

The use of UAV imagery equipped with multispectral camera for Precision Agriculture applications

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Abstract

Precision Agriculture (PA) tends to become a contemporary trend nowadays, as agriculture constitutes a really big part of economy with great social impact around the world. Among the advantages of using Precision Agriculture (PA) are the decrease in cost, time and human resources. Aerial remote sensing data processing and interpretation is a modern way of recognizing and classifying vegetation, within high resolution and precision imagery outputs, which can be utilized for further image processing and classification such as in Normalized difference vegetation index NDVI, Modified Chlorophyll Absorption Ratio Index, MCARI, and Modified Soil-Adjusted Vegetation Index, MSAVI. The application of such thematic products may lead to the best decisions for the most prominent ways of interference during the entire cultivation process. Using unmanned aerial systems (UAS), onboard sensors and GNSS for better precision and of course high residual multispectral images with several bands which can give precious information after being post processed, the data acquisition phase has become relatively easy and with the lowest cost, not to mention the frequent update upon request. In this work, we present a multispectral flying platform. The proposed solution is based on a commercial Quantum Trinity F90+ drone equipped with a combination of a high-res RGB camera UMC R10C and a multispectral MicaSense RedEdge-MX camera.