London Underground London United Kingdom

Protecting Critical Infrastructure For London Underground

Thermal imaging helps to protect critical depots serving Europe's largest underground railway

Over 4.2 million people use the London Underground each day. Although not often visible to customers, during the night thousands of people are also busy at work to ensure that the signalling, tracks and other critical infrastructure is maintained and upgraded to meet increased demands placed on the Tube network.

London Underground (LU) maintains hundreds of facilities across the capital providing access to tracks and tunnels, along with highly specialist equipment and spare parts needed for both routine maintenance and ongoing improvement work.

Critical depots requiring constant access

Many of these depots and goods-yards are often alongside track areas and need to be accessible 24 hours a day, sometimes at short notice, to allow engineering teams to carry out their tasks. The loss of specialist equipment through theft can impact the entire network as certain items are custom made for London Underground requiring manufacturing lead times of up to 20 weeks.

Although depots offer convenient access, the trackside location places some restrictions on how these locations are secured.

Vicom delivers innovation

A project to secure a London Underground depot required innovative solutions, and needed to take into account the limitation imposed by the depot's location while addressing the need to maintain 24 hour a day access with full audit of who has accessed the site and what equipment had been removed. LU were also keen to avoid using cumbersome pan-tilt-zoom cameras and external housings while still ensuring the site was always covered while using the least number of devices to increase reliability of the system.

To this end, Vicom, a highly regarded systems specialist with a number of successful rail sector projects under its belt proposed an innovative solution utilising a combination of MOBOTIX thermal and hemispheric cameras utilising advanced analytics with local access control with remote monitoring.

By using MOBOTIX's decentralised concept and dual lens cameras, the proposal would dramatically reduce the number of cameras deployed on the site compared to other options while providing intelligent analytics able to detect site intruders during the day and night without the need for external perimeter lighting.

Vicom carried out a detailed site survey and capability test to ensure that the site could be monitored both day and night. Due to the dual lens capabilities and hemispheric models, the entire site was designed to be secured using just 6 cameras. The system is also integrated alongside IP Access Control, Intruder Alarm and Public Address Systems which are remotely monitored 365 days a year by an NSI Gold Alarm Receiving Centre (ARC).

The whole project including exhaustive testing and sign-off phases took just 12 weeks to complete.

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Significant return on investment

The flexibility of the system means that different areas can be armed independently while the thermal imaging combined with MOBOTIX MxAnalytics system built into each camera can detect movement and emit an audible alarm, warning the intruder to leave the area. MxAnalytics also makes it possible to track the movement of people and objects in the image, and collects statistical behaviour data to maintain a complete audit of site activity.

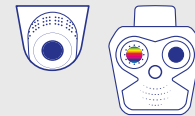As John Hinds CEng MIET, a Senior Telecommunications Engineer for London Underground explains, "The system allows us to effectively secure the depot and gain access whenever we need."

Since implementation, the system has been effective, with only some minor remedial work required to secure the site against the encroachment of urban wildlife such as foxes that occasionally triggered alarms which were quickly identified on closer inspection of the actual footage.

"This has proven a successful project," says Hinds, "and based on the results, it is an approach we could consider adopting at other sites across the Capital.".

MOBOTIX System In Use
Cameras: *6 (S15 & M15 Thermal)*

Software: *MxManagementCenter*

Retailer information:

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