

## Drone Detection System with Basler ace USB 3.0 Camera

### Customer

- Customer: Rinicom Ltd
- Location: Lancaster, England
- Industry: Security and Surveillance
- Implementation: 2017

### Application

[Rinicom Ltd](#) is a Lancaster, UK-based, privately owned small to medium-sized enterprise specializing in providing state-of-the-art solutions for electro optical drone detection, wireless broadband communication and wireless video surveillance.

The company's flagship drone detection system is [Sky Patriot](#). Using sophisticated artificial intelligence and state-of-the-art video analytics algorithms, Sky Patriot is capable of detecting drones up to several kilometers away. Furthermore, it provides full classification and tracking of detected drones. A powerful user interface gives the operator full situational awareness and the information needed to make decisions. Detected drones may be automatically neutralized with an optional integrated jammer.

Sky Patriot may be used as a standalone system or as part of a multiple-sensor solution, including RF detection and radar. The Sky Patriot AI data fusion engine ensures that nothing is missed, giving accurate real-time drone position and classification information.

The high flexibility of the system allows it to be used in several public security applications such as the surveillance of stadiums or other big public events.

One of the most important hardware components in the system is the camera, which must reliably deliver high-quality images, even in difficult outdoor lighting conditions. That is why the company sought out robust cameras that can continuously scan the skies for drones. The cameras must work in daylight as well as under low light conditions, while securing a wide field of view.

### Solution and Benefits

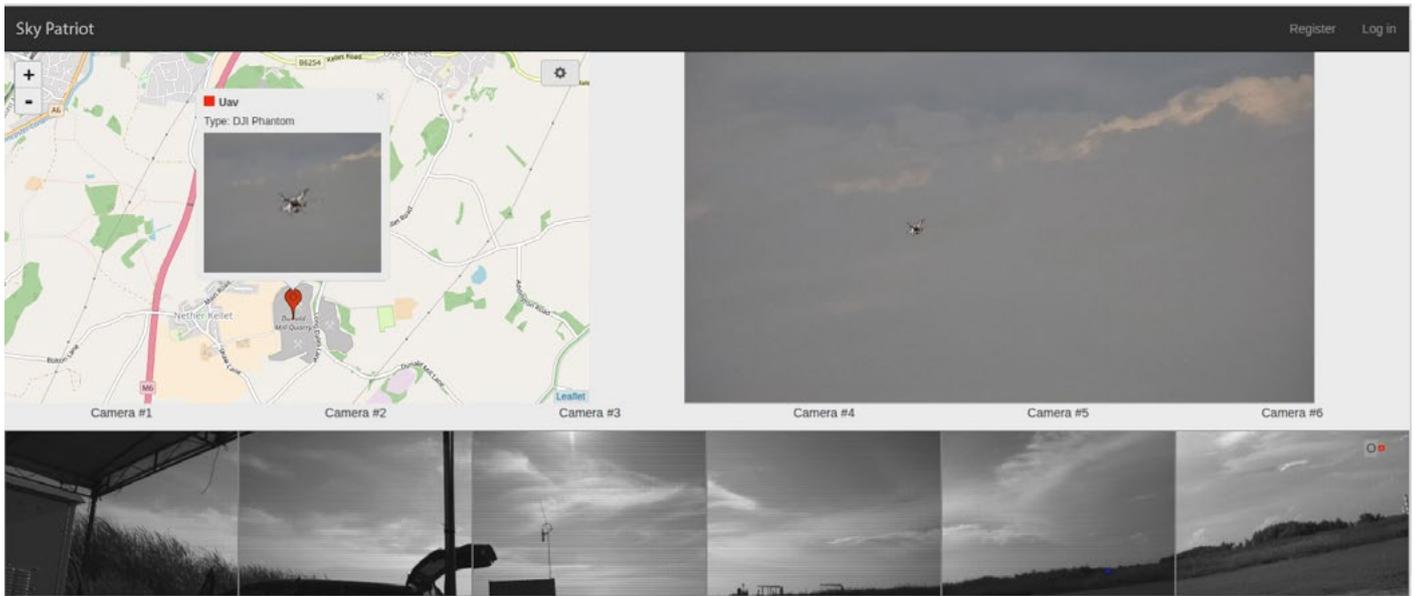
The fully autonomous Sky Patriot therefore uses the new Basler acA4024-29um camera model. These cameras are based on Sony's new STARVIS sensor. Through the use of Exmor R back-illumination technology, these rolling shutter sensors offer exceptional image quality coupled with high speed and low noise. Combined with Basler's know-how in sensor integration and great feature set, they offer Rinicom the ability to offer a high performance system to their customers. With these cameras, Sky Patriot can see further, faster and more accurately than any human.



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The following camera attributes were essential in the choice of Basler:

- The camera should work not only in daylight but also have good low-light performance.
- The resolution of the camera should be beyond 4k.
- The camera should have a high frame rate.
- The image quality should be excellent.
- The camera should offer the ability to produce raw, uncompressed video.



Sky Patriot-generated images

All of these requirements are met or surpassed by the acA4024-29um. To take full advantage of the performance of the sensor with its small pixels, the corresponding lens is essential. In this case, the decision was made to use the Basler lens, which has a great pixel resolution of 2.2  $\mu\text{m}$  and delivers a sharp image.

Sky Patriot is typically installed to protect public infrastructure. As a deployed system it contains a number of visual sensors, analytics engines based on artificial intelligence, data fusion algorithms, and a command and control platform.

SkyPatriot is successfully being used by numerous customers for critical infrastructure protection in the UK and abroad.

### Technologies Used

- Basler acA4024-29um
- 5 MP Basler lens



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