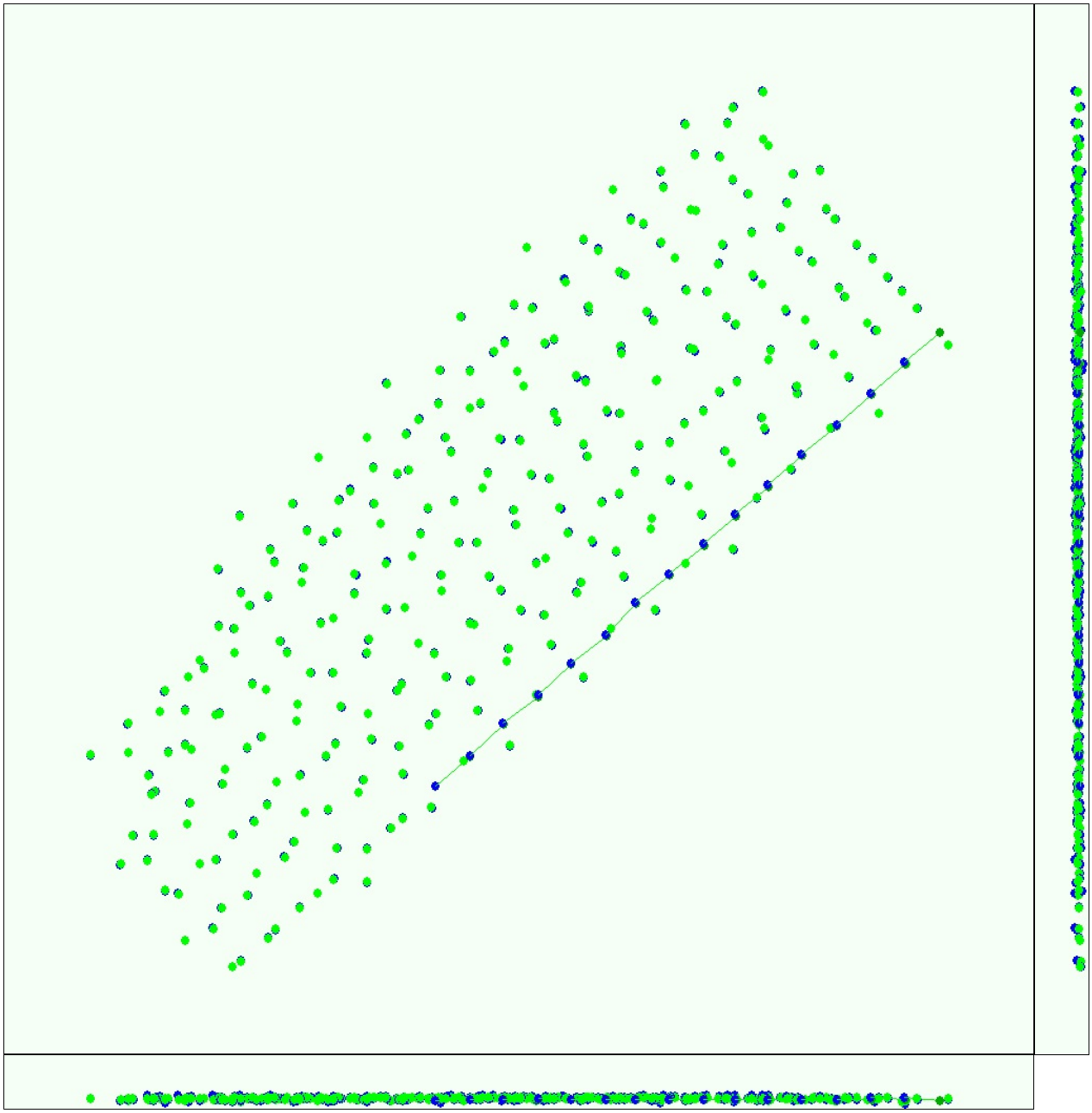
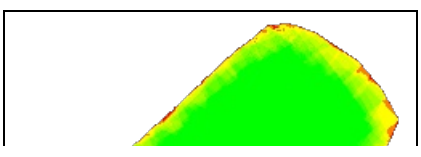


Figure 3: Offset between image geotags (blue dots) and optimized positions (green dots) as well as the offset between the GCPs positions (blue crosses) and their optimized positions (green crosses) in the top-view (XY plane), front-view (XZ plane) and side-view (YZ plane).

## Overlap



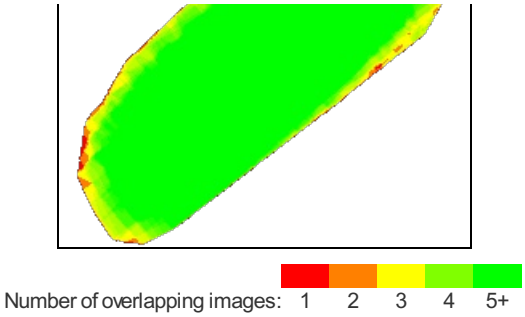



**Figure 4: Overlapping score computed for each pixel of the orthomosaic.**
**Red indicates areas where the overlap between the images is too low and could lead to poor results. For good quality results, the overlap should be over 5 images (green) for every pixel of the mosaic.**

# Bundle Block Adjustment details

| | |
|---|---|
| number total keypoint observations (automatic tie points) for bundle block adjustment | 3976731 |
| number total 3D points for bundle block adjustment | 1246532 |
| mean reprojection error | 0.184681 [pixels] |

### Internal Camera Parameters CanonIXUS125HS_4.3_4608x3456. Sensor dimensions: 6.17 [mm] x 4.63 [mm]

**EXIF ID: CanonIXUS125HS_4.3_4608x3456**

| | Focal length | Principal point x | Principal point y | R1 | R2 | R3 | T1 | T2 |
|---|---|---|---|---|---|---|---|---|
| initial values | 3274.810 [pix] 4.386 [mm] | 2304.000 [pix] 3.086 [mm] | 1728.000 [pix] 2.315 [mm] | -0.048 | 0.045 | -0.016 | -0.003 | 0.008 |
| optimized values | 3256.876 [pix] 4.362 [mm] | 2348.369 [pix] 3.146 [mm] | 1697.288 [pix] 2.273 [mm] | -0.053 | 0.066 | -0.040 | -0.002 | 0.003 |

### 2D Keypoints Table

| | Number of 2D keypoints per image | Number of matched 2D keypoints per image |
|---|---|---|
| Median | 30652 | 13397 |
| Min | 16795 | 2158 |
| Max | 36554 | 20840 |
| Mean | 30619 | 13390 |

### 3D points from 2D keypoints matches

| | Number of 3D points observed |
|---|---|
| In 2 images | 800249 |
| In 3 images | 193908 |
| In 4 images | 82596 |
| In 5 images | 45217 |
| In 6 images | 28942 |
| In 7 images | 20028 |
| In 8 images | 14753 |
| In 9 images | 11558 |
| In 10 images | 9055 |
| In 11 images | 7195 |
| In 12 images | 5935 |
| In 13 images | 4989 |
| In 14 images | 4069 |
| In 15 images | 3355 |
| In 16 images | 2804 |
| In 17 images | 2333 |
| In 18 images | 1912 |
| In 19 images | 1526 |
| In 20 images | 1283 |
| In 21 images | 1028 |

| | |
|---|---|
| In 22 images | 863 |
| In 23 images | 672 |
| In 24 images | 584 |
| In 25 images | 469 |
| In 26 images | 354 |
| In 27 images | 282 |
| In 28 images | 196 |
| In 29 images | 147 |
| In 30 images | 107 |
| In 31 images | 56 |
| In 32 images | 33 |
| In 33 images | 22 |
| In 34 images | 6 |
| In 35 images | 3 |
| In 37 images | 3 |

### 2D Keypoints Graph

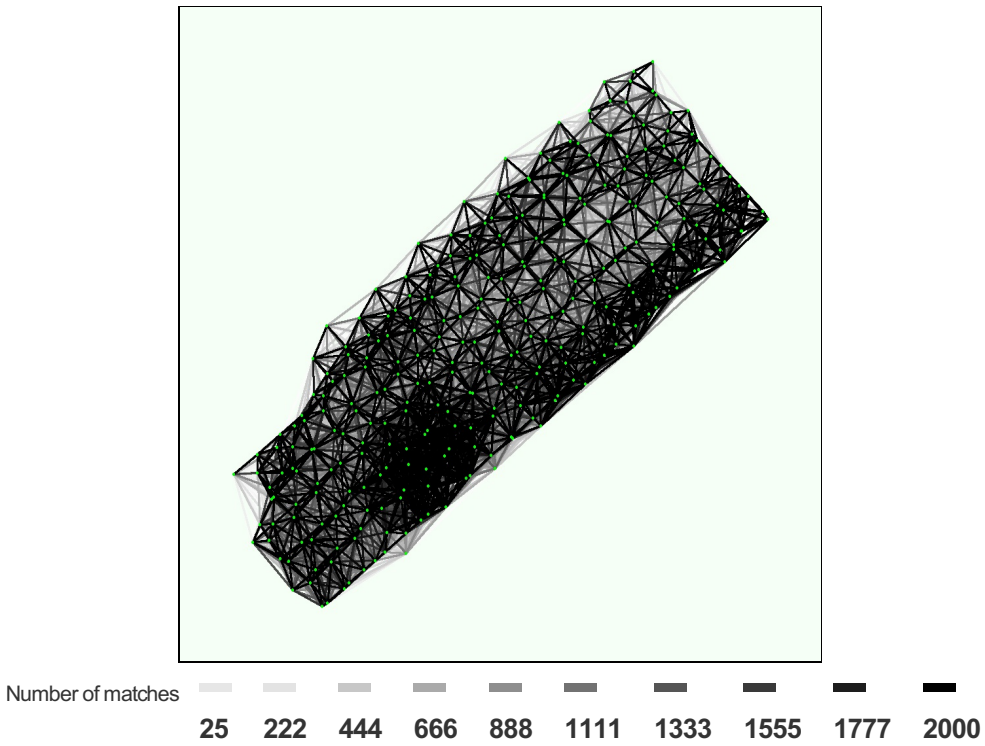



**Figure 5: Top view of the geotags with a link between matching images. The darkness of the links indicates the number of matched 2D keypoints between the images. Bright links indicate low confidence and would require more overlap between the images or better quality images.**

### Most visible 2D keypoints

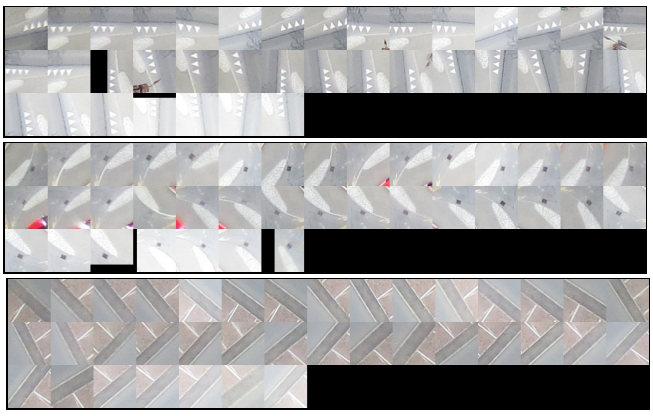


**Figure 6: Cropped area of 3 3D points arising from 37 2D keypoints. Each cropped area should represent the same 3D object.**

### Geotag variance

| Geotag localisation variance | sigma m |
|---|---|
| Longitude direction (x) | 0.689 |
| Latitude direction (y) | 0.945 |
| Altitude direction (z) | 1.490 |

**Geotag variance: The difference between the image geotags and the optimized camera positions. Please note that these images geotag errors do not correspond to the accuracy on the observed 3D points.**