

# Quality Report

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

## Summary

Project:	willisau
Processed:	2013-Dec-26 15:34:25
Camera name:	CanonIXUS125HS_4.3_4608x3456
Average Ground Sampling Distance (GSD):	4.59 cm
Area covered:	0.3779 km <sup>2</sup> / 37.7864 ha / 0.146 sq. mi.
Image coordinate system:	WGS84
Output coordinate system:	WGS84 / UTMzone 32N
Processing type:	full (scale 1) aerial
Time for Initial Processing (without report):	55m:24s

## Quality Check

Images:	median of 42393 keypoints per image	✓
Dataset:	210 out of 211 images calibrated (99%), all images enabled	✓
Camera optimization quality:	0.44% relative difference between initial and final focal length	✓
Matching quality:	median of 21063 matches per calibrated image	✓
Georeferencing:	no GCP	⚠

## Preview

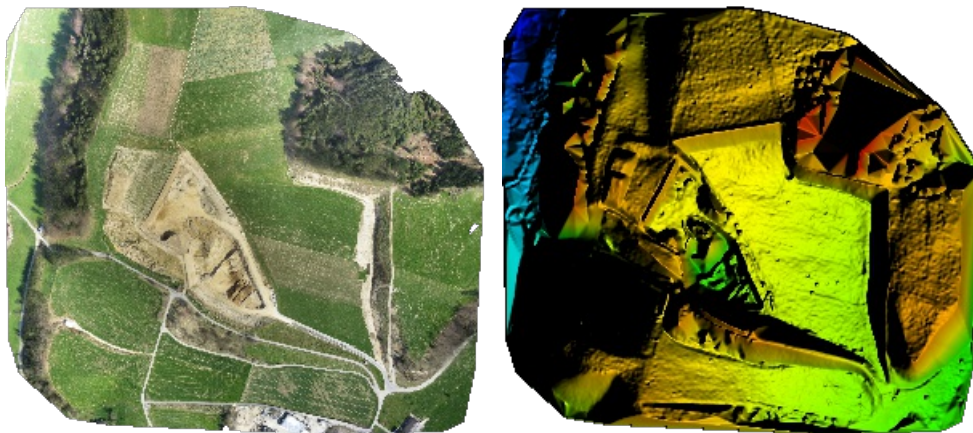


Figure 1: Ortho mosaic and the corresponding sparse digital surface model (DSM) before densification.

## Calibration details

Number of calibrated images:	210 out of 211
Number of geotagged images:	211 out of 211

## Geotag position



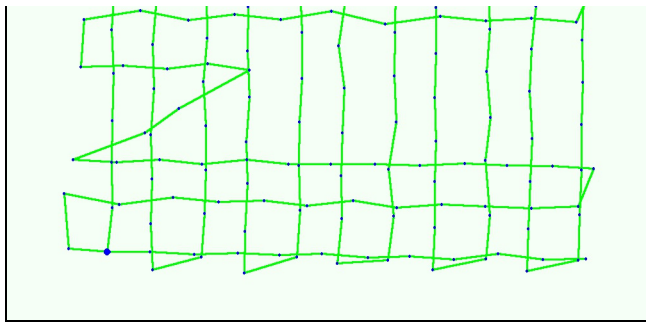


Figure 2: Top view of the geotags. The green line follows the geotags of the images in time starting from the large blue dot.

### Optimized camera position

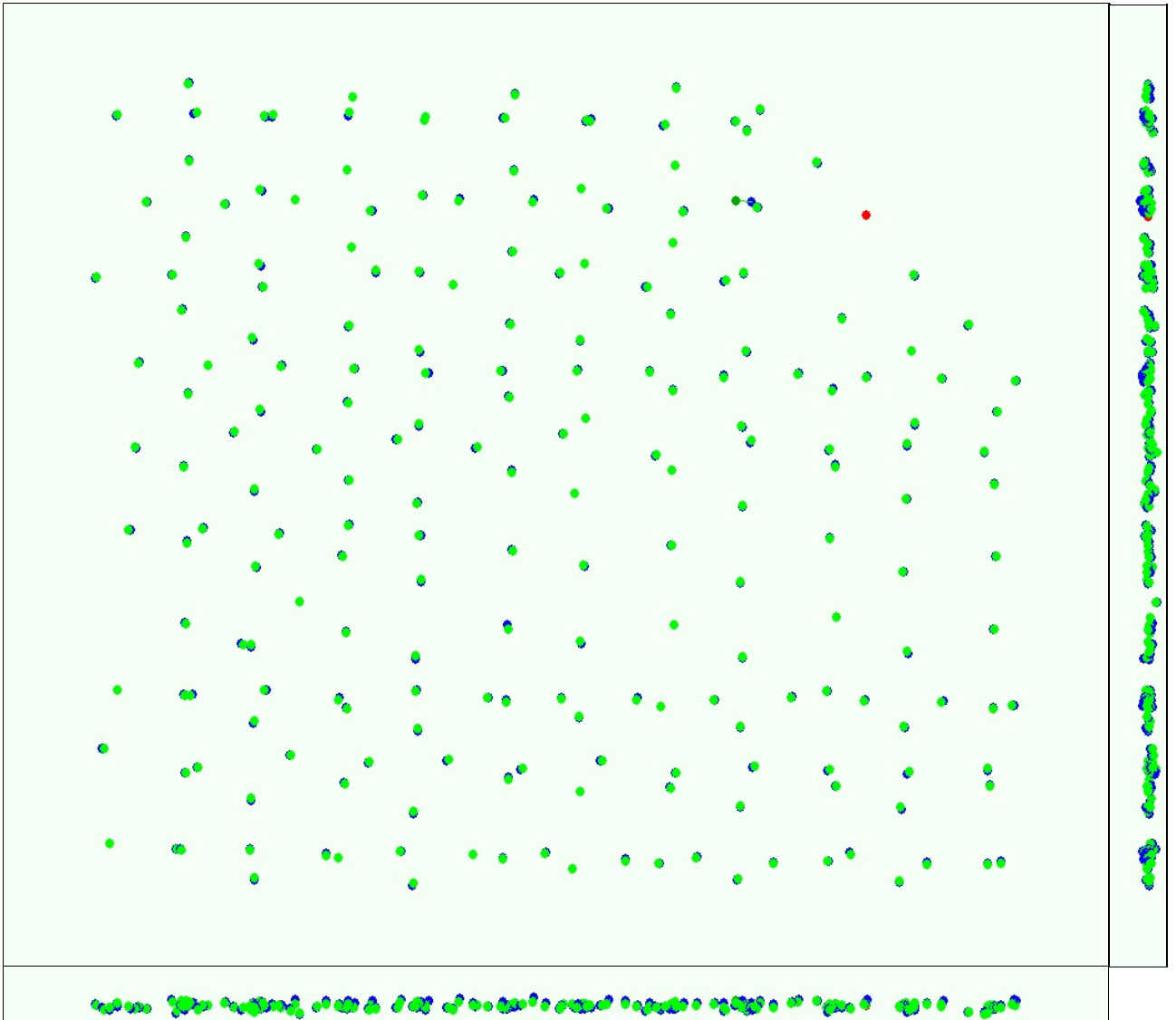
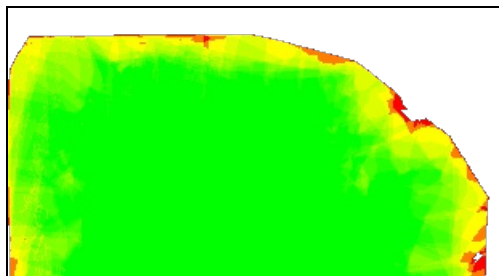
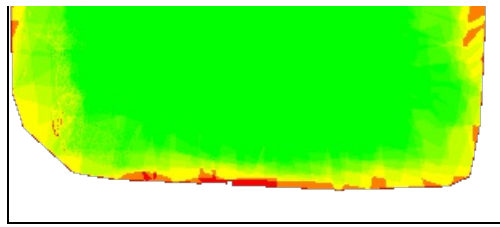


Figure 3: Offset between image geotags (blue dots) and optimized positions (green dots) as well as the offset between the GCPs positions (blue crosses) and their optimized positions (green crosses) in the top-view (XY plane), front-view (XZ plane) and side-view (YZ plane). Red dots show disabled or uncalibrated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

### Overlap





Number of overlapping images: 1 2 3 4 5+

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	4276819
number total 3D points for bundle block adjustment	1219403
mean reprojection error	0.162131 [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	3260.109 [pix] 4.367 [mm]	2348.105 [pix] 3.145 [mm]	1698.465 [pix] 2.275 [mm]	-0.053	0.065	-0.038	-0.002	0.003

### 2D Keypoints Table

	Number of 2D keypoints per image	Number of matched 2D keypoints per image
Median	42393	21063
Mn	19939	1030
Max	42013	34487
Mean	42312	20366

### 3D points from 2D keypoints matches

	Number of 3D points observed
In 2 images	694798
In 3 images	200584
In 4 images	93803
In 5 images	55791
In 6 images	38091
In 7 images	28854
In 8 images	22404
In 9 images	18157
In 10 images	14779
In 11 images	12153
In 12 images	9827
In 13 images	7885
In 14 images	6337
In 15 images	4878
In 16 images	3665
In 17 images	2833
In 18 images	1880
In 19 images	1210
In 20 images	737
In 21 images	426

In 22 images	184
In 23 images	83
In 24 images	34
In 25 images	7
In 26 images	1
In 27 images	2

## 2D Keypoints Graph

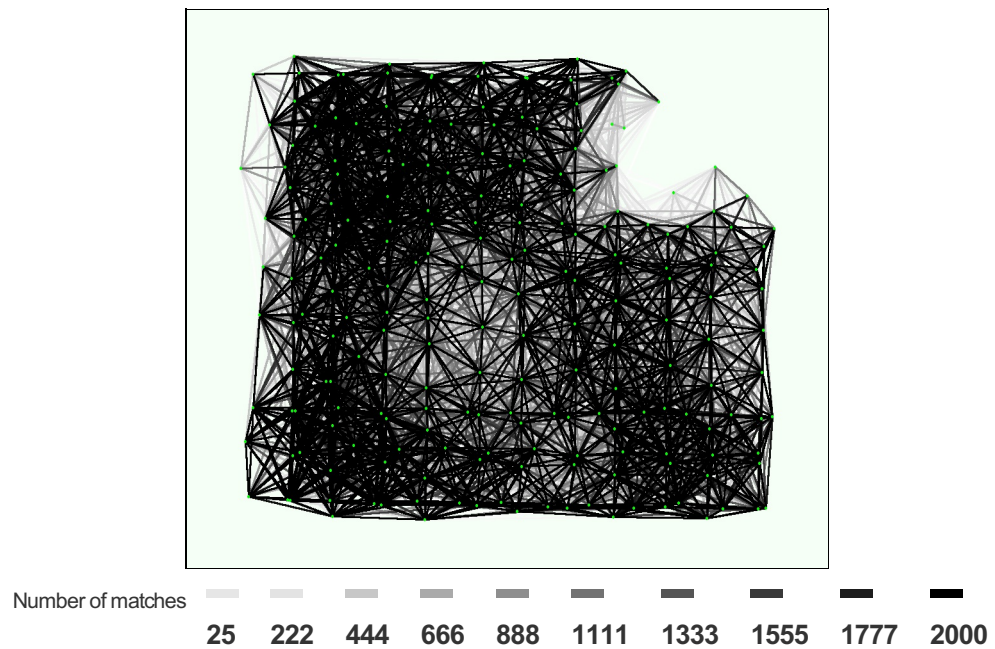


Figure 5: Top view of the geotags with a link between matching images. The darkness of the links indicates the number of matched 2D keypoints between the images. Bright links indicate low confidence and would require more overlap between the images or better quality images.

## Most visible 2D keypoints

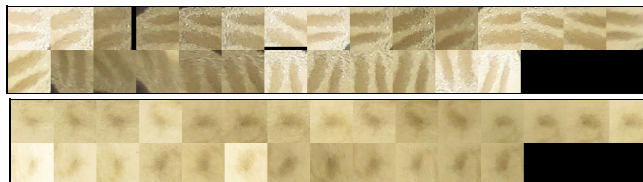


Figure 6: Cropped area of 2 3D points arising from 27 2D keypoints. Each cropped area should represent the same 3D object.

## Geotag variance

Geotag localisation variance	sigma m
Longitude direction (x)	0.704
Latitude direction (y)	0.801
Altitude direction (z)	1.340

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.