

Use of Unmanned Aerial Vehicles for precision agriculture

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BACKGROUND:

Woodleigh Farms Ltd., an agricultural crop producer operating in Cavan, Ont., had been using unmanned aerial vehicles (UAV) to inspect in-progress crops with normalized difference vegetative index (NDVI) and near-infrared (NIR) sensors. Rather than a manual inspection, which was done in the past, a drone was used to cover more area and remove human error. However, during the farm scouting operations, it was identified that their software was unable to incorporate and process the NDVI images into the farm software programs. Woodleigh Farms Ltd. required bridging software (middleware) that would integrate farm software with the drones to gain a competitive edge in crop scouting.

OBJECTIVES:

- To develop middleware that can process the data from the UAV and provide high resolution images.
- To ensure the middleware incorporates high resolution NDVI images into a variety of databases.

OUTCOME:

By working with Durham College (DC), Woodleigh Farms Ltd. received middleware that integrated their software with that of individual farmers. It uses high resolution NDVI images from the UAV as inputs and develops an output that can be applied to a variety of farm software. Farmers using different kinds of software can now use this new application to incorporate data from the drone into their database, and Woodleigh Farms Ltd. can scout fields using different methods and with a high level of accuracy. This translates into more contracts for crop scouting. The company is now targeting primary agricultural producers with more than 760 acres and using third-party imaging services.

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