

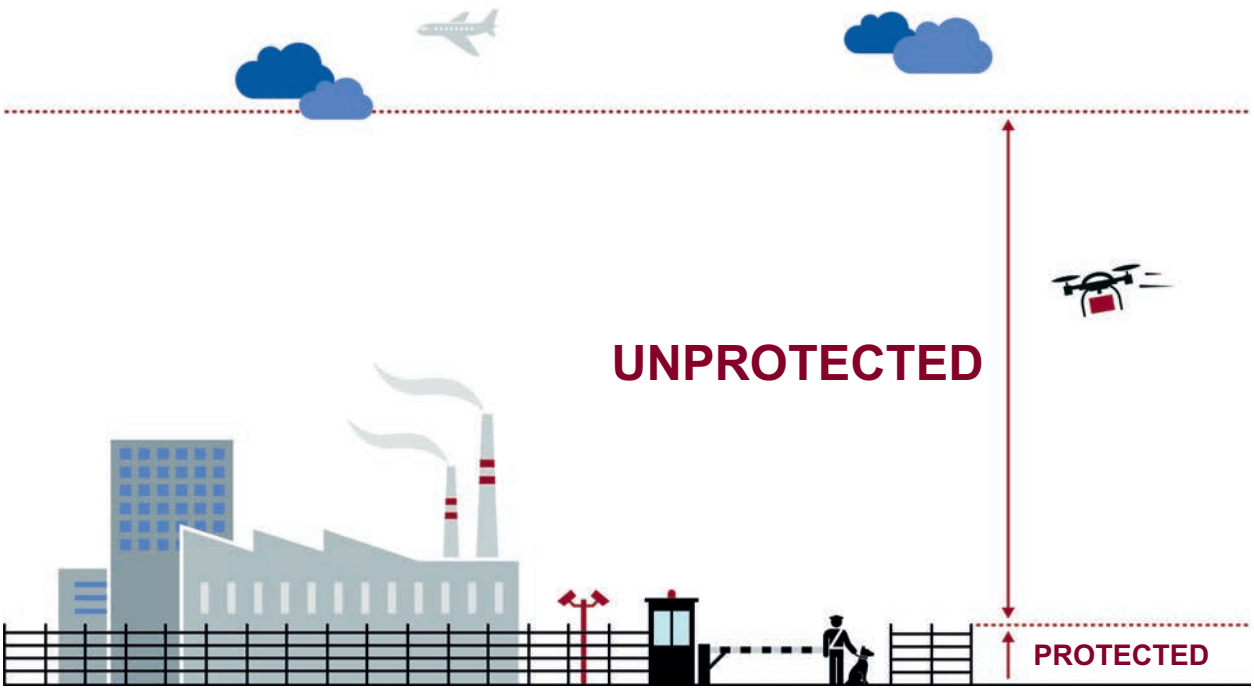
DroneTracker

PIEPER

More and more dangerous drones

> ***"Drones can also be used for terrorist and criminal purposes. The drones are increasingly worrying the security forces. Meanwhile, the pilots can hardly be determined."***
>
> ***Die Welt, July 14, 2016***

No other technology is currently developing as fast as the drone technology. The growing performance of unmanned aerial vehicles offers, in addition to all advantages, the possibility of abusing them for criminal purposes. If your airspace is unsecured, fences, video cameras and security forces are no longer sufficient to protect sensitive buildings or people.



The DroneTracker platform manages your complete airspace monitoring in an interface. The software allows the configuration of relevant sensors, active and passive defenses and alarms. Via integrated interfaces (API) for external sensor and flight data, the platform is permanently and in real time supplied with information from the airspace.

Through analysis and intelligent pattern recognition using DroneDNA, drones are automatically recognized and classified. Defenses against enemy drones are automatically activated and security services are notified.

Secure your airspace now

Real threat from the airspace

More and more people own freely marketed, unmanned aerial vehicles. These remote controlled drones are simultaneously more powerful and less expensive. They are no longer just used as a toy for technology enthusiasts: criminals are also increasingly discovering drones, using them to espyage and transport drugs, weapons and even explosives.

New security requirements

The threat from the air poses completely new challenges to security officers. Until now it has largely been sufficient to protect sensitive buildings and terrain by fencing and cameras, the airspace now proves to be an acute safety gap. To close this gap, Dedrone has developed the DroneTracker, a technical solution to effectively protect the airspace against drones.

Various sensors for safe detection

The DroneTracker is characterized by the intelligent combination of different sensors. Attached to facades, windows or special brackets, the device detects approaching drones by means of various parameters such as noise, silhouette, movement patterns, as well as frequencies and triggers an alarm. The combination of several trackers can also cover large areas effectively. An integrated camera saves images and videos in HD quality, providing important information and evidence.

The application areas of DroneTracker

- Industrial facilities and buildings
- Government buildings
- Embassies
- Prisons
- Data centers
- Nuclear power plants
- Test tracks
- Private buildings
- Events such as board meetings or conferences
- Stadiums, public events
- Logistics centers

DroneTracker Multi Sensor

Audio / Ultrasonic - Acoustical sensors

Microphones have a reach of 50-80m. Civilian UAV's have typical acoustic characteristics that we use for their reliable detection.

WLAN - Wi-Fi sensor

An integrated Wi-Fi-sensor passively senses WLAN singals of drones. It also allows classification of certain drone models and even single devices.

Near Infrared - Optical sensor (night)

The DroneTracker can be equipped with an infrared camera. The data is interpreted by means of enhanced image analysis methods.

Video / 11°–85° - Optical sensor (daylight)

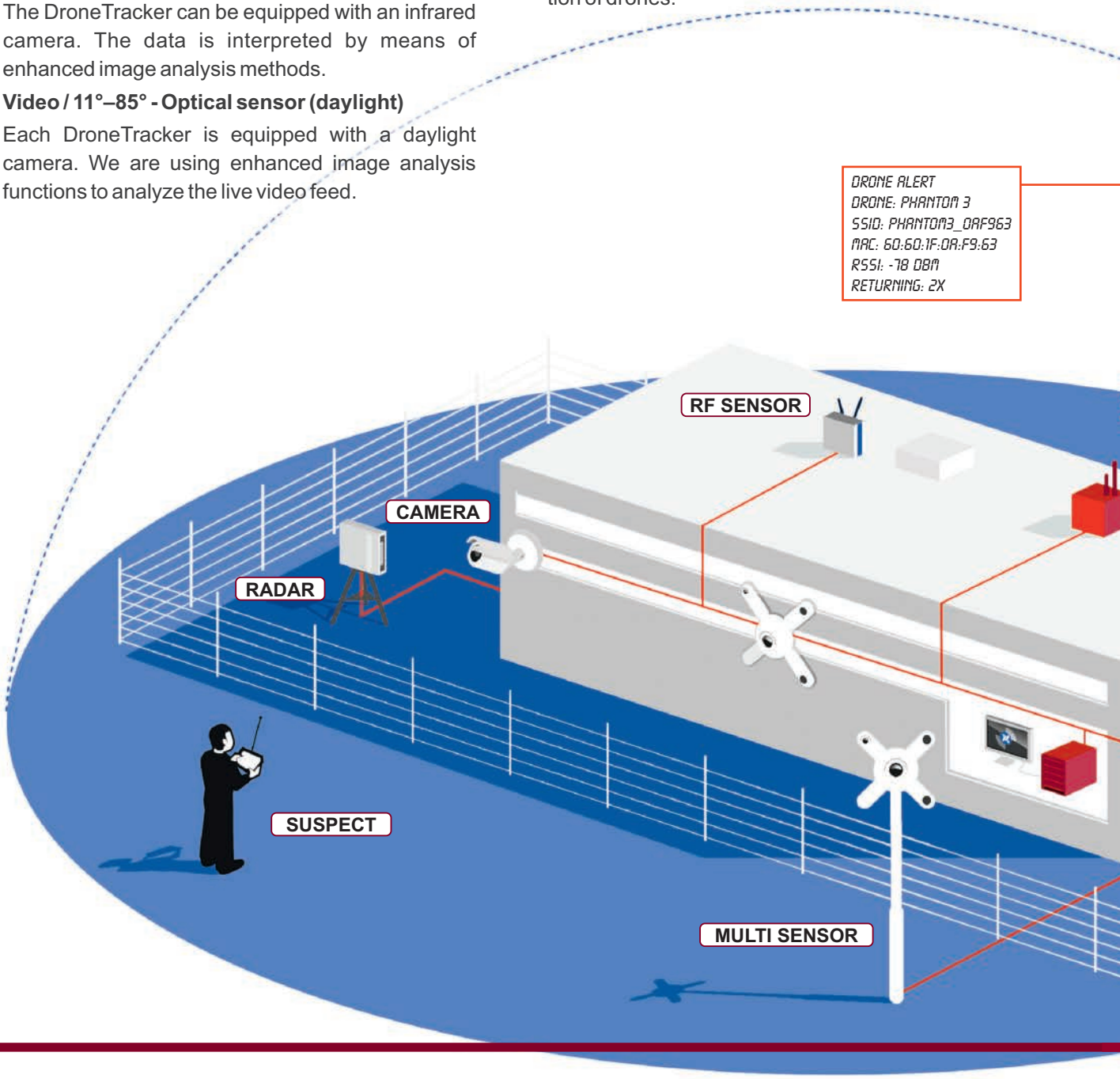
Each DroneTracker is equipped with a daylight camera. We are using enhanced image analysis functions to analyze the live video feed.

RF Sensor

Nearly all commercially-available drones use radio signals, both to receive control commands from the remote control and to transmit data such as video or telemetry.

Dedrone has significantly improved the performance of its RF sensor to detect these radio signals.

The greatest benefits for customers are an increased detection range, early alerting of switched-on remote controls and the reliable classification of drones.

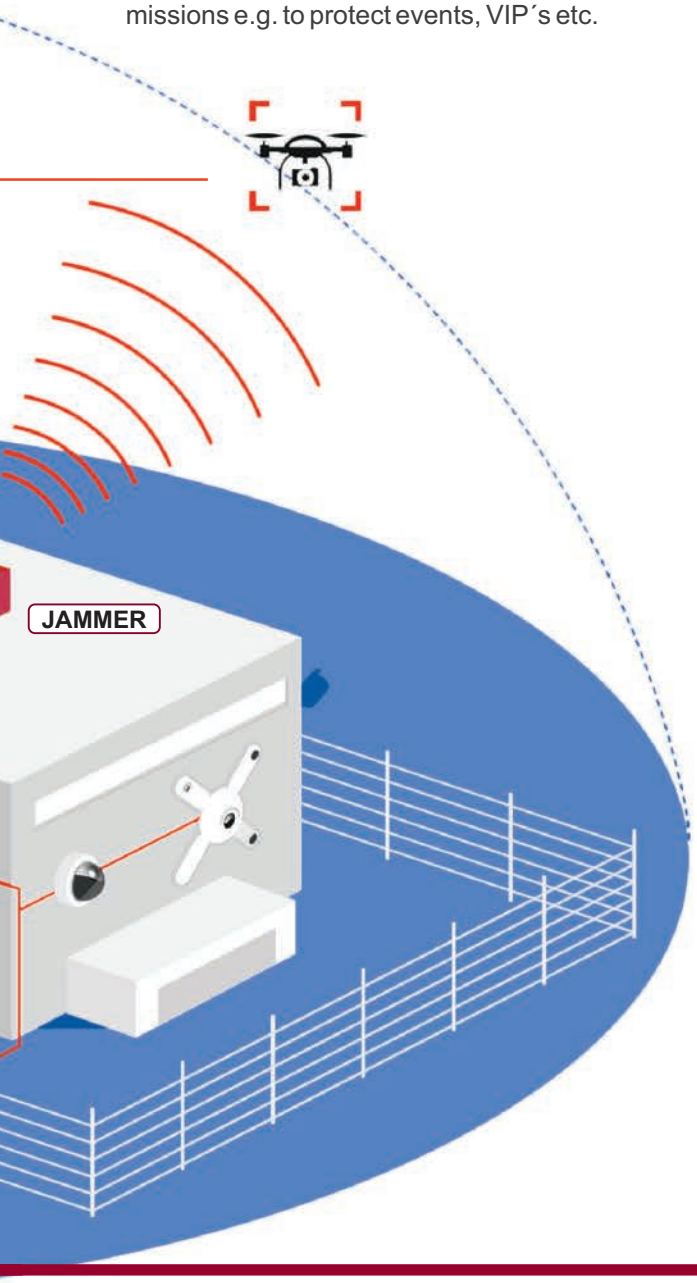


Modular UAV Jamming System

The jammer system uses H.P.'s Direct Digital Synthesis Sweep and dedicated software to maximize its effectiveness. The system enables the operator to program the system quickly using a Windows®-based notebook or USB stick in order to adapt to any given threat scenario or use the system as tactical jammer.

The jammer system will jam drones using GPS, GLONASS, Galileo, WLAN 2.4 GHz and from 5000-6000 MHz.

It is a field proven system and used in several missions e.g. to protect events, VIP´s etc.



Pan-Tilt zoom camera FK-N-SNZ-5128

With integrated white light and infrared illumination, flat glass and 129 mm lens, the camera offers impressive 1080p video quality in all lighting conditions.

The robust FK-N-SNZ-5128 series is IP68 / IK10 compliant and suitable for indoor and outdoor applications at temperatures between -40 °C and + 60 °C.

- FULL-HD, day/night operation, WDR
- H.264 with up to 25 images/s
- DNA, ONVIF ready
- Integrated IR lighting
- Integrated white light lighting
- Protection classes IK10 and IP68

Drone Detection Radar

Detection systems need to maintain their capabilities under low visibility conditions and in urban environments full of obstacles and moving objects. The Drone Detection Radar is specifically designed to meet these challenges.

The radar system covers a full 360 degrees view. It detects larger fixed wing targets at a range of nine kilometres, and smaller multi-rotor drones detected at up to three kilometres.

However, completely securing an area, requires more than just range detection. It requires flexibility, reliability and provides unlimited coverage through its ability to combine multiple radar devices into an integrated sensor network. The output from multiple sensors is incorporated into one unambiguous picture.

Range of features

Airspace Surveillance 24/7

Dedrone automatically classifies, issues alerts, and records evidence to identify and assess potential threats, and can automatically trigger offensive or defensive countermeasures if needed.

Automated Alarm & Notification

DroneTracker notifies you with an alarm as soon as it senses the approach of a drone. You decide which channels you wish to be used for notification: SMS, user interface, e-mail, network (TCP/IP), SNMP or Pushover.net.

Automated Push To 3rd Party API's

DroneTracker can be connected to your existing security system using its extended API access to communicate with existing sensors. For example, previously-installed surveillance cameras could be integrated. Additional, third-party security products such as automatic blinds, fog bombs or jammers can also be connected using the API.

Forensic Evidence

All drone flights are recorded and stored locally. The RF Sensor passively collects details about the drone and can identify repeat offenders. The next logical step is to enhance situational awareness, for which DroneTracker uses cameras. Video cameras are used to classify accurately whether detected objects are drones or not, as well as to record video evidence - including the flight path of drone.

Simple Configuration

You can configure your DroneTracker quickly and easily with the browser-based user interface. Each sensor can be set individually to achieve optimal detection results.

Future-Proofed

A software-first approach with over-the-air updates future-proofs customers by making sure their installations stay up to date automatically. We continuously collect the specific characteristics of new drones in order to generate special drone signatures - known as DroneDNA. These signatures are stored in a central, cloud database and are used for drone recognition and identification purposes.

Scalable & customizable

By combining several sensors, large spaces and sites in urban areas with complex layouts can be monitored and scaled effectively. All sensor data are combined and processed centrally.

Multi-Sensor Analysis

Our aerial intrusion detection platform provides early warning of malicious drone activities through one or more sensors. The RF Sensor is the foundation of your drone detection solution. Video sensors may be added to aid detection and to provide real-time view as well as archived evidence. More external sensors can be integrated into the platform via API.

Fast installation and integration

The centralized software achitecture allows the integration of a nearly unlimited number of sensors into one system.

- Plug and Play
- Easy installation on walls or mobile tripod mounting
- Easy to integrate in your existing IT infrastructure
- Stand-alone device or several interconnected DroneTrackers
- Power supply and connectivity via POE (Power Over Ethernet)
- Automatic updates via cloud
- Robust, weatherproof casing

Configuration With Only a Few Clicks

Use the browser-based, user-friendly software interface to configure your DroneTracker with just a few clicks via computer, tablet or smartphone. The drone detection system is regularly updated via cloud.

- DroneTracker and sensors
- Positioning and alignment of the DroneTracker via drag & drop
- Notification depending on alarm level via software, SMS, email, app, network message or Pushover.net
- Detection profiles (day / night / time-controlled)

DroneTracker Event Kit

We have developed DroneTracker Event Kit for the temporary use, for example early drone alerting at state visits, public conventions, concerts, or sporting events. The Event Kit comprises two tripods to which you can flexibly mount your DroneTracker Multi-Sensors or DT RF Sensor and set them up anywhere.

All components can be transported in one trolley, including a DroneTracker Multi-Sensor and one DT RF Sensor. Each component is protected by its own fuse.

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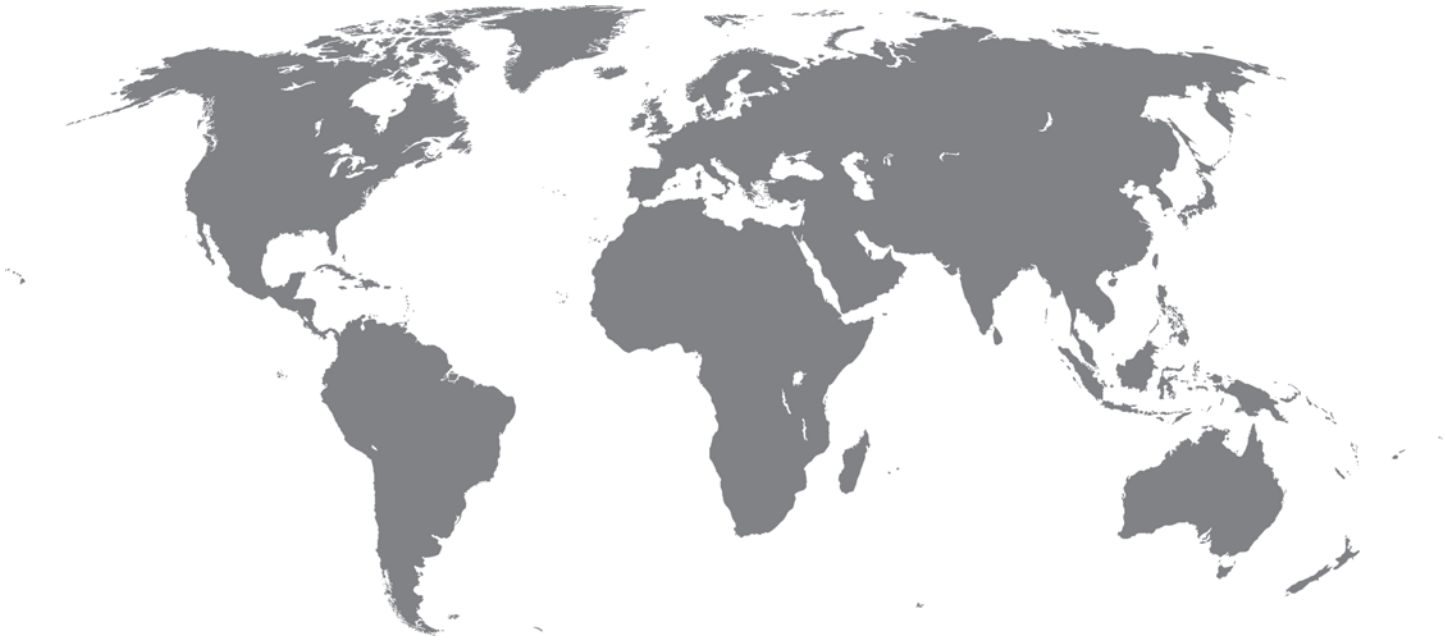

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