Agent Vi Protects Large, Remote Solar Farms Against Intrusion and Theft

Challenge

Wirsol Solar UK is a globally active company that installs photovoltaic systems to generate electrical power from solar radiation. Wirsol has multiple solar farms throughout the UK, and sought an affordable surveillance solution for four of these 5-megawatt solar farms, each measuring some 200,000 square meters. Specifically, Wirsol wanted to prevent intruders from entering and stealing the highly valuable solar panels.

There are many challenging conditions at the sites, including the length of the extensive perimeters. The large sites are unmanned, not illuminated, and situated in remote, rural locations. Accordingly, Wirsol required a surveillance system that could detect intruders in real-time, send events to a remote monitoring station, and warn off intruders via an on-site speaker system.

Solution

The original design for the sites was an analog system, based on the assumption that an analog system would be cheaper and better suited to the available budget. However, certified systems integrator WT Parker became involved in the project and proved that the level of surveillance offered by an IP solution was higher, and moreover, that the total cost of ownership (TCO) of the IP system was actually lower.

WT Parker deployed Vi-System, Agent Vi's real-time video analytics solution, integrated with AXIS Q1921-E Thermal Network Cameras. The outstanding range and performance of the thermal cameras enabled the placement of a minimal number of cameras (10-12) along the lengthy perimeter at each site. The thermal cameras were embedded with Vi-Agent software component, and activated with the following detection rule: **Person moving in an area** to detect and alert to unauthorized personnel entering the site and moving in restricted areas. The combined solution enabled the creation of a protective zone around the perimeter fence to detect intruders by day or night, and regardless of whether they climbed over the fence, under the fence, or even cut directly through the fence.

The sites employ Milestone XProtect® Enterprise as their VMS recording and viewing application, which is fully integrated with Agent Vi's software. All perimeter intrusions detected by Vi-System generate an alert, which is displayed in the Milestone XProtect® Smart Client.

"We were pleasantly surprised to discover the benefits of IP surveillance over analog systems. The use of thermal cameras with Agent Vi's real-time analytics software is especially appropriate, as our large sites do not have lighting and are difficult to guard. We have peace of mind with this sophisticated solution that protects our investment."

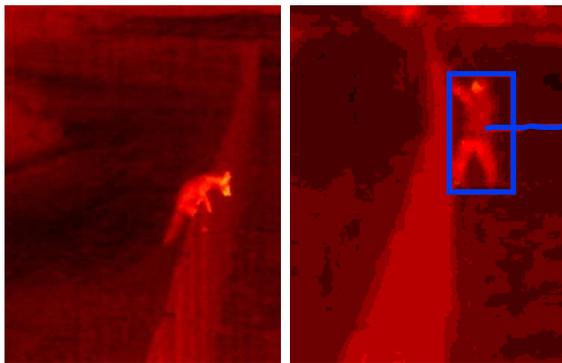**Project Manager**
Wirsol Solar UK

Vi-System integrated with AXIS Q1921-E Thermal Network Camera

Result

Vi-System has detected multiple instances of intruders climbing over the fences at the solar farm sites. After detecting the perimeter breach, Vi-System generates an alarm in the Milestone XProtect Smart Client that is viewed by a security guard at a remote monitoring station. The guard makes an announcement via the speakers at the site to warn off the intruder, and if necessary, instructs police to attend the site.

With its superior detection capabilities, Vi-System successfully differentiates between irrelevant movement and genuine perimeter breaches, ensuring a very low false alarm rate (FAR). This is important, bearing in mind the remote locations in rural areas, and the associated movement of small animals around/in the site. Moreover, the combination of Vi-System and Axis thermal cameras ensures detections in all weather scenarios; intrusions, acts of vandalism and theft are detected in challenging conditions such as heavy rain and fog.

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Gary Harmer, Director of Sales, Electronic Security at Mayflex, states that "having Agent Vi's analytics on Axis' thermal cameras extends the effective detection range of the cameras, enabling the deployment of only one third of the number of cameras proposed in the original (analog) plan. Combined with Milestone's video recording and management solution, Mayflex delivered an integrated solution that proved competitive on features and price."

Neville Thompson, Project Manager at WT Parker, adds that "the TCO of this project was significantly reduced by adopting an IP system. The original design featured analog cameras, codecs, cabling (analog and power cables), audio devices and illumination, as well as considerable infrastructure and substantial labor costs. For example, to introduce surveillance at these remote sites, poles needed to be erected in order to mount the cameras. Under the original analog plan, poles were required every 40 meters (the camera range), and each camera required an illumination source as well. In contrast, the IP surveillance solution that we proposed and deployed eliminated many of these associated costs. The 140 meter range of the thermal cameras meant that less poles were required around the perimeters of the sites and that no illumination devices were needed."

Stan Dominey, Project Manager from Wirsol Solar UK, says "we were pleasantly surprised to discover the benefits of IP surveillance over analog systems. The use of thermal cameras with Agent Vi's real-time analytics software is especially appropriate, as our large sites do not have lighting and are difficult to guard. We have peace of mind with this sophisticated solution that protects our investment."

Ariel Frischoff, VP Sales EMEA & APAC at Agent Vi, comments that "Agent Vi's seamless integration with Axis and Milestone, alongside the logistical and installation expertise of Mayflex and WT Parker, enabled rapid deployment in line with the customer's tight schedule. This best-of-breed solution is now being rolled out at additional solar farm sites across the UK."

About Agent Vi

Agent Video Intelligence (Agent Vi) is a leading provider of open architecture, video analytics software deployed in a variety of security, safety and business intelligence applications worldwide. The comprehensive video analytics solutions offered by Agent Vi extend from real-time video analysis and alerts to forensic search and post-event analysis, and are fully integrated with a range of third party edge devices and video management systems.

Integrating Agent Vi's advanced video analytics capabilities into existing or new surveillance networks enables users to benefit from the true potential of their surveillance networks, transforming them into intelligent tools that respond to the practical challenges of the 21st century.

About Vi-System

Vi-System is Agent Vi's real-time video analytics software, which transforms standard surveillance networks into intelligent and effective detection and alert systems.

By performing real-time analysis of the video stream, Vi-System identifies and generates alerts for a variety of user-defined events relating to people, vehicles and objects. Used for applications such as security, safety and business intelligence, Vi-System offers effective monitoring of multiple video sources in parallel, enabling automatic detections, alerts and responses to events, as they emerge.

Based on Agent Vi's open architecture, pure-software approach, Vi-System can be easily integrated with a wide range of edge devices and video management systems, in both new and existing surveillance networks.

Vi-System boasts the combined benefits of superior detection performance, high scalability, installation simplicity and ease of use, making Vi-System the most advanced, comprehensive and cost effective real-time video analytics solution on the market.