

Mapping a Runway at an International Airport

Other than some light cloud cover, conditions were ideal for a late autumn flight. A light, November breeze chilled the air enough to make it necessary for Microdrones Test Pilot Yannick Savey to keep his coat on as he waited for clearance on the airstrip at Griffiss International Airport.

Right: Microdrones UAV Test Pilot Yannick Savey is a member of the LiDAR team at Microdrones. The team was able to use LiDAR to generate a detailed point cloud model of the airport runway.

Below: Savey ran through the final flight preparations and reviewed the mission plan one last time just as the tower radioed him the clearance he'd been waiting for.

Years ago, it would not have been uncommon to witness a US Air Force F-106A screaming down the runway while a row of T-33A's were parked on the ramp at Griffiss Air Force Base. Nowadays, the fighter jets and most of the military aircraft are long-gone, ever since the base was decommissioned in 1995 making way for a civilian and commercial district: the Griffiss Business and Technology Park.

Today the transformed air base hosts more than 60 tenants who focus on technology,



manufacturing, aviation, and education. The airfield is now known as Griffiss International Airport, which the FAA selected as one of six designated UAS test sites. This made the airport the perfect location for a Microdrones office, which is part of the reason that the global company established a location in New York.

He powered the drone to begin takeoff. The four main drone rotors quietly hummed to life as the Microdrones mdLiDAR1000 system lifted off the ground and eased into the airspace above the runway.

Yannick Savey is a UAV



test pilot and member of the LiDAR team at Microdrones. With offices in NY state, Vaudreuil-Dorion, Canada and Siegen, Germany, the global technology integrator continues to innovate the com-

mercial drone industry by packaging unmanned aircraft with the most advanced sensors and software available.

Yannick piloted a Microdrones mdLiDAR1000, an end-to-end LiDAR solution com-



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binning a drone, a LiDAR payload, fully integrated software, workflow, training and support. The goal of the mission was to survey active runways and generate a detailed point cloud model. That model can be used by airport management to make decisions about maintenance and future projects.

Vivien Heriard-Dubreuil, President of Microdrones explains how his team got to this point.

"We have become the industry leader providing unmanned Vertical Take Off and Landing systems for mapping. We are the reference- we have the best solution today. With LiDAR, we are adding a new tool for customers to address new markets and new applications; like being able to map power lines and vegetation, and output detailed point cloud models."

This type of mission had not been attempted before- drones flying on an active runway to assess the state of its infrastructure. However, the

mdLiDAR1000 had all the technology and resources to get the job done. The system combines the versatility of Microdrones field-proven md4-1000 quadcopter with a fully integrated LiDAR sensor that efficiently scans at an 85 degree field of vision. The hardware is packaged with easy to use mdLiDAR processing software specially designed to optimize data collected by the mdLiDAR1000 system. Furthermore, Microdrones has streamlined the entire process by creating an easy end-to-end workflow.

Heriard-Dubreuil goes on to describe how Microdrones became one of the industry's lead innovators when it comes to LiDAR.

"In the early days, our job was to engineer the most durable and resilient drones. Now, geospatial pros demand a faster, more effective way to capture elevation data with extreme accuracy. We applied our R&D to an end-to-end drone based LiDAR



Far left: Stefanie Van-Wierfs is the LiDAR Solutions Development Lead at Microdrones. She and the team have been working diligently to provide an integrated LiDAR package consisting of drone, payload, software, workflow, training and support.

Left: Microdrones mdLiDAR1000 can help any geospatial professional plan a mission, fly the md4-1000, process georeferencing data, and create a point cloud visualization in standard ASPRS LAS format usable in any GIS or CAD software environment.

mapping package. From our prior success with the mdMapper1000DG we knew the ability to penetrate vegetation and ground foliage makes LiDAR the most versatile tool for elevation mapping. That's why we're developing an entire family of fully integrated aerial LiDAR systems."

High above the runway at Griffiss International Airport, the mdLiDAR1000 was finalizing its scan of the airfield. Once Yannick received the signal that the scan was complete, he guided the aircraft back to earth and gently landed on the airstrip. There, the Microdrones team downloaded and processed the raw laser and georeferencing data using mdLiDAR Processing

Software to generate the final 3D point cloud.

The mission was a success, and the Microdrones team was successfully able to create a 3D visual representation of the runway at Griffiss International Airport, which can be viewed in this video: <http://lp.microdrones.com/xyht>.

Heriard-Dubreuil is pleased with the efforts. "It's all about seeing the results and confirming that it works... it's about the data, the point cloud that we produced."

To talk with the Microdrones Sales Team about the new LiDAR solutions from Microdrones, follow this link and complete the short form: <http://lp.microdrones.com/xyht/> ■

CORPORATE PROFILE

FOUNDED IN GERMANY IN 2005, MICRODRONES developed the world's first commercial quadcopter and the company still leads the industry with their turn-key professional UAV solutions.

By pairing robust drones with cutting-edge sensors, Microdrones makes it easy for businesses to start using UAVs for surveying, area and corridor mapping, construction, inspection, precision agriculture, mining, and other commercial applications.

Quality German engineering, extra-long flight times, resistance to environmental challenges, and technology like direct georeferencing make Microdrones solutions the safest, most efficient, and most cost-effective choice for commercial users.

Microdrones recently expanded into North America and forged a partnership with Trimble to better serve markets around the globe. To learn more about Microdrones, visit www.microdrones.com.

"We were very excited to learn that Trimble partnered with Microdrones... we are thrilled about the possibilities and the laser options. Everything was so easy and technically developed... it's a great working tool."

WOLFGANG PROBST
CEO and Sales Director
AllTerra Deutschland GmbH



WORK SMARTER WITH ALLTERRA DEUTSCHLAND GMBH AND MICRODRONES®

AllTerra Deutschland GmbH is proud to offer complete UAV mapping packages from Microdrones that include everything geospatial pros need for surveying, mapping, and inspection – and now – a fully integrated unmanned aerial LiDAR system... mdLiDAR1000.

AllTerra Deutschland GmbH is well positioned to support its professional customer base throughout Bavaria, Baden-Wurttemberg, Hesse, and Rhineland-Palatinate, as well as in Austria, with fully integrated mapping and inspection packages.

To get in touch with the Microdrones expert nearest you, complete this form: <http://lp.microdrones.com/xyht/>



A TURNKEY LIDAR SOLUTION

mdLiDAR1000 is a fully integrated system, combining a drone, LiDAR payload, software, workflow, training and support. Produce 3D pointcloud applications with speed and efficiency, even when vegetation is obstructing the subject.

