



eBook

# QUICK GUIDE TO INDUSTRIAL DRONE APPLICATIONS



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 Velos IoT

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# THE DRONES OF TODAY

Unmanned aerial vehicles (UAV), most commonly known as drones, are becoming more popular. However, with the fast development of the Industrial Internet of Things (IIoT), we can now talk about using drones in a wider variety of industrial and business cases.

Industrial and professional drones find application in various fields and industries - from safety inspections to military operations. Drones are most notably used for accessing dangerous and remote location, from where they can send real-time data instead of risking human lives.

Unlike hobby drones, industrial models have a wide range of capabilities and sizes for performing tasks such as surveying environmental conditions, locating objects (and people) or delivering items. Drones of such calibre are often mounted with a wide variety of sensors - video, audio, light, humidity, temperature, depth, air pressure, LiDAR, GPS/GNSS, IMUs and more. An industrial drone can even be mounted with solar panels for longer battery life, additional propellers for stabilisation, lights for working during the night and larger models can carry cargo.

The drone and all on-board sensors need to establish an uninterrupted connection with the ground team to perform their mission-critical task. Depending on the case, the drone may need to send and receive a large amount of data in real-time or perform in terrible conditions at a considerable distance from the ground team. In such instances, making sure the drone doesn't lose connection is paramount.



# THINGS TO CONSIDER WHEN CHOOSING IOT CONNECTIVITY FOR DRONES



## SCALABILITY

How many drones will you be deploying today and how many are expected to be in service in the future? For ultimate ease and flexibility, the IoT connectivity provider needs to be able to grow alongside the drone network, whether it's nationally or on a global scale.

Without scale, you may be forced to switch providers later on, which can be difficult depending on the provider involved. The best solution is to find a connectivity partner with a resilient global network that allows you to start small and scale as you need.



## POWER CONSUMPTION

What is the consumption of a single drone? What about the whole fleet? Will a unit require a significant amount of electricity to keep its system connected; raising costs and decreasing the lifespan of the battery. Fortunately, advancements in NB-IoT or Narrowband connectivity are reducing the amount of energy consumed by networking.



## SECURITY

Drone and IoT security are paramount for the development of Industry 4.0. Expert connectivity providers will be aware of this and will, therefore, have trustworthy security solutions in place, to keep client and customer data safe.





## DATA NEEDS

The more data transmitted from the drone sensors, the more power the whole system will consume, resulting in costly connectivity. Depending on the use case drones can be required to send high volumes of data, transmit real-life footage or monitor conditions by sending regular smaller data packages for a more cost-efficient solution.



## COVERAGE

Where are the drones going to be deployed? Drones deployed at remote locations need reliable connectivity with broad coverage and mobile network options. For mission-critical tasks in the field it is paramount for the drone to have access to fall-back networks in case the primary one fails.



## COSTS OF IMPLEMENTING CONNECTIVITY

Lastly, businesses will need to consider the cost of adding connectivity to their devices. This involves purchasing and installing SIM cards, replacing them to change networks (unless using eSIMs), and installing the software onto the drone and the sensors for managing connectivity.

Of course, the cost of Wi-Fi is lower than cellular connectivity, but this throws up even more disruptive connectivity and management challenges. Many of these problems can be overcome by utilising eSIMs with the ability to remotely switch networks, on demand, when you need.



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# CONNECTIVITY SOLUTIONS FOR INDUSTRIAL DRONE APPLICATIONS

Velos IoT is creating innovative solutions tailored to the needs of Industrial IoT. We offer IIoT connectivity and solutions that drone projects can benefit from.

With more than 600 roaming partners across the globe, we offer non-steered open roaming connectivity, so your drones will always be able to connect to the strongest network available, anywhere in the world.

Velos IoT is also working on advanced security solutions to address the rise of digital threat. This will enable you to provide your end-users with a secure, trustworthy service without needing to create a security solution of your own.

## VELOS IOT CONNECTIVITY

Velos IoT Connectivity is an all-in-one solution for IoT projects of all kinds and scale. The strongest network will be made available to your device — even if it is crossing the border or in rural areas.

- Support for various SIM form factors
- Freedom to choose between non-steered connectivity and network preferences
- Full suite of APIs
- Single Global APN for easy connectivity across different operators



[VIEW COVERAGE](#)

## VELOS IOT CONNECTIVITY

Velos IoT Nomad is an IoT Connectivity Management Platform that allows you to control, monitor, and manage your device connectivity remotely.

One of the major breakthroughs of Velos IoT Nomad is its ability to provide rich analytics. This includes data like KPI, device-level reporting, SIM management and connectivity monitoring. Your drone project can use this data to further optimise its performance, creating the most efficient drone platform possible.

The Velos IoT Nomad CMP unifies all of your IIoT connectivity invoicing as well. You'll only have one easy-to-read bill for all of your devices, significantly simplifying the billing process.

[Read more on Nomad IoT Platform](#)



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