

SKYPATRIOT

EARLY WARNING OPTICAL DRONE DETECTION SYSTEM



Rinicom's SkyPatriot early warning optical drone detection system automatically detects, tracks, and identifies drones at a distance of up to 2km using sophisticated AI computer vision algorithms to accurately distinguish drones from birds and other moving objects.

Combined with the ability to provide photographic and video evidence and integration with other sensors and C2 platforms, SkyPatriot offers absolute state-of-the-art performance to protect against illegal drone intrusions.

Fast and reliable drone detection

Safety. Security. Privacy. The rapid evolution of low-cost, highly capable drones raises a new set of challenges for authorities and security personnel. Whether the drone operator is a negligent hobbyist or a criminal intent on causing havoc, an undetected drone can present a substantial safety or security threat.

Rinicom's SkyPatriot early warning drone detection system has you covered; from secure facilities and critical infrastructure to public venues such as sport arenas and airports, SkyPatriot will provide long-range detection and accurate classification of all drones within the monitored airspace.

The SkyPatriot system has been developed with input from senior UK law enforcement agencies and counter-terror and security experts.

KEY FEATURES

- **Automatic** - Automatic detection of multiple drones using AI-powered video analytics and computer vision
- **Long range** - Detection distance up to 2km for 30x30cm drones
- **Reliable** - 98% detection, tracking, and classification accuracy
- **Comprehensive** - Detects and identifies many types of drones from commercial to military grade
- **Modular** - Detection modules for 90, 180, 270, and full 360 degree coverage to suit multiple scenarios
- **Integration** - Integrate with other technologies such and RF and radar
- **Evidence** - SkyPatriot records video, image, and data evidence of all drone events

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Rinicom SkyPatriot Early Warning Optical Drone Detection

SYSTEM OPERATION
Hardware and software

Rinicom's SkyPatriot system (patent pending) provides field-tested, fully automated optical drone detection. SkyPatriot can be deployed as a stand-alone, fixed installation, as part of a mobile setup, or integrated into a larger system for maximum flexibility.

SkyPatriot uses high-definition detection cameras to continuously search for drone signatures. The HD sensors can detect an object as small as 2 pixels, which is imposible to see with the naked eye. Moving objects and background noise such as birds or tree branches moving in the wind are classified as not-a-drone within a second by the on-board AI.

Detection Camera



When a potential drone object is detected, the SkyPatriot system uses the powerful, 360-degree pan/tilt/zoom [PTZ] camera to zoom in on the object to analyse its signature. The bespoke AI-powered video analytic software can recognise and classify a wide range of drone signatures using Rinicom's extensive database, which is updated regularly with new drone profiles and signatures.

When a drone has been positively identified, SkyPatriot wil track its movements and record all data, including images and video, related to the drone in real-time. This information is logged by the system and can be used later.



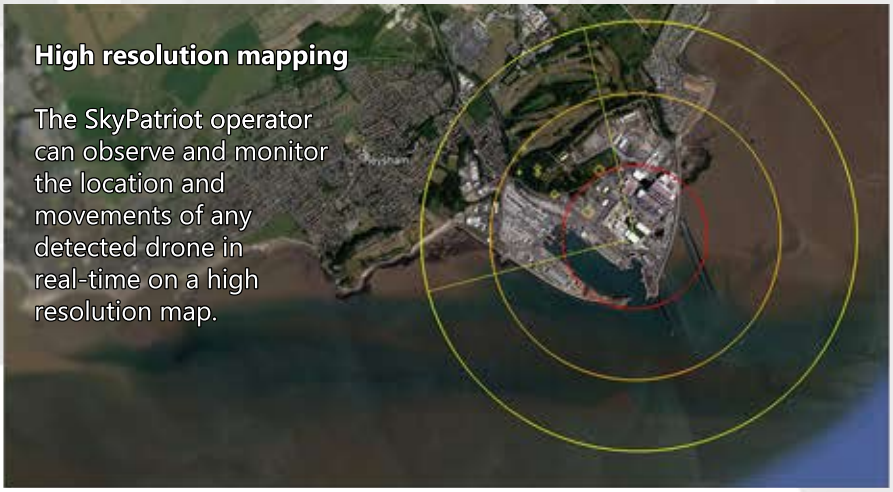
PTZ Camera for Identification and Tracking

DRONE DETECTION
Capabilities Overview



SkyPatriot will detect and track multiple drones in real-time. The position and trajectory information is sent to the command and control centre along with visual evidence (close up image) for complete and informed decision-making regarding any response to the detected drone.

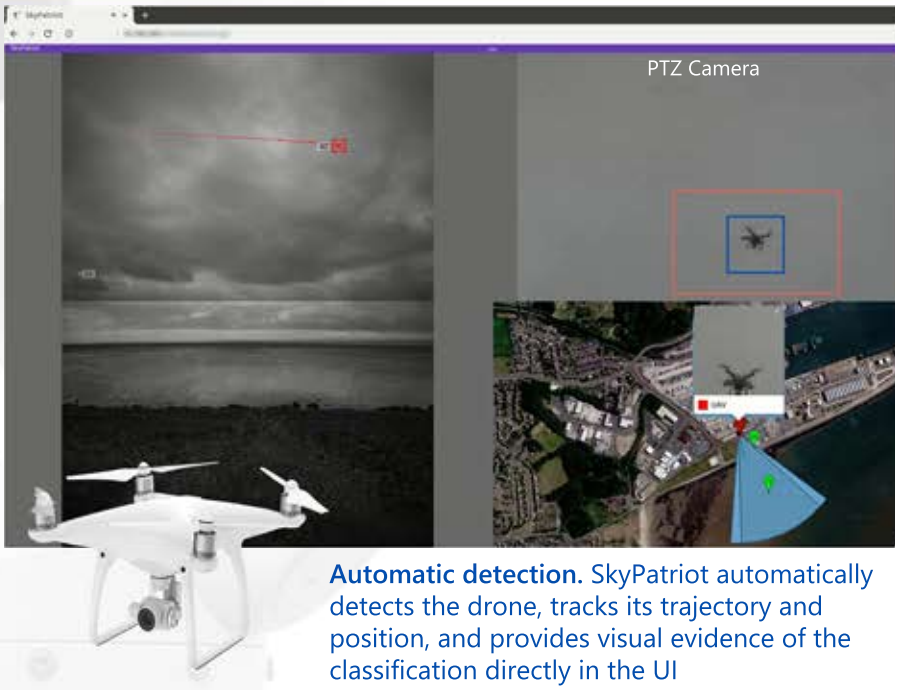
SkyPatriot can be configured with different 'zones' to convey different threat levels. In the example above, the no-fly zone is 1.5km out. Any drone detected between 1km and 1.5km will be analysed and monitored. Drones within 500m to 1km are considered potential threats and warrants an escalation of the security protocol. Any drone within 500m is considered a serious threat and should activate the emergency response protocol and any counter-drone systems available.



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DRONE DETECTION
Capabilities Overview



Automatic detection. SkyPatriot automatically detects the drone, tracks its trajectory and position, and provides visual evidence of the classification directly in the UI

SkyPatriot's AI not only detects and tracks drones, it uses image recognition and Machine Learning to identify the type/make/model of drone detected. This enables the SkyPatriot operator to derive additional information such as expected battery life, maximum speed and payload, and operational range etc. to inform decision-making.



SkyPatriot uses proven technology to deliver state-of-the-art performance under all operational scenarios. Since 2017, SkyPatriot has been installed at multiple locations including airports, prisons, and critical infrastructure installations, all over the world.

ADVANCED TECHNOLOGY

The SkyPatriot system is built on Rinicom's 15+ years of experience in communication technologies and software development.

SkyPatriot provides wide area coverage against drone threats, and it is particularly suitable for operational environments where other technologies such as RF, acoustic sensors, and radar are not feasible.

SkyPatriot can also be integrated with new or existing RF or radar installations to compliment the technology infrastructure and capabilities. This integration is possible through the proprietary Data Fusion module developed by Rinicom and enables SkyPatriot to send its data to other command and control centres.

The Data Fusion module also facilitates integration with Air Traffic Management (ATM) systems to support security forces and authorities to improve the quality of their response to a tangible drone threat by providing accurate, real-time tracking data about the location and trajectory of the detected drone.

SkyPatriot automatically sends all the data from the sensors to the command and control centre for the operator to evaluate for informed decision-making.

All alarms and notifications are prominently displayed audio visually

The operator does not have to sit in front of the screen at all times, alerts and notifications can be sent to compatible mobile devices for instant updates to new situations for remote personnel.

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Rinicom Limited
Riverway House, Morecambe Road
LA1 2RX Lancaster, Lancashire
United Kingdom

Telephone: +44 (0) 1524 840 450
Email: office@rinicom.com

www.rinicom.com

Specialised Expertise in Technology

Rinicom Ltd is a Lancaster-based, privately owned SME specialising in providing leading-edge technologies to an expanding group of customers both domestically and internationally.

Rinicom continues to innovate in several areas including video analytics for drone detection, camera solutions (optical and thermal), and secure radio using the latest developments in software defined radio (SDR) and IP MESH radio.

At Rinicom, the commitment to innovation supports an array of customers whose missions depend on protecting against drone threats in difficult operational scenarios.

Since its start in 2002, Rinicom's technical developments and advanced application of hardware and software have earned it a reputation for excellence in high-performance wireless communications, video and camera surveillance equipment, and first responder applications.

Rinicom is proud to have been awarded the Queen's Award for Enterprise: International Trade twice; first in 2013 and again in 2018.

Company proprietary data and specifications
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