

CASE STUDY

UNIVERSITY OF KENTUCKY AND DRONE DETECTION



A SAFER CAMPUS USING DRONE DETECTION

During the 2017 opening season football game, a drone interrupted the Golden Knights Parachute Team while attempting to make a landing in the stadium. The parachuters had to make emergency maneuvers to avoid the drone and land safely. The parachuter's quick and necessary action averted a disaster.

Unauthorized drones can be very dangerous to college campuses, especially in an urban- campus setting like Lexington, Kentucky. The University Of Kentucky is home to UK Chandler Hospital, a Level 1 trauma center, with multiple helicopter flights happening daily.

Chief Monroe shared one disturbing incident because a student flew a drone at an altitude of 900 ft and was in the trauma center's flight path. The unnamed student was attempting to get images of the college stadium on a non-game day. This student was reprimanded for his actions according to the university's drone policies for misconduct. While innocuous, incidents such as this one have the potential to cause dangerous situations if a quick medevac was taking place.

As a college at the forefront of campus safety, the University of Kentucky Police Chief Joe Monroe shared the same sentiment about drones. He had already begun evaluating drone detection technology when the drone flew into the stands in 2017. Chief Monroe wanted to find a cost-effective and legal solution to identify a drone flying inbound. As well as detect and locate the drone pilot's location.

MAIN OBJECTIVES

Main reasons for the University of Kentucky to install drone detection:

- ▶ **Campus safety**
- ▶ **Airspace safety due to the Level 1 trauma center**
- ▶ **Stadium and sporting event safety**

Main priorities for selecting a drone detection system at the University of Kentucky:

- ▶ **Legal solution**
- ▶ **Identify an inbound drone**
- ▶ **Detect and locate the pilot's position**

AirSight's Drone Detection Platform is the "most cost-effective and best solution on the market right now."

– Chief Joe Monroe

A SAFER CAMPUS USING DRONE DETECTION

After the pilot trial of testing different systems, Chief Monroe concluded that AirSight's Drone Detection Platform outperformed the others and was the "most cost-effective and best solution on the market right now."

AirSight's platform "AirGuard" met its main priorities most consistently, even in the urban campus environment. Some challenges to drone detection are interference, especially in dense urban settings like Lexington, Kentucky, and the UK campus.

While evaluating the AirSight solution, Chief Monroe and his team were amazed at the actual number of UAS flights occurring on their campus. During the pilot program, they were seeing around 60 drones a month. Fast forward today, they are counting roughly 1,000 drone flights each month. Chief Monroe told us he has a sharp increase in drone activity in the last six months.

While the initial number of UAS did seem shocking during the trial phase, today, they expect more drone activity as drones have become more commonplace around campus as different campus departments continue to adopt the technology.

Students and faculty wanting to use drones must submit an application for approval and receive a sign-off to conduct authorized UAS flights.

Currently, 1000s of requests are made on a daily basis.

60

number of drones detected
each month during trial

1K

number of drones detected
each month in 2020

BENEFITS OF DRONE DETECTION BEYOND SAFETY: ENFORCE UAS POLICIES ON CAMPUS

Apart from added airspace security and campus safety, which is of utmost importance, the UK campus uses the airspace management side to its full potential. The campus has expansive drone research programs and many authorized flights occurring regularly. The drone detection system helps the campus enforce its drone policies and ensure safety.

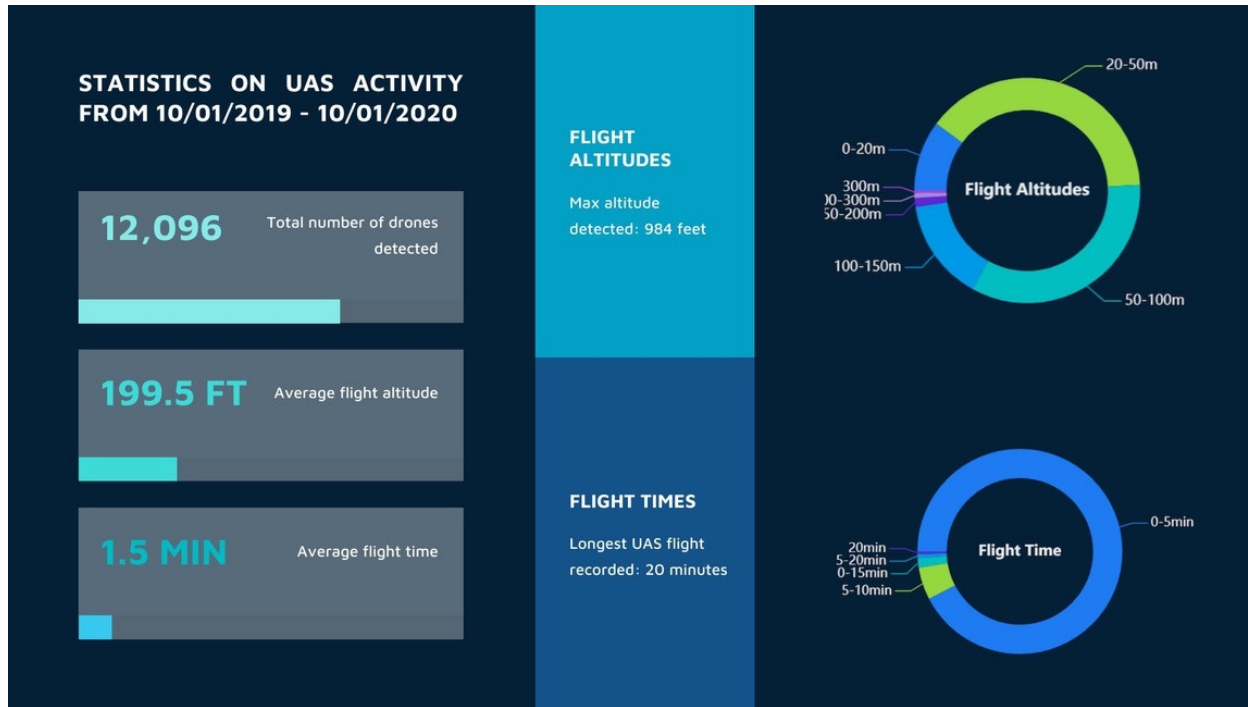
Each morning, the team generates a report of the day's authorized drone flights. They use these reports to approve flights in AirSight's drone detection platform. The system will only go off when an unauthorized drone breaches the geo-fenced perimeter. The system generates automated texts and emails to the officers when an unauthorized drone is detected.

When they do receive an alert, a dispatch officer is sent to the pilot's location to investigate the situation and decide a course of action. The 911 Security drone detection system allows the university to have documented incidents that can be reported to the conduct office if needed.

"We get 1000s of drone applications submitted for approval on a daily basis"

- Chief Joe Monroe

DEEPER LOOK INTO DRONE STATS AT THE UK CAMPUS



DRONE STATS

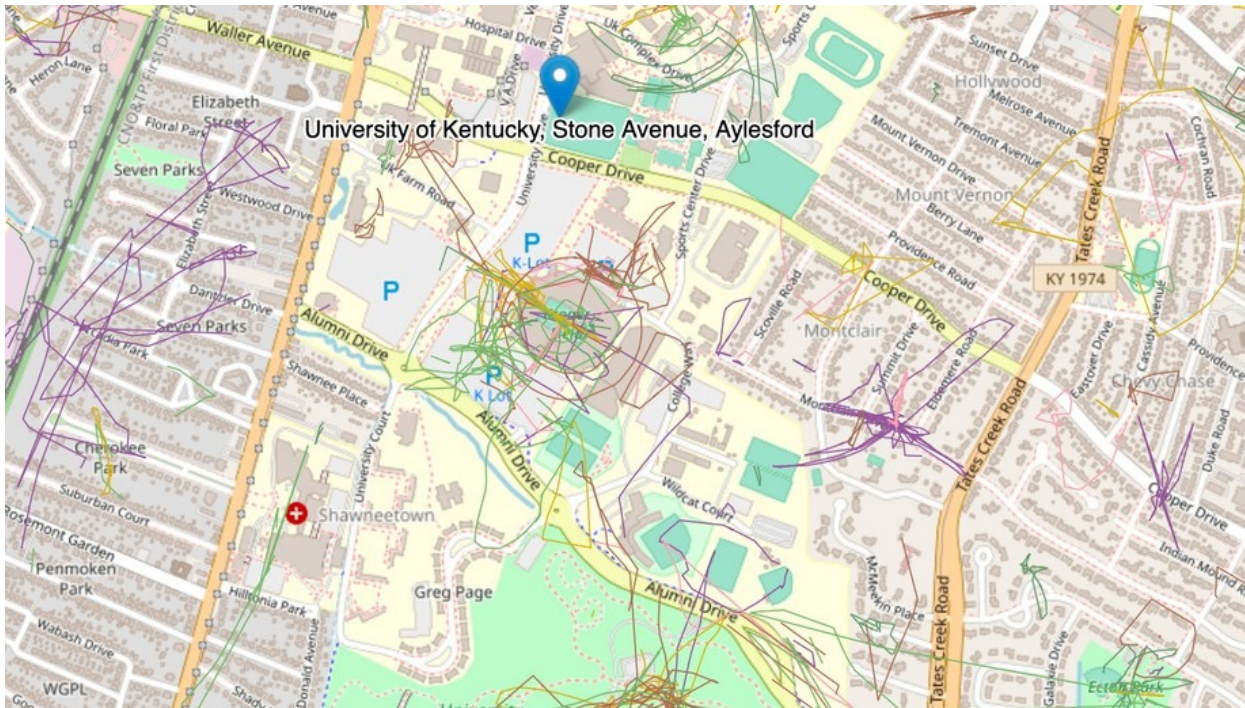
12,096 drones detected in one year
Average of **1,008 drones detected each month**

For 2020, the number of drones detected has **increased over the last six months**

In August 2020 - **1,765 drones were detected**
Average flight altitude: **199.5 feet**
Highest altitude detected: **984 feet**
Average flight time: **1.5 minutes**
Longest flight time: **20 minutes**
Average max detection distance: **21,202 feet**
Farthest max detection distance: **65,617 feet**

UK Campus Drone Dashboard: October 01, 2019 - October 01, 2020

DEEPER LOOK INTO DRONE STATS AT THE UK CAMPUS



UK Campus Drone Activity: October 01, 2019 – October 01, 2020

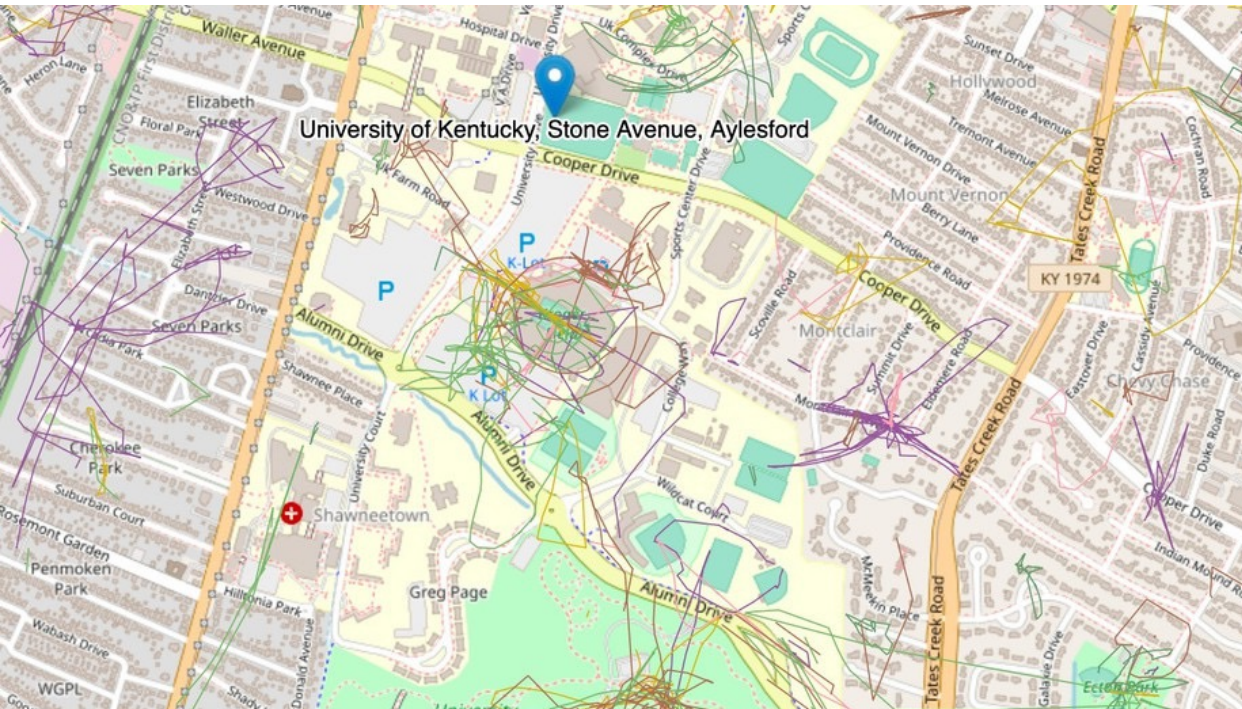
WHERE ARE PEOPLE FLYING DRONES ON CAMPUS

Parking lots and structures – People will drive to the top of the parking decks to launch drones and get a better vantage point.

Public Relations Department – These are authorized drones flying for academic and research purposes.

Marketing & Sports Departments – Authorized drones for for media, photography, and practice

DEEPER LOOK INTO DRONE STATS AT THE UK CAMPUS



WHERE ARE PEOPLE FLYING DRONES ON CAMPUS

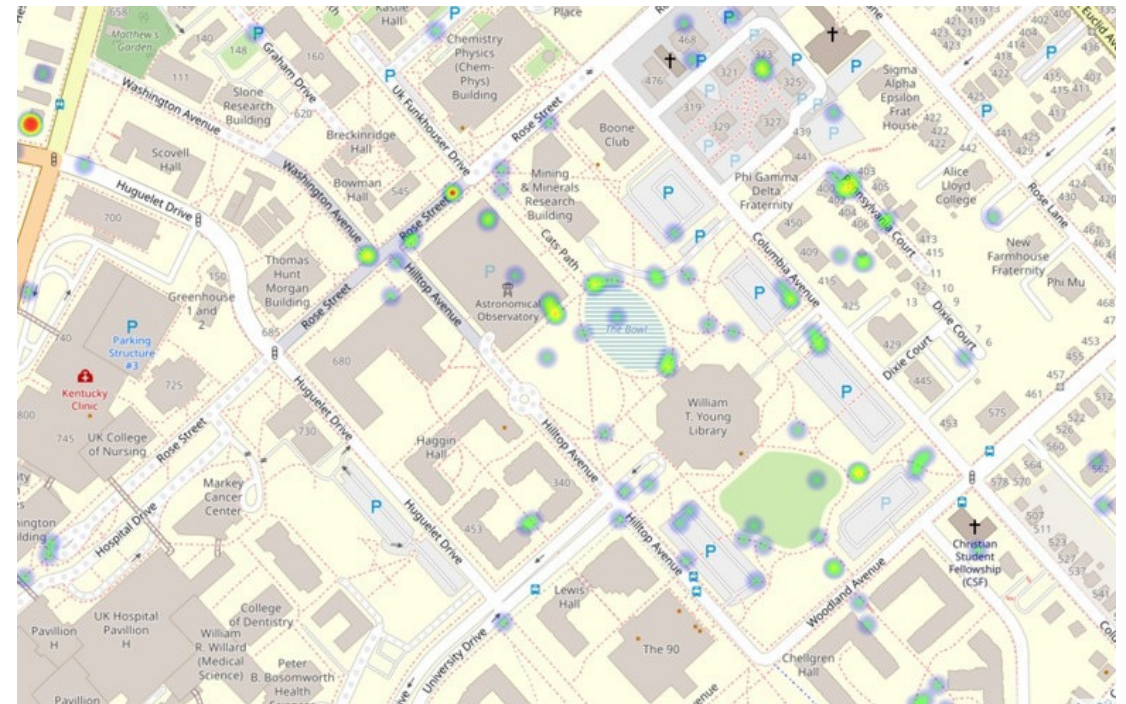
Drone activity can be mapped, giving you a total view of what's happening in your airspace. From the GIS map, heat maps, and drone dashboard, the University of Kentucky can see where and when all flights are occurring on campus.

UK Campus Drone Activity: October 01, 2019 – October 01, 2020

DEEPER LOOK INTO DRONE STATS AT THE UK CAMPUS



UK Campus Drone Heatmap: October 01, 2019 – October 01, 2020



UK Campus Drone Heatmap: October 01, 2019 – October 01, 2020

In 2020, the University of Kentucky is experiencing the most drone activity on record.