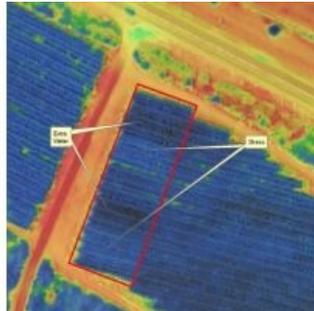


# Integrated UAV Multispectral Mapping Solution for Agriculture



Icaros, a leading provider of aerial imaging software, and Agrowing, a leading supplier of multispectral sensors and analytics software, are launching an integrated unmanned aerial vehicle (UAV) product that bundles Icaros' OneButton software into Agrowing's solution stack. This automates the entire workflow, from image capture through to generation of fully indexed orthomosaic maps for

agriculture.

As part of the agreement between the companies, Agrowing will offer an exclusive product bundle that includes Agrowing's multispectral sensor, Icaros' OneButton Standard Edition, and Agrowing's agriculture solution. The combined features enable Agrowing users to process imagery into high-fidelity fully indexed orthomosaic maps for agriculture – which are crucial for professional precision analytics.

## Multispectral cameras

Agrowing's sensor technology represents a unique and advanced patent pending multispectral solution to capture four 8MP or 10MP bands each, for NDVI and all other vegetation indices on a single sensor. The technology turns DSLR cameras into high-end multispectral cameras. The current offering is compatible with modified (full spectrum) Sony cameras coupled with Near IR and Red-edge lenses. Based on the NEX5, Alpha 5xxx, ILCE QX1 and UMC-R10C, Agrowing's solution provides 8MP per band, and based on the Alpha 6xxx cameras it provides 10MP perfectly aligned colour channels. E-mount lenses are of 25mm focal length and achieve <1% distortion. An additional wide-angle, low-distortion lens, of 62 degrees HFOV, is currently under development.

According to Tom Bosanko, CEO at Icaros, thanks to Agrowing's 10 megapixels it can collect almost five times the field area, at much higher resolution and with far less distortion than with other leading multispectral sensor brands, in the same time using the same drone.

Icaros and Agrowing are working closely together to include a correction matrix for the distortion per sensor/lens combination that will be part of the OneButton processing.

## Orthorectified 2D maps and 3D models

Icaros' OneButton family for drone image processing, aims to let end-users easily and automatically generate geospatially precise, fully orthorectified 2D maps and 3D models from frame-based aerial imaging systems. Originally engineered for manned aircraft sensors, the OneButton software has been modified to accommodate the unique collection conditions of unmanned aerial systems (UAS).

Version 5.1 of OneButton Standard and Professional image processing software for UASs contains advanced algorithms to process images from Agrowing's high-end multispectral sensors.

According to Ira Dvir, CEO of Agrowing, Icaros and Agrowing have created a one-of-a-kind, professional, state-of-the-art, automated agriculture solution for the global commercial drone industry. They offer the only solution on the market that is able to acquire high-resolution, low-distortion multispectral imagery from both high and low altitude. This precision agriculture solution enables the creation of high-resolution multispectral imagery banks of vegetation pests, diseases and pathogens.

## Availability to OEMs and End Customers

The product bundle, available through Agrowing, is now being offered to drone manufacturers that want to offer a complete solution for the agriculture market.

In the second half of 2017, a product that combines the sensor/software bundle with a drone specifically designed for the precision farm market will be available from [Walkera](#) through their worldwide channels. Called the AgroVoyager, it was first announced at Commercial UAV Expo Europe in June, and it will be demonstrated and offered for sale at InterDrone, 6-8 September in Las Vegas at the Walkera booth.

The Agrowing multispectral sensor and agriculture software solution will be combined with the new high-end AgroVoyager UAV specifically targeting the agriculture market.

Service providers and farmers with existing drones can also purchase the bundle for adaptation to existing drones they are flying using Agrowing's sensor gimble mount.

## **New standard for multispectral mapping with UAVs**

According to Tom Bosanko, CEO at Icaros, the company's long-term experience in large-scale multispectral remote sensing and mapping projects has been incorporated into its photogrammetric software to provide a professional and enterprise-scale multispectral solution.

OneButton creates a complete image processing workflow for aerial image data and can front-end both GIS and analytics workflows to enable customers to solve challenging problems related to everything from agriculture and forestry to utilities and city planning. It is highly customisable to meet the needs of specific vertical market applications.

OneButton automatically processes raw raster imagery with onboard GPS/IMU data to stitch the individual scenes together into seamless, colour-balanced orthomosaics meeting photogrammetric precision and quality standards. Outputs include digital elevation models (DEMs), true colour 3D point clouds, and multispectral mosaics – all ready for ingestion directly into GIS and analytics software environments.

Current users of OneButton Standard and Professional editions can download and install the latest version [here](#).

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<https://www.gim-international.com/content/article/integrated-uav-multispectral-mapping-solution-for-agriculture>

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