

## **Advantages of Radar Controlled CCTV**

**This paper describes an automated detection system using a Scan-360 wide area radar detector to control a pan-tilt-zoom (PTZ) camera. Radar controlled CCTV enhances the effectiveness of both technologies, resulting in an overall improvement in system performance.**

### **Radar strengths & weaknesses**

Scan-360 is ideal for rapidly scanning wide areas and detecting targets. Radar emits radio waves so works in complete darkness, as well as in mist, rain, fog and snow.

Scan-360 measures an area of 125,000 square metres every second.

Radars can perform limited target classification but are unable to distinguish one person from another, or humans from similar sized animals.

The presence of radar itself may not be a deterrent to intruders as its operation is invisible to them.

### **Camera strengths & weaknesses**

Cameras are able to distinguish individual people and can automatically classify targets using video analytics, for example: human, animal, bicycle or car.

Cameras must be correctly zoomed to give sufficient video resolution and are not suited to scanning large areas because a wide field-of-view has low video resolution.

Optical systems only work well when there is sufficient illumination, either from sunlight, or artificial means such as white LED lights or infrared (IR) illumination, so wide area coverage also needs wide area bright illumination.

### **Radar controlled CCTV advantages**

To rapidly detect and track multiple targets a Scan-360 radar sensor is used.

Scan-360 detection and priority areas are easily arranged using a map overlay display.

When a target is detected within a detection zone, Scan-360 automatically controls a PTZ camera to “slew to cue” so it points at the target.

Camera video analytics can be used to automatically classify the target and raise an alarm if the target type is determined to be a threat, for example a human.

Another option is to use the radar alarm output to trigger a short recording of camera footage to be sent to a remote control centre for a human operator to investigate.

In either case, the radar continues to track the target and update the camera position to keep the target within the camera field of view.

## **Covert surveillance**

Scan-360 emits microwaves that are invisible to the human eye.

For covert surveillance at night the PTZ camera can use built-in highly directional IR lamps to allow covert footage of the target to be recorded.

Scan-360 is easily configured to automatically trigger camera functions such as IR upon target detection. Only activating when there is a target to observe extends the lifetime of the IR illuminator.

Security staff can monitor the situation and plan exactly how to intercept and deal with the intruders while the targets are unaware they are under surveillance.

## **Active deterrence**

The system can easily be changed to provide an effective deterrent by using the Scan-360 to control the bright LED white light illumination on the PTZ camera.

Intruders react quickly when the nighttime darkness is interrupted by a bright spot light tracking their movements and they typically retreat. The radar rapidly updates the PTZ position that also causes the bright light to track the target in such a way that intruders believe a human operator is watching them.

This unique feature cannot be achieved using fixed cameras or radar alone.

In addition, Scan-360 outputs the target location to third party systems, so 'cause and effect' software can be configured to perform different actions based on target position. For example a pre-recorded message could be sent to a loudspeaker to complement the camera tracking.

## **Summary**

- Scan-360 continually scans 125,000 square metres every second and automatically controls a PTZ CCTV camera.
- Scan-360 automatic "slew to cue" when used with video analytics on the camera implements a completely automated detection and classification system.
- Covert surveillance from the radar can be augmented by video footage.
- Unlike fixed cameras, bright light illumination from a moving camera provides an effective visual deterrent effect as the camera follows the target.

**For further information about Scan-360 or to arrange a demonstration please contact us on +44(0) 1727 853521 or visit our website: [www.ogierelectronics.com](http://www.ogierelectronics.com)**