



# How are Precision Agriculture Professionals Using Drones in 2017?

By Jeremiah Karpowicz

This report is brought to you by:

COMMERCIAL  
UAV EXPO

EUROPE  
20 – 22 JUNE 2017  
BRUSSELS  
[expouav.com/europe](http://expouav.com/europe)

AMERICAS  
OCT 24 – 26, 2017  
LAS VEGAS  
[expouav.com](http://expouav.com)



By Jeremiah Karpowicz

**PREDICTIONS AROUND the economic impact drones are set to have on the farm are as ambitious as they are numerous. Many different experts and organizations have identified precision agriculture as the industry that possesses the greatest amount of potential when it comes to getting the most out of a UAV, but the legal and logistical hurdles around adoption have prevented many professionals from even wanting to explore the technology.**

Ultimately, farmers want to farm, which means they don't necessarily want to take the time to sort through the legalities and technical challenges that utilizing a drone can represent. A process around easing those challenges is unfolding in 2017 though, as the changes to regulation under Part 107 along with new software and sensor technology will allow farmers to take to the sky in a far easier and simpler manner. It's a transition that many have been looking forward to seeing for a long while.

Chad Colby works with progressive farmers and companies to provide a deeper understanding of drone technology and the ways such technology can be utilized. One of his major challenges the past few years was strictly related to the legal issues that flying a drone for commercial purposes represented, all of which have been simplified under Part 107.

"Now that 107 is in play, we can focus on the software and sensors that these drones carry, as well as the analytics that turns the data they capture into useful information," said Colby. "Everyone is working hard to figure out where the financial return comes from. It's going to be another great tool for the grower."

Drones will eventually be thought of as just another tool for farmers to utilize when necessary, and 2017 is an important milestone in that evolution. Farmers now have the opportunity to fully explore and leverage the data gathered by a drone in a way they never have before. How different farmers can and should approach doing so will become a top priority.

**COMMERCIAL UAV EXPO**

Commercial UAV events for:

-  Surveying & Mapping
-  Civil Infrastructure
-  Mining & Aggregates
-  Construction
-  Process, Power & Utilities
-  Precision Agriculture
-  Law Enforcement/  
Emergency Response/  
Search and Rescue

“Not that regulation has been cleared up, we can now focus on the value of the tool and the value of the data and the value of the analysis.”

## The True Driver of Drone Adoption

WHETHER IT WAS A HUMONGOUS farming operation or a single specialty crop grower, concerns about what it meant to legally fly a drone have been at the forefront of growers' minds ever since drone technology became available. Securing a Section 333 Exemption from the FAA had been the only way to legally operate a drone for commercial purposes in the United States, and many farmers did not want to go through that process. Part 107 greatly reduces the barrier to entry, which has changed the way many growers view the technology. However, what's important to note is that sorting through such regulatory challenges is just the first step.

Thomas Haun is Executive Vice president at PrecisionHawk, a global leader in developing and integrating commercial drone technology. PrecisionHawk is dedicated to changing the way businesses view their assets and manage resources, and regulation has been a subject of great importance for stakeholders. It's a topic that has taken on even greater relevance now that Part 107 changes the parameters.

“Regulation obviously was a barrier,” said Haun. “Now that that has been unlocked, the adoption curve has been shifted. There's always been a group of people who were very interested in leveraging drones but they really didn't pursue adoption because of the uncertainty around regulation. Now that it's cleared up, it's about the value proposition you can deliver on the farm. We can now focus on the value of the tool and the value of the data and the value of the analysis.”

Being able to focus on the value of what UAVs can actually do for growers represents an important shift in the industry, because it's something that didn't always come up for growers when they were concentrated on the challenges of flying legally. That shift has contributed to what Norm Lamothe described as a fundamental disconnect between the costs involved in economically collecting data and what the economic results are from a decision made from data. As the Head of UAS Agriculture at Deveron UAS as well as the manager of his family's 500-acre farm in Canada, he's in a unique position when it comes to understanding the issues that growers of all sizes need to work through which go beyond regulation.



COMMERCIAL  
UAV EXPO

EUROPE  
20 – 22 JUNE 2017  
BRUSSELS  
expouav.com/europe

AMERICAS  
OCT 24 – 26, 2017  
LAS VEGAS  
expouav.com

“We believe there is a phenomenal amount of value in drone data for farming but the mechanism for getting that data into the hands of the grower still needs to be perfected.”

“Ultimately, we see the issue for larger farmers and agriculture companies to be centered around logistics and data collection as opposed to regulation being a driver of adoption rates,” said Lamothe. “I think the same theory applies to Canada. We have differences in the way drones are regulated but both markets present the same challenges in presenting a truly economic solution to farmers that want to use drone data to support their decision making on the farm.”

Regulation represented a real barrier for many farmers, but the true obstacle around the adoption of drone technology on the farm is related to something far more fundamental.

### Quantifying the Value Proposition

THE HYPE ASSOCIATED with being able to simply take a drone into the sky and fly over a field was enough to get many growers interested in UAV technology, but that alone was certainly not enough to keep them interested. Some early adopters even became frustrated with the technology because they were unable to do much beyond fly over their fields, and many were not able to find or deliver a return on investment (ROI) with such efforts. Such examples speak to an issue that remains to this day, even as many experts specifically work to address it.

“Quantifying the ‘value proposition,’ has been a challenge,” said Lamothe. “A lot of early work from data has stressed the intangible benefits to crop scouting, etc. Our goal is continue to work with our customers to document and quantify ROI and show how drone data was used to make a decision that directly led to a decrease in input costs or an increase in yields. We believe there is a phenomenal amount of value in drone data for farming but the mechanism for getting that data into the hands of the grower still needs to be perfected.”

Getting the right data into the hands of growers depends on the specifics of an operation. Someone who has 100 acres of a certain crop won’t necessarily be able to use a drone in the same way as someone who has 1,000 acres, even if we’re talking about the exact same crop in the exact same climate. Being able to efficiently and effectively utilize a drone depends on a number of factors, and anyone interested in the technology has to realize the value propositions need to be tied into the rest of an operation.



COMMERCIAL  
UAV EXPO

Commercial UAV  
events for:

- Surveying & Mapping
- Civil Infrastructure
- Mining & Aggregates
- Construction
- Process, Power & Utilities
- Precision Agriculture
- Law Enforcement/  
Emergency Response/  
Search and Rescue

“A grower might be using drone technology for very different purposes depending on the crop and depending on the line item in the budget that they’re trying to address. You have to tailor your message to what someone needs, and farmers really appreciate that, because then instead of trying to sell them something, now you’re trying to solve one of their problems.”

“Whether you’re gathering data from satellites, airplanes or drones, it’s got to integrate into existing farming solutions,” Colby explained. “Integration of all that data, regardless of where it comes from, can be a challenge, but the value of the sensors and drone platforms that are readily available is incredible. We’ve basically got out of the box, turnkey solutions that work great, even if you can’t use them for everything.”

The fact that it’s easier than ever to take a drone into the air due to regulations and advances to the technology itself has created tremendous opportunity for drones on the farm, but that doesn’t mean they’re a fit for every situation or project. Quantifying the value proposition drones can provide for a specific operation or project can be an involved process, but it’s also a necessary one for any grower interested in making sure the technology has a positive bottom-line impact.

### Solving Problems on the Farm

NEW SENSORS WILL ALLOW for an expansion of data types that will result in newer and potentially more unique pieces of information, and that fact has a lot of people excited. However, it’s important for many farmers to begin at the beginning when it comes to adoption, so that they can ensure they’re using the technology in a way that will be specifically beneficial and relevant to their operation and needs, because so many will be using a drone in different ways.

“A grower might be using drone technology for very different purposes depending on the crop and depending on the line item in the budget that they’re trying to address,” Haun mentioned. “You have to tailor that message to what someone needs, and farmers really appreciate that, because then instead of trying to sell them something, now you’re trying to solve one of their problems. That approach is important because frankly, farmers are always being sold something. They’re already hearing about next greatest tool or technology. Unless it’s solving a problem they have a tendency to ignore it, and I can’t blame them for that.”

New opportunities and capabilities are being opened up by drone technology every day, but focusing on efficiencies and solving the real problems they have today can be related to



COMMERCIAL  
UAV EXPO

EUROPE  
20 – 22 JUNE 2017  
BRUSSELS  
expouav.com/europe

AMERICAS  
OCT 24 – 26, 2017  
LAS VEGAS  
expouav.com

“With drones, information is instantly accessible, allowing growers to make immediate decisions, which is solving a real problem that can lead to better decisions. These sorts of examples are all over, and they’ll lead to bigger things.”

something as simple as timing. Precision agriculture professionals have been using soil maps and satellite images for a long time, but the difference a drone can make is around the speed of that information. With drones, information is instantly accessible, allowing growers to make immediate decisions, which is solving a real problem that can lead to better decisions. These sorts of examples are all over, and they’ll lead to bigger things.

“We all know the physical sensors and bands of light that you look at to see stress in plants have been around for a long time,” said Colby. “The challenge becomes how do we make that solution an in-field solution? That means, you open up the tailgate of a truck, you throw a drone in the air, and you don’t need a laptop or the cloud because you’re looking at the data live on your tablet. We’re not far from the day when you can get your system up in the air and have that data stitched together in real time.”

Being able to focus on developing ROIs based on data to highlight how farmers make more money using drones is a topic that has numerous technology advocates excited. The opportunity to collect data at scale by flying beyond visual line of sight (BVLOS) will create even more value for growers of all types, and that fact makes the creation of those models in 2017 even more essential. ■



#### About the Author:

*Jeremiah Karpowicz is the Executive Editor for Commercial UAV News. He has created articles, videos, newsletters, ebooks and plenty more for various communities as a contributor and editor. He is also the author of a number of industry specific reports that feature exclusive insights and information around how drones are being used in various markets. You can read all of those reports [here](#).*

COMMERCIAL  
UAV EXPO  
EUROPE

SQUARE BRUSSELS  
MEETING CENTRE  
BRUSSELS  
20-22 JUNE 2017

COMMERCIAL  
UAV EXPO  
AMERICAS

THE WESTGATE RESORT  
LAS VEGAS  
OCT. 24-26, 2017

# THE SKY'S THE LIMIT

Commercial UAV events for:



Surveying  
& Mapping



Civil Infrastructure



Mining  
& Aggregates



Construction



Process, Power  
& Utilities



Law Enforcement/  
Emergency Response/  
Search and Rescue



Precision  
Agriculture

## About Commercial UAV Expo

Commercial UAV Expo is a conference and exhibition exclusively focused on the commercial drone market. Launched to great success in the US in 2015, the organizers are bringing their winning formula to Brussels with a European-centric event.

In the conference program, UAV industry experts share key insights into the issues large enterprise asset owners face when implementing UAS, including systems selection and integration; developing enterprise workflows, guidelines and policies; data management and integration; and legal, safety and regulatory considerations. Plenary sessions and panels cover topics of interest to all end-users regardless of industry while breakout sessions focus on UAV technology, applications and opportunities in the vertical markets listed above.

The international Exhibition includes airframe manufacturers, component suppliers, software suppliers and service companies.

[expouav.com/europe](http://expouav.com/europe)  
[expouav.com](http://expouav.com)

Produced by **diversified**  
COMMUNICATIONS

