

Automatic Reconstruction Report (version 1.11705)

[pdf](#)

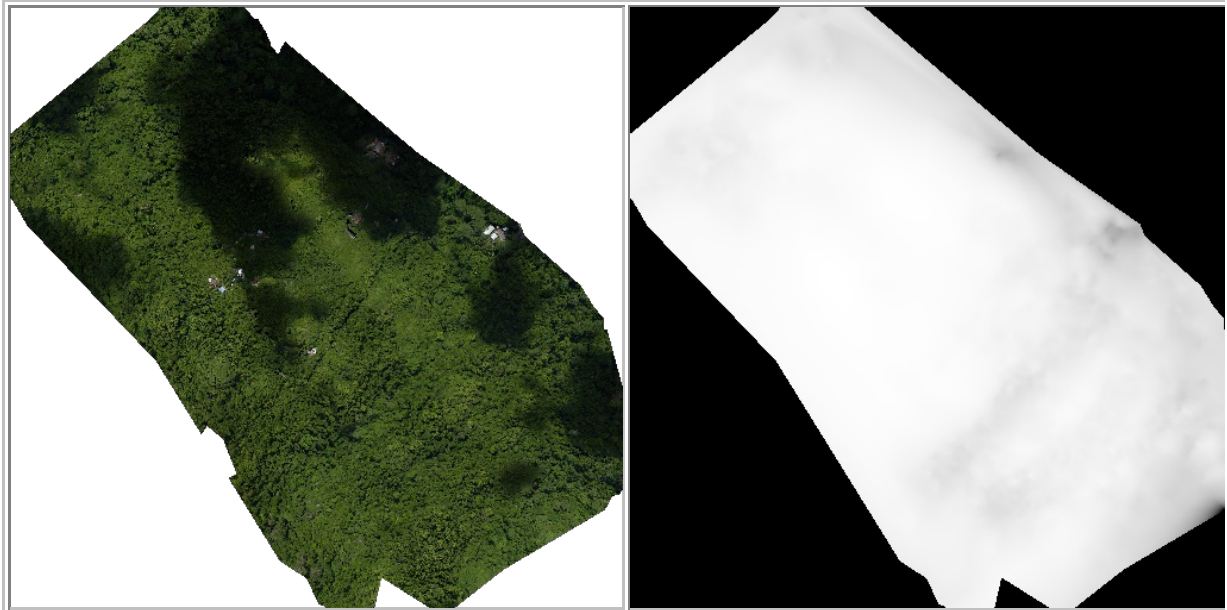


Figure 1: Ortho mosaic (left) and (right) the corresponding digital elevation model (DEM).

Overall Quality

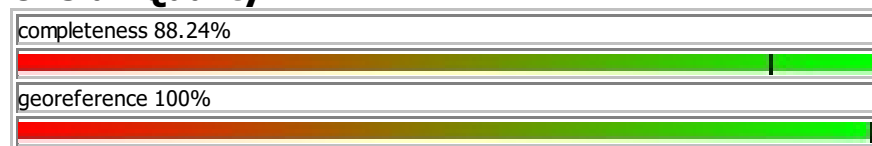


Figure 2: Completeness refers to the percentage of original images that are included in the final ortho image. A low value might indicate insufficient overlap between the original images. The accuracy of the geotags relates to the quality of the geotags that are associated with each original image (see Figure 6).

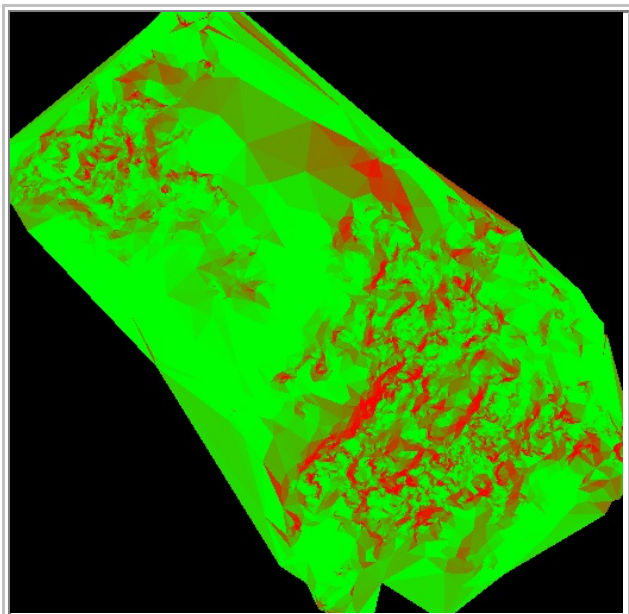


Figure 3: Quality of the ortho mosaic. Red indicates areas where the ortho mosaic and the digital elevation model could contain artefacts, e.g. non-linear building edges.

Original Image Dataset

The dataset contains 114 original images.

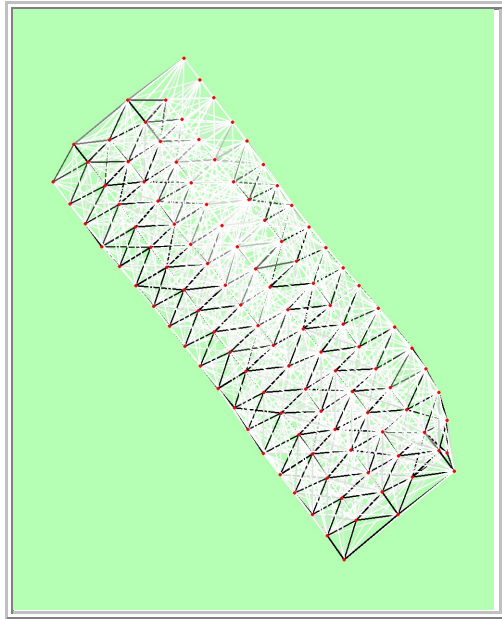


Figure 4: This connectivity graph displays the number of potential keypoint matches (color coded in gray values) between the original images. A high quality result can be obtained if each original image is connected with sufficient matches to the neighbouring images along all directions. The large red dot corresponds to the starting original image. The green line follows the original image geotags over time. Keypoint matches consist of distinct images keypoints that are visible in two images and for which a correspondence could be established.

Result

The ortho mosaic is composed from 101 out of 114 original images.
The ortho mosaic covers an area of 1.2 sq. km / 120.41ha / 0.47 sq. mi.

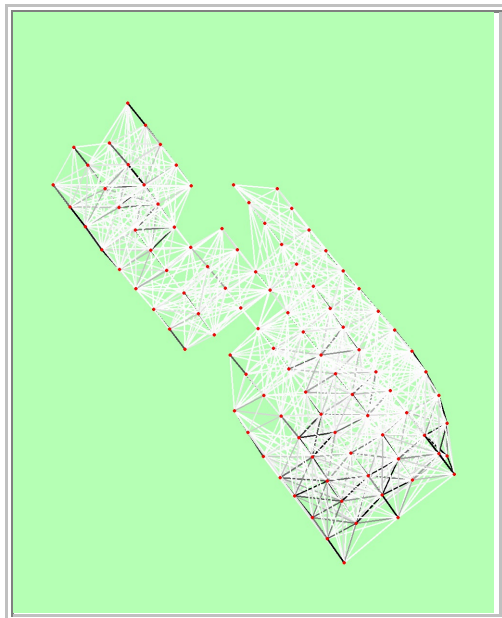


Figure 5: The final connectivity graph displays verified keypoint matches between the original images after bundle block adjustment, which is a global optimisation of the position and orientation of the original images and the digital elevation model.

	number of keypoint observations per original image
median	820
min	51
max	6461
mean	1986.03

	number of 3D points observed
in 2 images	76657
in 3 images	9847
in 4 images	2234
in 5 images	783
in 6 images	347
in 7 images	182
in 8 images	96
in 9 images	51
in 10 images	14
in 11 images	9
in 12 images	4
in 13 images	1

Matching statistics for the bundle block adjustment.

number total keypoint observations for bundle block adjustment	200589
number total 3D points for bundle block adjustment	90225
mean reprojection error	1.26577 [pixels]

Characteristics of bundle block adjustment.

Georeference

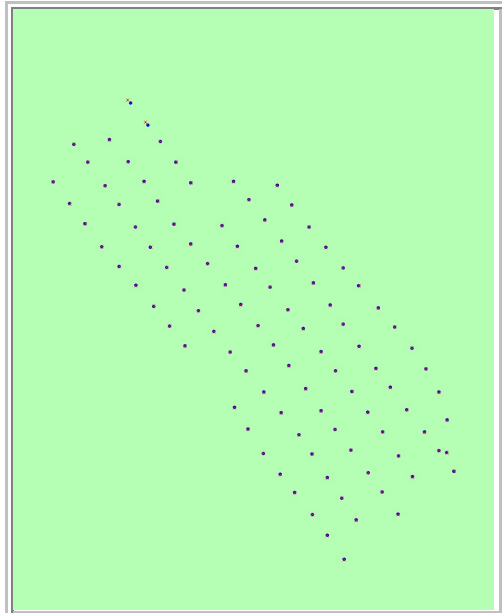


Figure 6: Offset between image GPS tags (red crosses) and estimated positions of the original images (large blue dots) in the horizontal plane.

geotag localisation variance	sigma [m]
longitude direction (x)	0.127354
latitude direction (y)	0.128976
altitude direction (z)	0.276411

Localisation accuracy of the geotags in metres. 2 out of 101 original image geotags have been labeled as inaccurate (see Figure 6).