Quality Report

Pix4UAV Desktop 3D

See *Quality Report Help* for detailed explanations. Generated with version 2.1.8

Summary

Project:	swampfoxrgb
Camera name:	NEX-5N_16.0_3264x4912
Average Ground Sampling Distance (GSD):	6.88 cm
Area covered:	0.63 sq. km / 63.04ha / 0.24 sq. mi.
Image coordinate system:	WGS84
Output coordinate system:	UTM 60 / WGS84
Processing type:	rapid
Time for Initial Processing (without report):	02m:56s

Quality Check

Images:	median of 1557 keypoints per image	✓
Dataset:	128 out of 131 images calibrated (97%)	✓
Camera optimization quality:	2.51 % relative difference between initial and final focal length	✓
Matching quality:	median of 163 matches per calibrated image	✓
Georeferencing:	no GCP	⚠

Preview

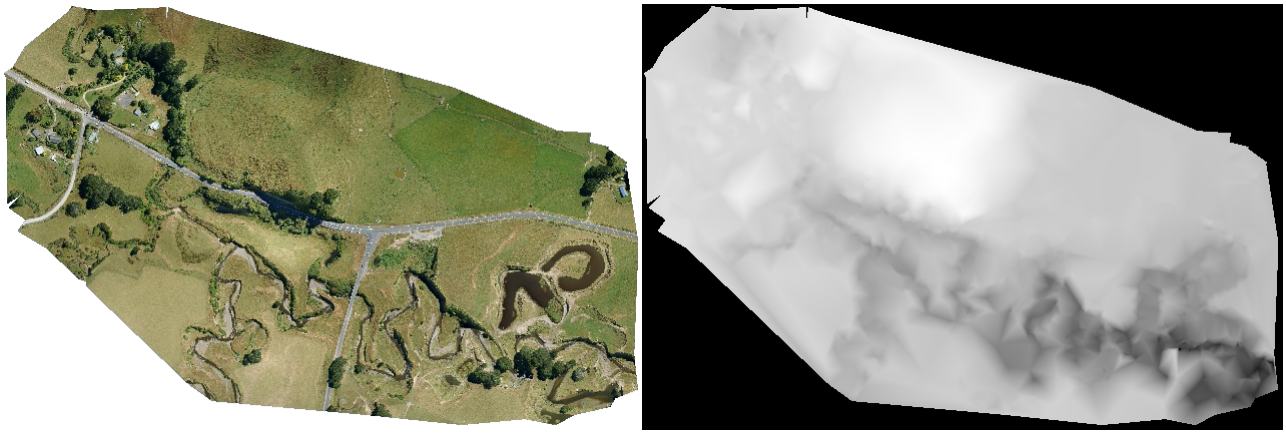

Figure 1: Ortho mosaic and the corresponding sparse digital elevation model (DEM) before densification.

Calibration details

Number of calibrated images:	128 out of 131
Number of geotagged images:	131 out of 131

Geotag position

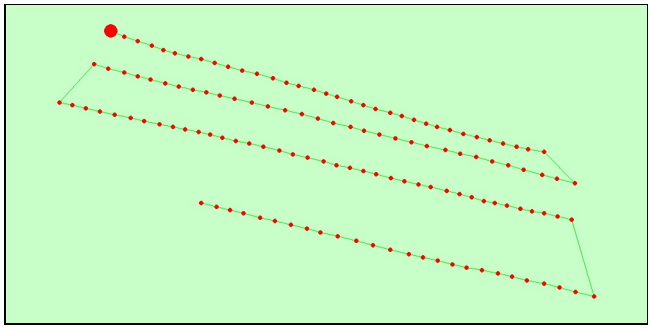

Figure 2: Top view of the geotags. The green line follows the geotag in time staring from the large red dot.

Optimized camera position

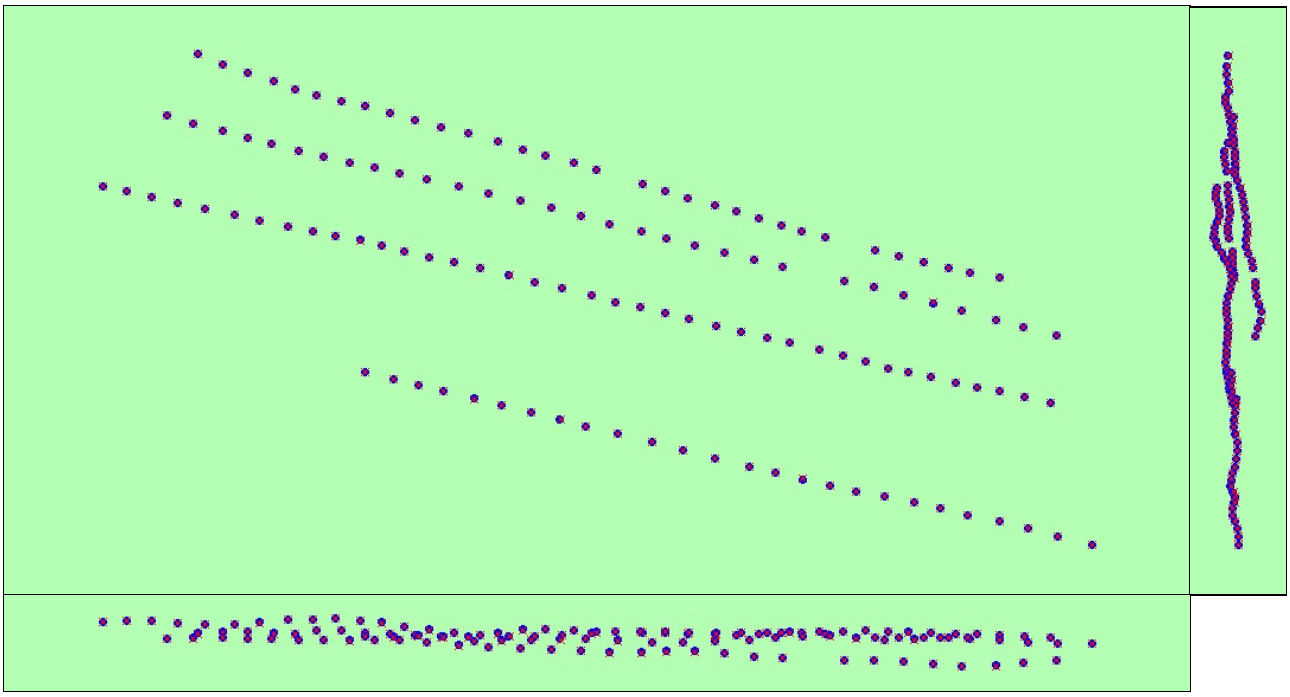

Figure 3: Offset between image geotags (small red crosses) and optimized positions (small blue dots) as well as the offset between the GCPs (large red crosses) and their optimized positions (large green dots) in the top-view (XY plane), front-view (XZ plane) and side-view (YZ plane).

Geotag variance

Geotag localisation variance	sigma [m]
Longitude direction (x)	0.0498295
Latitude direction (y)	0.0220637
Altitude direction (z)	0.112362

Table 1: Relative camera localisation accuracy of the geotags in meters. Please note that this does not correspond to the accuracy on the ground.

Overlap

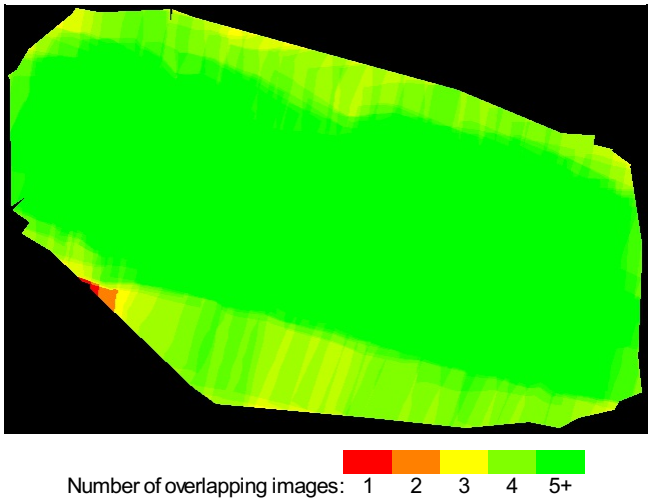

Figure 4: Overlapping score computed for each pixel of the orthomosaic.
Red indicates areas where the overlap between the images is too low and could lead to poor results. For good quality results, the overlap should be over 5 images (green) for every pixel of the mosaic.

Bundle Block Adjustment details

number total keypoint observations for bundle block adjustment	20734
number total 3D points for bundle block adjustment	8530

mean reprojection error	0.132905 [pixels]

Internal Camera Parameters NEX-5N_16.0_3264x4912 sensor dimension: 36 23.9 [mm]

	Focal length	Principal point X	Principal point Y	RD 1	RD 2	RD 3	TD 1	TD 2
initial values	3238.340 [pix] 23.734 [mm]	2456.000 [pix] 18.000 [mm]	1632.000 [pix] 11.961 [mm]	0.000	0.000	0.000	0.000	0.000
optimized values	3319.682 [pix] 24.330 [mm]	2404.717 [pix] 18.376 [mm]	1565.542 [pix] 12.448 [mm]	-0.055	0.067	0.017	-0.001	-0.001

2D Keypoints Table

	Number of 2D keypoints per image	Number of matched 2D keypoints per image
Median	1557.000	163.000
Min	639.000	37.000
Max	2246.000	298.000
Mean	1518.742	161.984

3D points from 2D keypoints matches

	Number of 3D points observed
In 2 images	6218
In 3 images	1498
In 4 images	489
In 5 images	199
In 6 images	73
In 7 images	33
In 8 images	10
In 9 images	2
In 10 images	4
In 11 images	2
In 12 images	2

2D Keypoints Graph

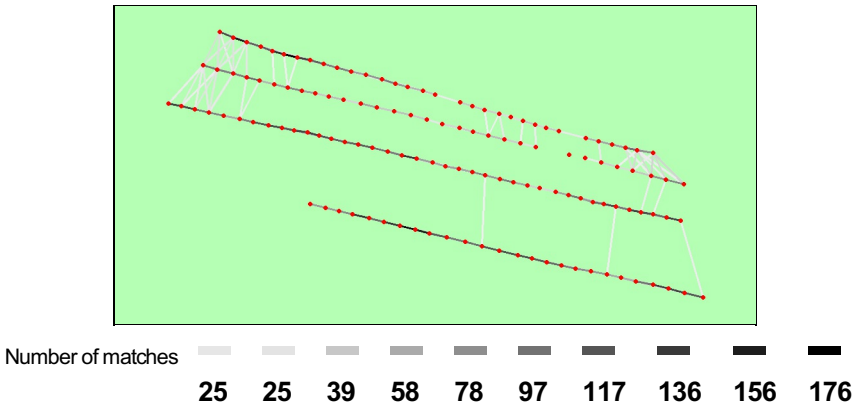

Figure 5: Top view of the geotags with a link between matching images. The darkness of the links indicates the number of matched 2D keypoints between the images. Bright links indicate low confidence and would require more overlap between the images or better quality images.

Most visible 2D keypoints

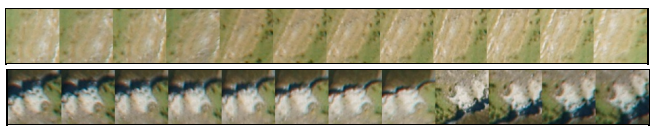

Figure 6: Cropped area of 2 3D points arising from 12 2D keypoints. Each cropped area should represent the same object on the ground.