

Quidich: Corridor Case Study

Account Background

In the peak of the heat just before the 2016 monsoon Quidich mapped part of a corridor for a surveying client. Our client wanted to see how drone imagery compared to traditional techniques for land survey. The ___ area in question was an upcoming ring road just outside of Pune, Maharashtra. Using the SenseFly Ebee, a machine many consider to be the world's best mapping drone we were proud to deliver a DEM and orthomosaic with a ground sampling distance (pixel size) of 4cm to the client.

Solution Devised

Our Ebee flew at roughly 14-15 m/s for 15 minutes, capturing 237 images with 70% overlap. Using an 18.2 MP (mega pixel) camera capturing RGB images we produced into a true color image showing the entirety of the area of interest. To ensure accuracy of our datasets, we had five GCP's (ground control points) with geographical coordinates provided by a powerful differential GPS system. To process these images we use photogrammetry software and process the images with a complex understanding of the specific environmental conditions of the flight in mind. Using our powerful data processing computer (32gb RAM, 8gb video RAM, 3.8ghz quad core processors) we were able to complete all the data processing shortly after returning home from the field.

Results

Number of People: 3

Number of Photo's: 237

Flight Time: 15 Minutes

GSD (pixel size) : 4cm

Flight Altitude: 110m

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Summary

The high resolution orthomosaic can be used to identify infrastructure, highlight property ownership delineations, and give a bird's eye view of the area for more efficient construction planning. In addition we provided the client with a Digital Elevation Model (DEM); a raster (pixel) format topographical data layer where each pixel has an elevation value for the corresponding real world location. Our DEM was conditioned to be a ground elevation model; we removed trees and building's from the DEM, providing a more powerful and accurate elevation model. To clean the DEM, the tree's and buildings were manually classified in the software, and then removed from the model. Using drone imagery we can survey land much quicker, cheaper, and as accurately as traditional land survey techniques. The client was happy with our results, and shocked at how we were able to deliver our results to him in just under a week, a small percentage of the time it would take his surveying team to complete the task with a total station.