mdLiDAR1000: taking the fully integrated drone lidar solution to the next level

Drone solutions have an integration problem. "Over the past year," Microdrones president Vivien Heriard-Debreuil said, "we saw laser sensors, airframes, and software released, but the end user was expected to perform the integration. Is that helpful?"

Microdrones doesn't think so, and that's why the company is present at this year's ILMF to showcase its mdLiDAR100, an easy-to-use drone lidar solution that comes fully integrated with everything you need to start capturing aerial lidar data. That means everything: it comes complete with a drone, a fully integrated lidar payload, the software for processing data, and all the support and training necessary to help a user through the whole process. Microdrones says that is optimized for end-to-end workflows in land surveying, construction, oil & gas, and mining applications.

Hardware

The mdLiDAR1000 weighs in at 6 kg and promises operation for 25 minutes, or up to 10 km of total flight distance under standard flight conditions. It includes includes a lightweight, downward-oriented lidar sensor with an 85° FOV, and a survey-grade Applanix APX-15 UAV single board module that houses both a GNSS satellite receiver for localization, and an IMU for pose estimation.

Together, this hardware can hit an accuracy of 6 cm when flown at 40 meters height and at a speed of 3 meters per second.

A software suite for end-to-end workflows

To gather data with the system, the user starts with the mdCockpit Tablet software, which allows them to set the survey area with swipe gestures, as well as select desired point density, or flying height and drone speed. From there, the software will automate the survey flight, as well as allow the user to monitor the data collection using any Android tablet.
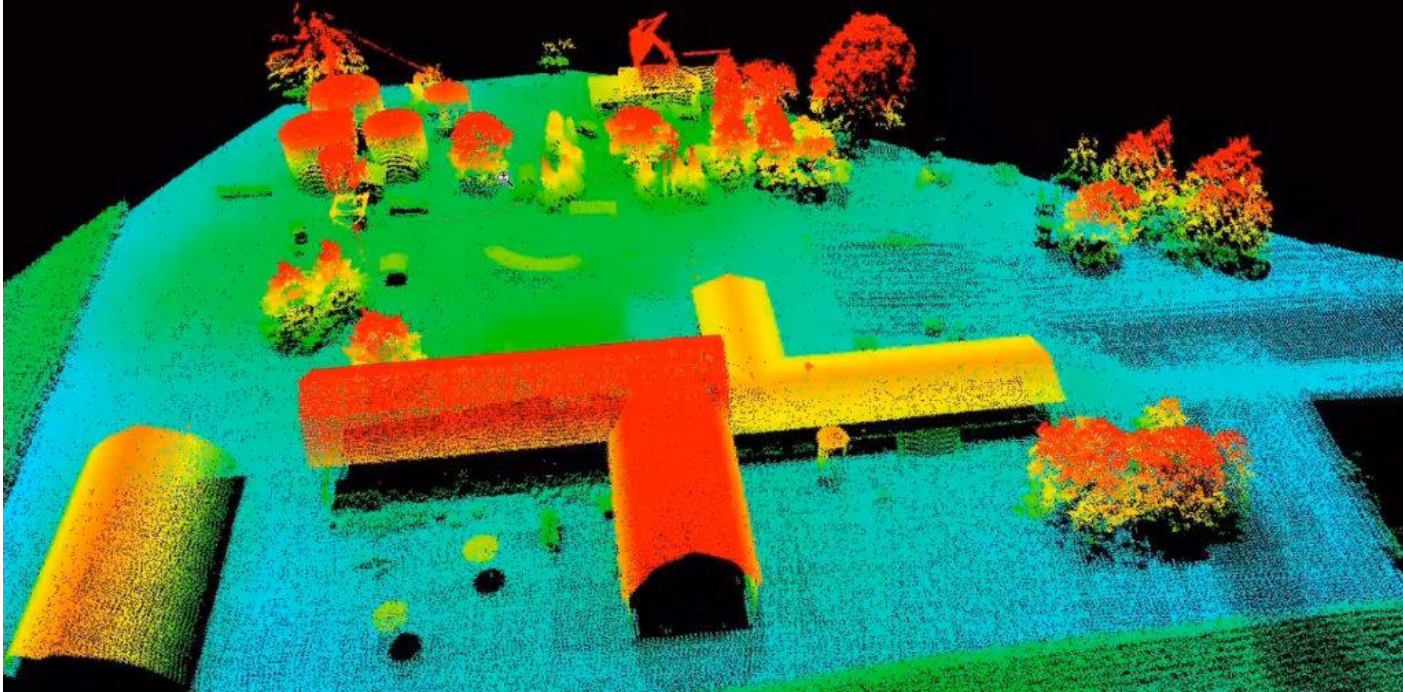
An example data set.

Once the flight is done, the user moves the data to the included POSPac UAV software to perform direct georeferencing of data. This software is designed specifically to achieve the highest possible accuracy when processing raw data from the included hardware.

At the very end of the workflow, the mdLiDAR processing software automatically produces a final point cloud in LAS format for use in your GIS or CAD software.

One size does not fit all

Microdrones understands that different geospatial professionals have different needs. That's why, in addition to the comprehensive support offered alongside the mdLiDAR1000, the company offers training for new users through the mdAcademy. Using this service, users can "become an expert at flying and maintaining [their]platform, to ensure many years of successful use."

As for the future, Microdrones has announced that mdLiDAR1000 is only the first step, with three more fully integrated drone lidar solutions on the way. With these solutions, Microdrones hopes to meet the accuracy, flexibility, and budget requirements of a wide range of geospatial users, all while offering an uncommon ease of use and comprehensive support.

For more information, see Microdrones at ILMF booth 113, or see the product page here.