

SOFTWARE SOLUTION FOR **ON-DEMAND-DRONE** **SERVICES**



Drone-on-demand refers to a service that provides a drone solution for a specified time or perpetually to accomplish certain business objectives. Such services exist because we have reached a point where there is reliable, off-the-shelf hardware and software available to create enterprise-grade drone solutions.

Enterprises who avail such services see business value in the easy availability of aerial data at a reasonable price, which was not possible a few years ago. Apart from aerial intelligence, drone-based delivery is another segment that has seen a jump in demand in recent times.

Companies that operate drones have to abide by regulatory requirements, which include airspace norms that ensure security, safety, and privacy. While there remain challenges around technology (e.g. battery life, fail-safes), this commercial drone segment is quite lucrative; according to the market research firm, Markets-and-Markets, the drone services market is estimated to reach 63.6 billion dollars by 2025 at a CAGR of 55.9% from 2019 to 2020.

Use Cases for a Drone-on-Demand Service Provider

While these services are relatively new, and people are still discovering new ways to use them, there are immediate use cases where such services are yielding tremendous commercial benefits. Some of them are listed below.

Roof Inspection of private and commercial estates: Roof inspection is a popular application of drones because aerial inspections can do the job quickly, versus manual ones, at a lower cost. Drones also bring in a level of data sophistication in the entire inspection process. With technologies like thermal and 3D imaging, a drone combined with intelligent software can automatically detect things like water damage, insulation issues, structural damages, etc.

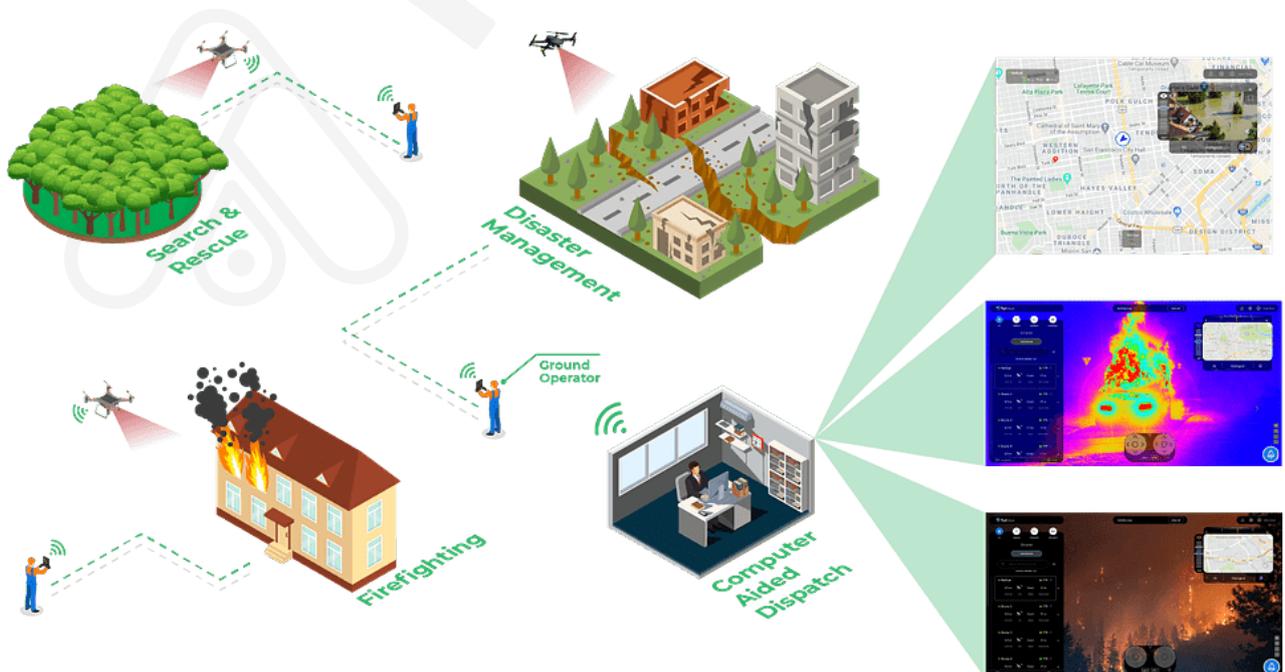
While a property owner/caretaker may not wish to own drones and find skilled pilots to operate them, services provided by drone-on-demand companies can be a practical and economical solution.

Aerial inspection of construction sites: Inspections are common at a construction site. But with a drone, a pilot can inspect the outer facades of such structures without the need of manpower and heavy equipment. Since operations like this require skilled pilots, specialized drones, and sophisticated software, a drone-on-demand service, customized for construction applications, can make a lot of business sense.



Emergency Response: There are several drone solution providers that are specialized in emergency response projects. For example, a US-based company called Phirst Technologies, LLC has developed a drone-based first responder system called First iZ, using FlytBase’s technology, that integrates with the CAD (computer-aided dispatch) system which powers the 911 emergency services in Tyler, Texas, USA. This system allows emergency operators to dispatch drones from a unified dashboard to gather information on an emergency situation and pass on the information to human responders who can arrive later, better informed, and prepared.

Public Safety: Drones are extensively used in operations like search and rescue, crowd control, disaster assessment, etc. In an event, Airworks 2019, DJI had announced that drones saved the lives of 279 people. There are service providers who specialize in public safety operations.



Industrial inspection: Drones are an important tool in the energy and utility sectors. Drones are used for inspecting refineries and gas pipelines to detect damages such as corrosion and cracks. They are also flown over wind turbines to inspect the blades. Such activities require a fair amount of specialization in aerial navigation, which is why there are sector-focused service providers for such drone applications.

Security and surveillance: There are numerous companies that provide turnkey, drone-based security solutions for some of the following use-cases:

- Event surveillance
- Crown monitoring
- Intrusion detection
- Border security



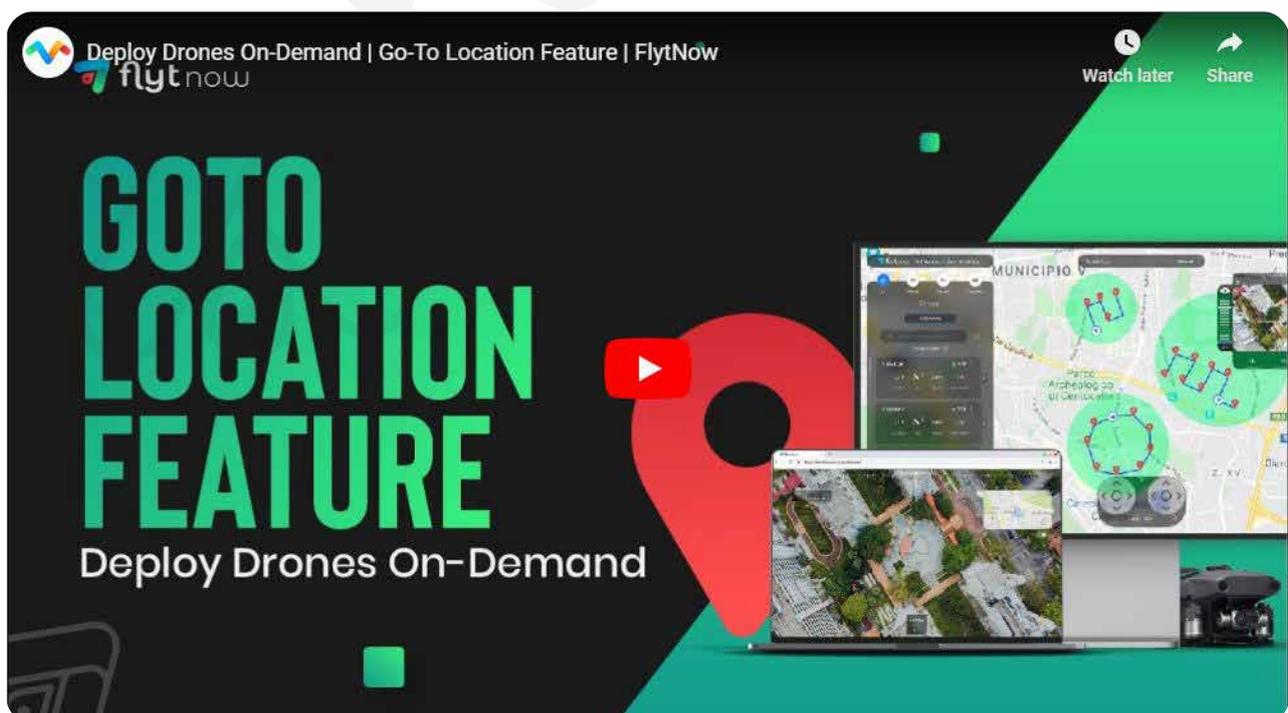
Drone delivery: The concept of using drones for last-mile delivery has been around for almost a decade. Since the technology involved is challenging, service providers in this space are highly specialized and tend to focus on a specific kind of package deliveries. For example, Zipline is a company that provides an autonomous drone solution for medical deliveries.



Note: Download our comprehensive guide on how to set up a drone delivery operation using FlytNow.

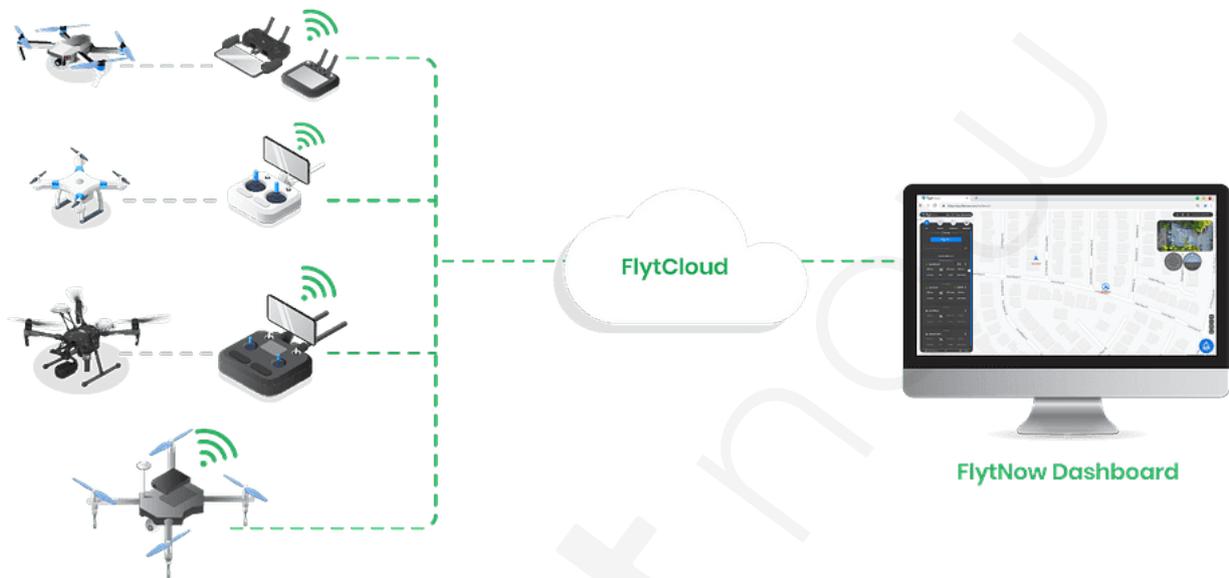
How FlytNow Business/Enterprise Enables a Drone-on-Demand Service

A drone-on-demand service provider brings the hardware and software together to deliver a turnkey solution for a particular use case. FlyBase, an enterprise drone automation software company, offers FlytNow to such companies. FlytNow is a cloud-based video-streaming and fleet management solution that also provides edge-level intelligence to conduct a variety of drone operations.



How FlytNow works?

FlytNow is a cloud-based application that has a dashboard, which can be accessed from a web browser. A user can connect a drone with FlytNow either using our FlytOS mobile app or the SBC cloud connect software kit. Below is an illustration that explains the setup.



Note: we have the enterprise version that supports the integration of ground-based hardware as well.

There are two versions of FlytNow that are suitable for drone solution providers: Business and Enterprise.

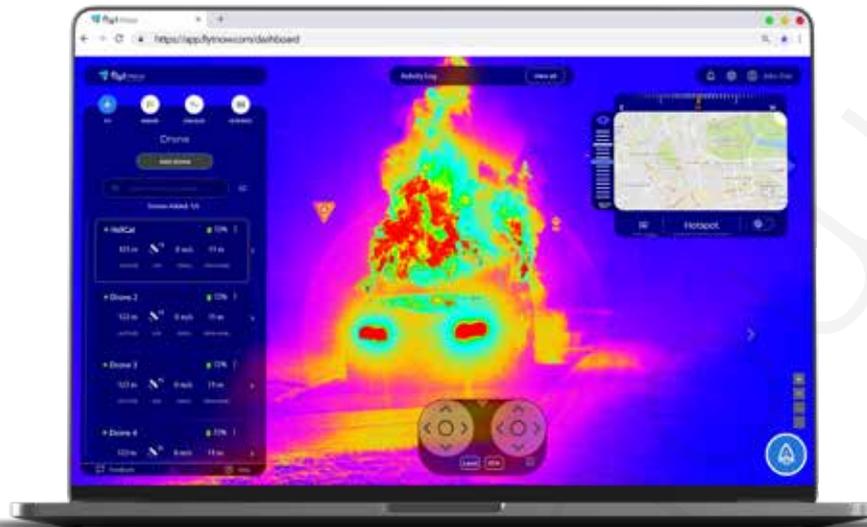
FlytNow Business

The Business version is an out-of-the-box solution, with the following features:

Live video streaming from the drone to the FlytNow dashboard: Video can be streamed from multiple drones on a single screen with the ability to share them with anyone via an email. This feature is useful for commercial providers who offer services related to:

- Remote roof inspection.
- Construction site inspection (read our case study).
- Surveillance.
- Delivery.
- Emergency and public safety.
- Industrial inspections.

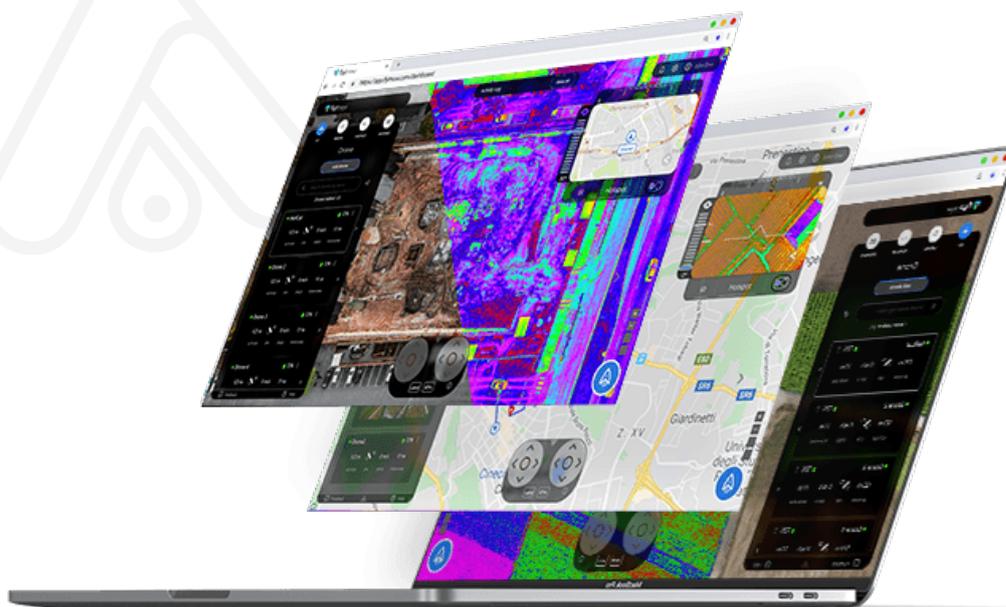
With FlytNow, a drone operator can fly a drone over a roof/construction site/inspection site and live-stream the video to stakeholders sitting hundreds of miles away. Similarly, during an emergency response or a delivery operation, live streaming can be used to gather situational information.



Video archiving: FlytNow supports the integration with an Amazon S3 instance, which is used to store incoming video feeds. The videos are automatically stored, and the feature is useful in:

- Surveillance.
- All forms of inspection.
- Emergency and public safety.

All archived videos can be accessed from the FlytNow dashboard with time and date stamps.



Thermal Camera Support: FlytNow supports streaming from a thermal camera. The feature is useful in:

- Detecting water damage during a roof inspection.
- Spotting structural damages during a construction site inspection.
- Spotting leakages during refinery or pipeline inspections.
- Intruder detection during night time.
- Identify trapped/lost victims during search and rescue operations.

Learn how FlytNow can enhance night time surveillance.



Map annotation: FlytNow dashboard has a built-in map that shows the real-time location of drones that are online. The map also supports adding a description in way-points. The feature can be used to record information during.

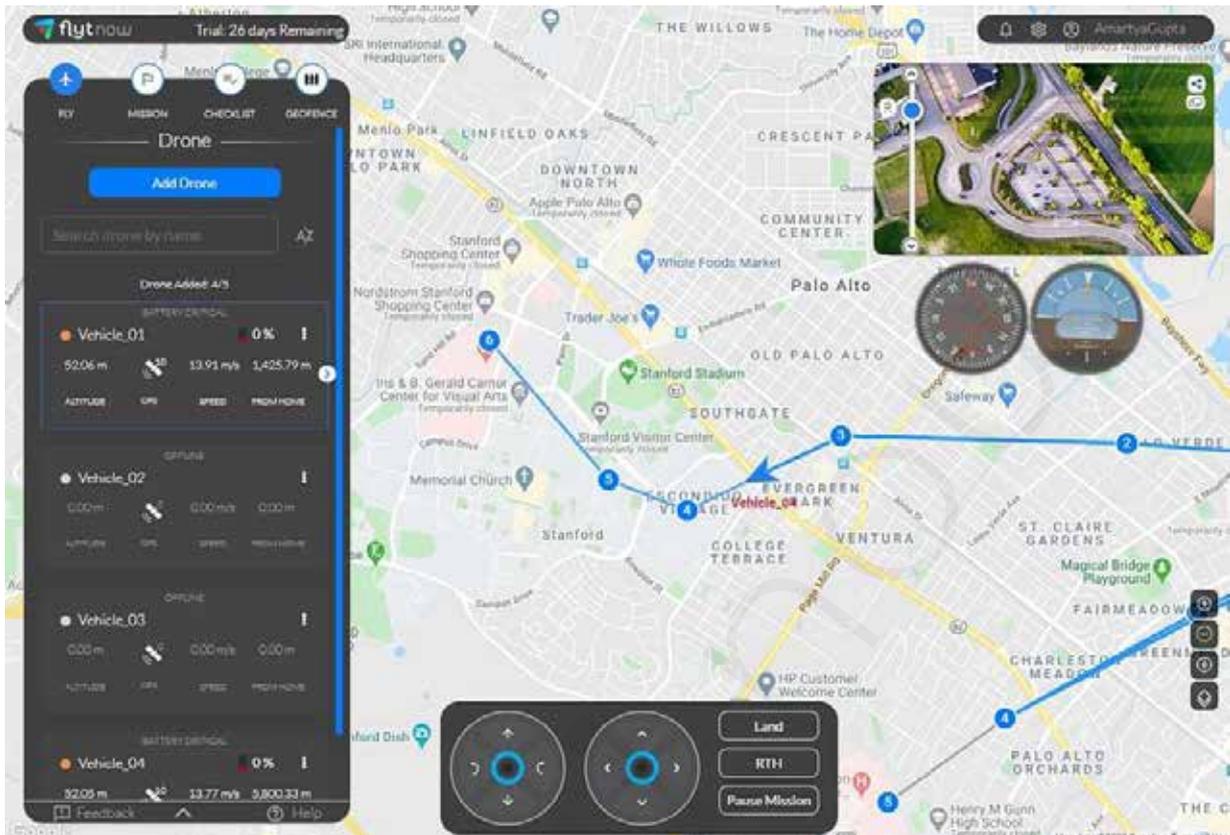
- An inspection of a roof/building.
- Pipeline/refinery/wind-turbine inspections, to record useful findings.
- Surveillance.
- Record situational information during an emergency mission.

Mission Planner: It is an advanced feature that allows an operator to define a route from point A to point B with waypoints for a drone to follow. This feature can be useful in:

- Surveillance operations, where a drone can be made to go on a patrol on a predefined path.
- Public safety and emergency operations, where a drone can be programmed to go to a location and monitor the situation.
- Industrial inspections, where a drone can complete a pipeline inspection

autonomously over a predefined path.

- Defining a delivery route for drone delivery.



Support for custom drones: FlytNow supports enterprise DJI drones and custom drones based on PX4 and Ardupilot. Custom drones are required for specific tasks like delivery which requires long-range and heavy payload carrying capabilities. This means a service provider using FlytNow is not restricted to a particular drone hardware platform.

FlytNow Enterprise

The Enterprise version covers everything that the Business version has to offer, plus customized modules for large scale deployment of drones with extensive flight automation. These include:

AI-based features: FlytBase provides an operating system (FlytOS) that is installed in a single-board computer, which is fitted on a drone. This makes the drone capable of performing the following things under the Enterprise plan:



FlytCAS
(Collision Avoidance System)



FlytDock
(Autonomous Precision Landing)

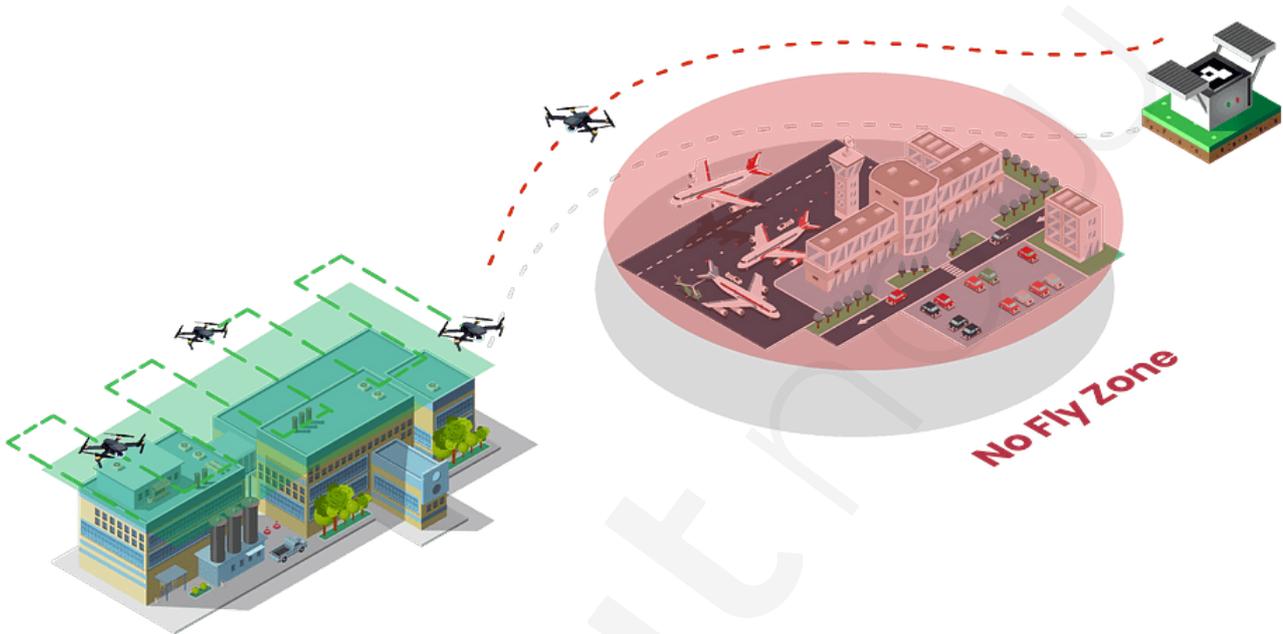
- **Precision landing:** Allows the drone to land on a machine-generated tag.
- **Object detection:** Allows the drone to classify ground objects using the on-board camera.
- **Obstacle avoidance:** Allows the drone to navigate around obstacles automatically.
- **Custom payload integration:** Allows remote operation of custom made payloads as well as payloads from DJI for Mavic 2 Enterprise.

Integration with ground-based hardware: The enterprise version comes with the option to integrate with various ground-based hardware like:



- **Charging pad:** A platform that charges a drone when it lands on it. The Enterprise version can be easily integrated with charging pads from Skysense.
- **Drone-in-a-box hardware:** A docking station that completely houses a drone and keeps it fully charged.

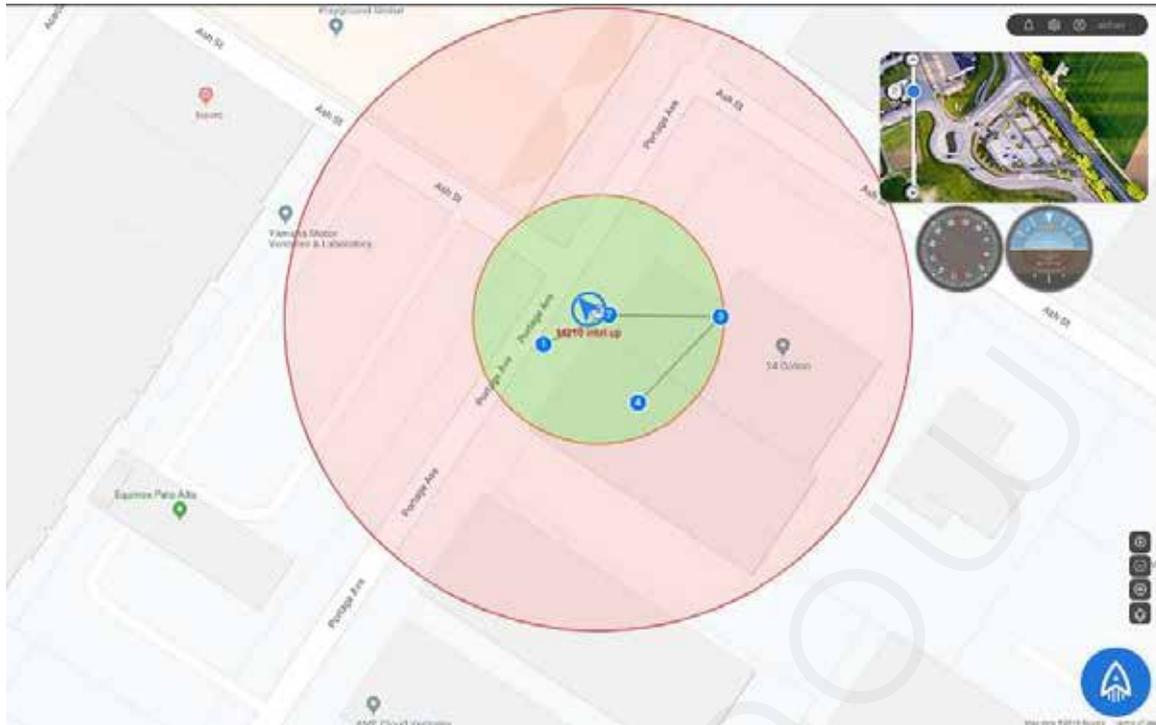
Integration with third-party software: The Enterprise version also supports integration with third-party applications for the following:



- **UTM Intelligence:** It is required to acquire airspace information so the drone does not interfere with manned aircraft and complies with legal norms. FlytNow Enterprise has native support for Airmap.
- **Logging applications:** Such applications capture the flight data for a drone. FlytNow Enterprise has native support for Dronelogbook.

Advanced flight planning: FlytNow Enterprise has features to precisely control drone flights and ensure the safety of drones around human populations. Some of those features are:

- **Advanced geofencing:** Precisely defines the area of operation of a drone with the help of polygons.
- **Custom NFZ integration:** It is the ability to define No-Fly-Zones for drones.
- **Advanced failsafes:** It refers to the ELP (Emergency Landing Point) feature that allows a drone operator to define emergency landing points alongside a predefined route. ELPs come in handy when a drone in a BVLOS (Beyond Visual Line of Sight) mission has to do an emergency landing.



The Enterprise version is ideal for service providers who are into making systems where drones can takeoff autonomously after receiving a command, automatically go to a location and perform their mission and come back safely after complete the mission. In a nutshell, it provides customization, automation, and scalability.

Summary

In this blog, we learned about drone-on-demand services and the use-cases they are relevant. We also learned about FlytNow Business and Enterprise editions, what each has to offer, and how each can enable drone service providers.

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