7 THINGS TO KNOW

About Commercial Drones in Europe in 2019

Whether it's for surveying or inspection purposes, in industries that vary from construction to energy to agriculture, operators and organizations from all over Europe continue to recognize how and where UAVs can make a difference when it comes to making a given task faster, cheaper or safer. Predictions about the potential value of drone technology continue to rise and are in many cases driven by these differences, although a number of factors have impacted where and how drones are being utilized throughout Europe.

2019 is set to be a year when we'll see many of these factors change and evolve to more easily enable adoption of the technology. However, unlike in past years, these developments aren't going to be limited to a specific type of user that's looking to adopt the technology in a single country. Changes to regulation, advancements in the technology and a better understanding of what's possible with drones are just a few of the elements that will impact how countless users from across Europe can and will move forward with the technology in 2019. These changes will redefine the value proposition of the technology for a variety of purposes in countless industries.

While there are countless factors that will influence how the commercial drone market develops for Europe as a whole over the next few years, below are 7 critical ones to keep in mind for 2019.

1 A Path Toward One Set of Regulations Across Europe Will Finally be Established

It's impossible to overstate the degree to which regulation has impacted how organizations across Europe approach the adoption of drone technology. It's an issue that operators across the world talk about as their top concern. These concerns have influenced the ongoing debates about whether restrictions that vary from region to region and country to country related to drone use are too strict or lax, all of which have created a situation that some have referred to as a "patchwork quilt" of drone regulations across Europe.

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After many years of debate, a path forward with regulation is set to finally take shape in 2019 with the release of the first package of drone regulation from EASA. This development will be the first part of a series of developments from the European Aviation Safety Agency (EASA) that are designed to enable global integration and harmonization by striking the right balance between something that more easily enables the adoption of the technology while also respecting the differences that exist between different nations and localities.

Commercial drone regulation across Europe will continue to take shape and evolve over the next few years, but key benchmarks associated with creating connections between the technology and a sensible legal framework will come together in a big way in 2019.

2 U-space is Set to be Switched on in 2019

U-space is Europe's vision for an unmanned aircraft systems traffic management (UTM) system that would enable drones to take to the sky in a safe and secure manner. The creation of this type of system has been a top priority for years now, and the U-space blueprint explains how and why U-Space will help unleash the potential of drones while ensuring the safe and secure integration of UAV operations in urban areas and the countryside.
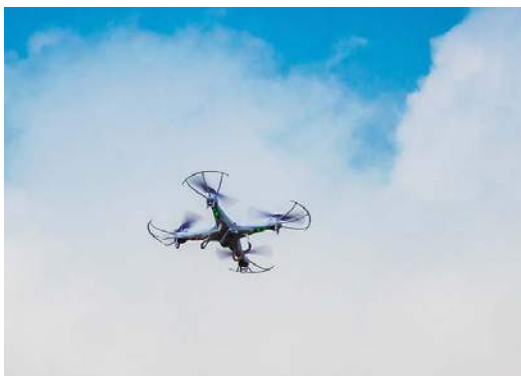
The deployment of U-space has been happening over the past few years in stages, with the first stages focused on enabling foundational services and initial services. The later stages support advanced services and full services, and those advanced services are set to take shape in 2019. Key development with these later stages have created an expectation that U-space is going to get switched on in 2019.

In developing the new generation European

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air traffic management system, a path to get U-space up and running by 2019 was laid out and has been followed. As a result of that, basic services like registration, e-identification and geo-fencing are set to come online at some point in 2019.

3 A Timetable Around Air Taxis and Services Will Take Shape in 2019

While the idea of a "flying car" has been around for decades, the technology and infrastructure to support such a vision never truly materialized. However, thanks to innovations in the drone space, urban air mobility concepts related to that vision have begun to change expectations around mobility in cities across Europe. Doing so has already begun to impact the expectations people have around where they live, where they can go, and how they can get there.

Concepts like MaaS (Mobility as a Service) have emerged as key concepts for this new interconnected urban environment since it is designed to bring together all current and future means of travel. Innovations like Pop.Up Next, which combines the flexibility of a small two-seater ground vehicle with the freedom and speed of a vertical take-off and landing (VTOL) air vehicle, are more fact than fiction, while Uber Elevate is looking to create what are essentially drone taxi hubs to enable aerial ridesharing at scale.

Uber has announced partnerships with cities in America to offer Uber Air flights with the goal of beginning demonstrator flights in 2020 and commercial operations in 2023. Look for announcements around partnerships for cities in Europe in 2019 that will create a similar path toward shared, multimodal air transportation between suburbs, cities, and ultimately within cities.

4 A Model Around Drone Delivery Will Become a Reality

While many have questions about when exactly we'll see products and goods delivered via drone, it's already happened in Europe. In Iceland's capital city of Reykjavik, residents can receive anything from hot food to groceries to electronics via drone thanks to the service provided by a company called Aha. Their service runs until 7 p.m. in Reykjavik on days that are not too windy, too snowy, or too rainy.

These drone deliveries are the exception rather than the rule though, as the logistics associated with delivery via drone have made the deployment of this type of service at scale incredibly

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difficult. However, challenges related to regulation and cost are completely different when medical supplies or other life-saving materials are being delivered via drone, and the model these types of deliveries are creating will help make drone delivery at scale a reality.

The United Kingdom and Finland are just a couple of the countries in Europe that have already begun to explore how drone deliveries can make sense from a regulatory standpoint as well as from a logistical one. Look for these examples to define how delivery via drone can make sense from an operational perspective in 2019.

5 Public Acceptance of Drones Will Eliminate a Major Barrier to Adoption

The public's reaction to how certain people are utilizing drone technology has in some cases influenced whether or not adoption was a viable option. Police and fire officials often have difficultly addressing concerns related to privacy and safety, but they're issues that organizations in the energy and construction industries have had to sort through as well. Thankfully, a couple major developments have helped positively influence how the public understands these issues as they relate to drone operations.

EU General Data Protection Regulation (GDPR) has reshaped the way many stakeholders across the continent manage their data, and in many cases forces them to recognize that privacy and the protection of personal data are seen as fundamental rights in Europe. Thanks to GDPR, concerns about privacy violations from a drone are not as pronounced. Additionally, developments with anti-drone technology have helped assure members of the public that drones do not pose a threat to their safety. Potential threats created by a drone can be quickly identified and handled as a result of these applications.
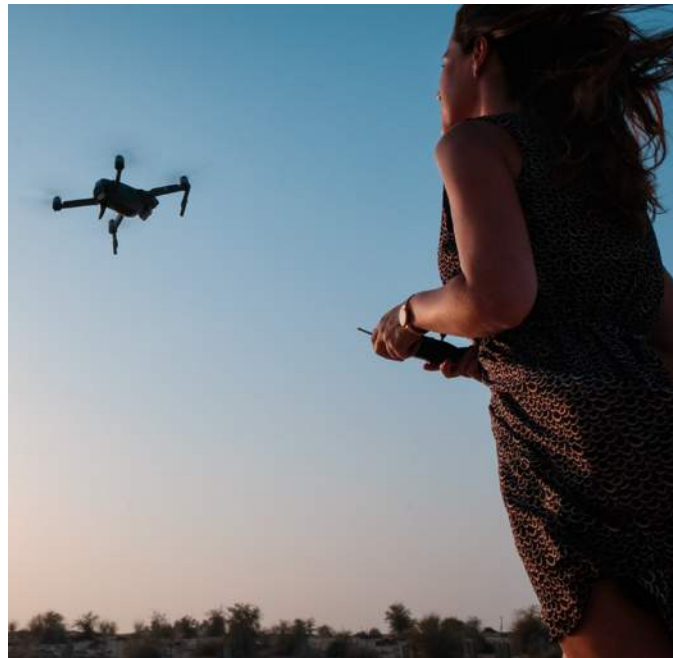
While these developments have helped change the public's perception of UAVs, there is still much work to be done. As the reliability of drones has improved, organizations in 2019 will find it to be easier to roll out drone operations in more densely populated areas since more and more people realize how certain operators are, and are not, using drones.

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6 More and More Companies Will Define What "Faster, Cheaper and Safer" Means to Them

It's easy enough to talk about how and where drones can be utilized to make a given task "faster, cheaper or safer," but what does that actually mean to the people utilizing the technology? What kind of practical difference will drones make for a given workflow? How will that impact the bottom line for an organization? Users across Europe have already begun to define these measurables, and they'll take these lessons to the next level in 2019.

Having been awarded the contract to build Northern Ireland's £130 million 14km A6 dual carriageway, Graham Construction, bought a senseFly eBee Plus UAV to help them reduce survey times, costs, and minimize risks. As another showcase of the difference drones are making in infrastructure surveying, Delair's DT18 HD UAV was used to monitor a 30 km pipeline in France to ensure there was no unauthorized construction over the pipeline that could damage the infrastructure. The project to extend Germany's A3 highway from two to three lanes is one of STRABAG's current long-term projects, and the company is currently using drones to address the rising need of high-accuracy mapping in construction sites. Initiated in 2014 and expected to be complete in 2021, STRABAG is currently using one of DJI's newest drone, the Phantom 4 RTK, for mapping & surveying purposes on this project.

These are just a few of the ways companies have defined what it means for drones to make countless tasks "faster, cheaper or safer," all of which will be expanded on and used as models to create similar efficiencies elsewhere in 2019.

7 We'll See an Explosion in the Innovative Ways Drones Can be Utilized

Advocates of drone technology often need to focus on a specific application or benefit of drones to enable adoption, and while the expected efficiencies of the technology are considerable, the unexpected opportunities it opens up could be even more extensive. That's already been proven to be the case for users in a variety of industries across Europe.

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Henry Webber, a Ph.D. candidate at the University of Bristol's Department of Archaeology and Anthropology in the United Kingdom, uses a drone carrying a MicaSense RedEdge multispectral sensor to find and map archaeological features. In an urban forest located in the South of Finland, a team successfully used UAV-based photogrammetry and hyperspectral imaging for mapping bark beetle damage at tree level. In central Scotland, another team used a UAV thermal system to monitor disease-induced canopy temperature increases in 200 trees of five research plots of Scots pines and Lodgepole pines. Elsewhere in Europe, a research project conducted at the Czech University of Life Sciences Prague has used unmanned aerial vehicles for wildlife monitoring and censusing.

Time and time again, drones have been used in ways and for purposes that go far beyond the original scope of their use. As more people adopt and become comfortable with the technology in 2019, more will begin to experiment with and explore how UAVs can be used in ways even the drone manufacturers hadn't envisioned. ■

**Jeremiah Karpowicz,
Executive Editor**

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