

This case study briefly describes how Scan-360 operates 24 hours per day at a busy quarry to monitor vehicle & plant movement by day, and to provide perimeter security by night.

Background

The customer wanted to ensure that all vehicles used the weighbridge upon entry and exit to ensure drivers were billed correctly. Some drivers had previously avoided paying for their loads when site staff were distracted by other duties. The drivers would use an alternative exit, avoiding the weighbridge. By using radar to automatically slew a camera, footage is always available to identify if any drivers have avoided the mandatory weigh in. The video footage provides clear evidence in the event of any disputes.

The Scan-360 radar was paired with a camera and mounted high up on a 7-metre pole to allow unobscured views of all areas, even behind large piles of excavated minerals. A single radar and camera is sufficient to cover the entire work site as well as all entry/exit points around the perimeter to record all vehicle movements.

During evenings and weekends, the radar has a secondary purpose to continually scan the quarry to detect intruders. Scan-360 will forewarn prior to any potential theft or vandalism of expensive plant and other fixed equipment. The quarry is normally only illuminated by the lights of the vehicles and equipment when in use, so out of hours the site can be extremely dark. Radar is the ideal solution because it does not need any ambient light to detect intruders. The illumination from a single PTZ camera is sufficient when automatically controlled by radar to point at, and zoom in on the target.



Aerial photograph of the quarry



Radar Performance

The customer was delighted with the Scan-360 performance throughout the quarry, even when mounted high on a pole. Vehicle movements are recorded and drivers are no longer able to bypass the weighbridge without being identified by the site manager. The video recordings include number plate footage to enforce revenue protection.

Out of hours, Scan-360 provides site security for the quarry. If an intruder is detected the radar automatically slews the camera to point in the correct direction and can be configured to enable white light or IR illumination. The alarm contact closure output is used to trigger a digital video recorded to retain footage of the incident. Third-party equipment can also use the alarm contact or IP data from Scan-360 to send alarm messages to remote security staff.



Scan-360 is the ideal solution for securing large areas and compounds. The radar can be mounted high to see over obstructions and does not have a large blind spot underneath. The web-browser based configuration uses an intuitive satellite map, over which the detection areas are defined by simply drawing the required area outlines.



Scan-360 uses the license-exempt 24 GHz frequency band so there are no hidden costs or license fees. No special permission is required to operate the radar and there are no safety implications.

With a long 200m detection range in all directions, a single 360-degree sensor covers an area of over 125,000 square metres. Adaptive software compensates for adverse weather to maintain a low false alarm rate and high detection probability. Settings can be changed easily using the IP interface to modify performance, for example making some areas more sensitive to movement than others.

Radar can operate within poorly-lit compounds. Upon detection Scan-360 can trigger the camera illumination if required. Bright white lights have a deterrent effect as the spot light from the camera will follow the intruders. Alternatively, infrared illumination may be selected so the intruders are unaware that a security team is monitoring their position, increasing chances of apprehension.

Please visit our website to discover more about our radar solutions.



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