**DroneDeploy**

## Map #1

# Accuracy Report

Report created on November 21, 2023

## 📄 Summary

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|---|---|
| **Date Flown** | 07/19/2017 |
| **Drone Used** | X3 (Inspire 1/M100/M600) |
| **Map Area** | 451.9921 Acres |
| **Map Resolution** | 2.79 cm/pixel |

# Processing Quality

*The image density and stitching coverage indicate how likely an image set is to produce a high quality map. Lower numbers may indicate distortion or missing areas within the map.*

**Image Stitching**        100 % - Excellent        **Avg. Images per Pixel**        22.418 - Excellent

# Number of Overlapping Images Per Pixel

*Blue areas of the map with high numbers of overlapping images (8+ overlapping images per pixel) indicate high quality. Red and yellow areas with fewer overlapping images may appear distorted.*
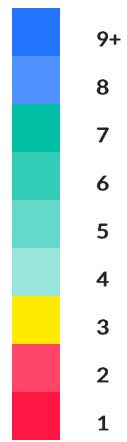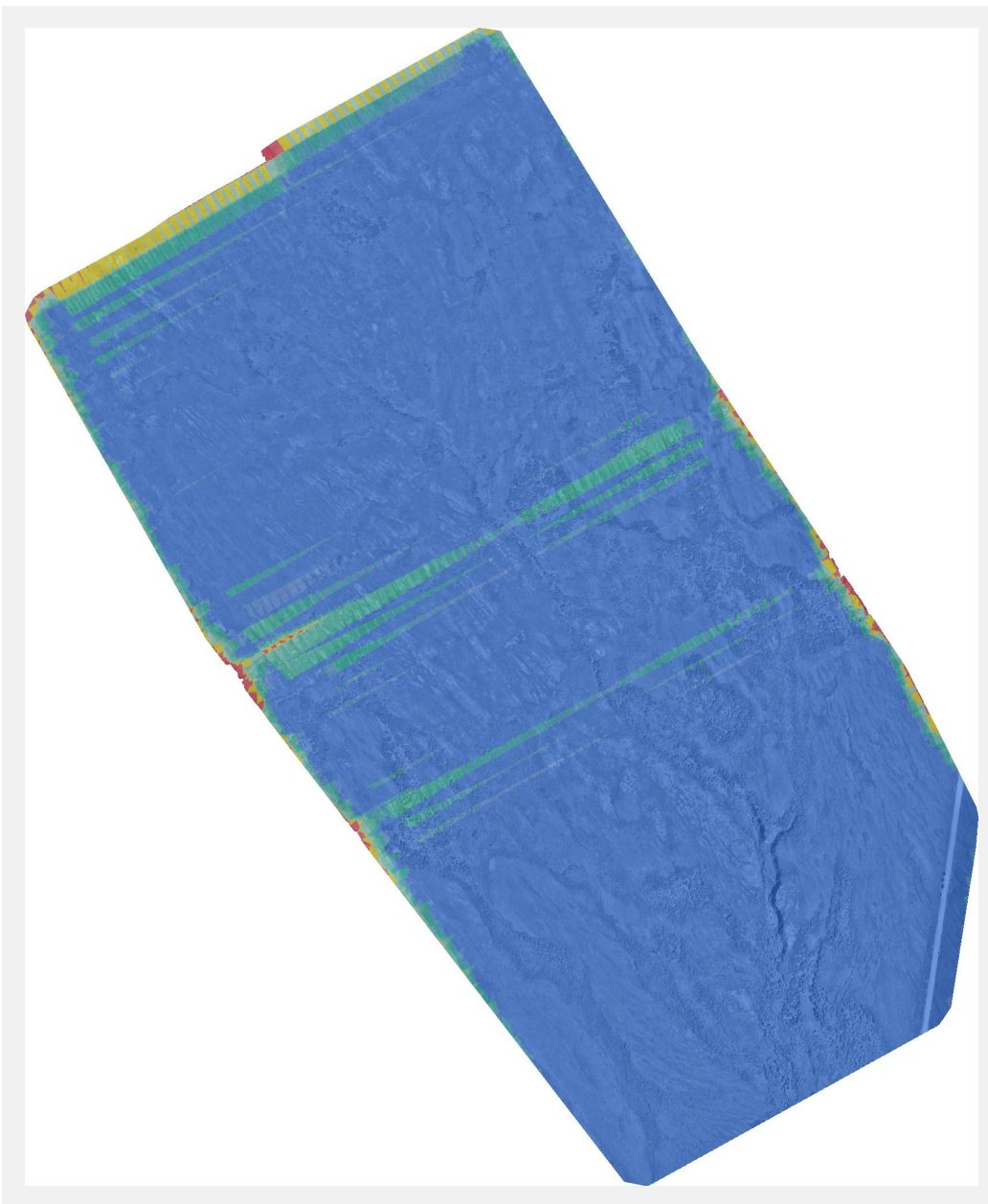
## Camera & Flight Info

*Improving the quality of the data captured will improve the quality of the map generated.*

| | | | |
|---|---|---|---|
| **Camera Model** | FC350 | **Image Resolution** | 18 MP |
| **Avg. Flight Altitude** | 244.74 Meters | **Number of Images** | 2999 |
| **Frontlap Settings** | 75% | **Sidelap Settings** | 65% |

## ⊕ **Accuracy**

### Relative Accuracy

*Measurements of distance, area and volume within the map should be accurate to within 1-3 times the ground sampling distance. Map measurements are typically within 1-3% of ground-based measurements.*

| | |
|---|---|
| **Ground Sampling Distance (GSD)** | 2.79 cm/pixel |
| **Approx Horizontal Relative Accuracy Range** | 360.09 cm |
| **Approx Vertical Relative Accuracy Range** | 103.72 cm |
| **Optimized Camera Location Error** | **X** 299.19 cm **Y** 200.38 cm **Z** 103.72 cm |
| **Optimized Camera Location XYZ RMSE** | 216.35 cm/pixel |

## 📍 **Glossary**

## Camera Location XYZ RMSE

The camera location XYZ root mean squared error (RMSE) is the average image location error in the XYZ axis for all images in the map. The image location error is the difference between the image location that is recorded by your drone's GPS and the corrected image location that is calculated during map processing. Therefore, as an example, a 10ft Camera Location XYZ RMSE means that on average in the XYZ dimension image GPS locations were 10ft away from the corrected image locations.

*Please note that camera location error does not correspond to the true accuracy of a map. For example, poor GPS conditions can cause large camera location errors but if images are properly collected the processed map will still be highly accurate. To truly measure map accuracy you must include checkpoints or an object with known dimensions which can be measured in the processed map to check for differences.

## Checkpoint XYZ RMSE

The checkpoint XYZ root mean squared error (RMSE) is the average checkpoint location error in the XYZ axis. The checkpoint location error is the difference between the checkpoint location as measured by your precision GPS device and the correction checkpoint location that is calculated during map processing.

*Please note that checkpoint location error is a measure of the absolute accuracy of your map. Systematic errors can cause a map to have large checkpoint location errors and a low absolute accuracy but the map may still have a high relative accuracy. For example, shifting all the points in a map by 1ft in the Z direction will create a 1ft checkpoint location error without effecting the relative map accuracy.

## EPSG Code

An EPSG code is a registered shorthand for the full definition of a specific spatial reference system. This can include reference system parameters like the reference datum, refence ellipsoid, geoid, the map projection if used, and the units of measurement.

## Ground Control Points

Ground control points (GCPs) are visual targets placed throught your mapping area. The geographic location of the center of each target is then measured with a precision GPS system. Then these known locations are used by the processing software to accurately position you map with respect to the real world.

## Ground Sampling Distance (GSD)

The ground sampling distance is the distance between pixel centers as measured on the ground for nadir images. GSD can be decreased by flying lower or by using a camera with more megapixels. GSD will determine your maximum orthomosaic resolution.

## GCP XYZ RMSE

The ground control point (GCP) XYZ root mean squared error (RMSE) is the average GCP location error in the XYZ axis across all the processed GCPs. The GCP location error is the difference between the GCP location as measured by your precision GPS device and the corrected GCP location that is calculated during map processing.

*Please note that GCP location error does not correspond to the true accuracy of a map. This is because the corrected GCP locations are calculated using a mathematical estimation which is weighted so corrected locations will be close to the measured location. To truly measure map accuracy you must include checkpoints or an object with known dimentions which can be measured in the processed map to check for differences.