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Unmanned train depots secured by Video Analytics

Customer story

Southeastern's train depots require
intelligent surveillance solutions

Southeastern Rail Network operates train services between London, Kent and parts of East Sussex. It is one of the busiest networks in the country, transporting 640,000 passengers each weekday on its 392 trains, which are temporarily housed in 12 depots situated around South-East England. Some of these depots are unmanned, and therefore require intelligent security solutions. Bosch Security System's Integration Partner, Taylor Technology Systems, were tasked with upgrading the entire video surveillance system across the 12 depots.

The legacy analogue surveillance system had come to the end of its service life and was overdue for an upgrade. A state of the art IP based system was required to deliver upon the clients requirements for all the depots to be

fully monitored 24/7. An upgrade to an IP camera solution can provide vastly improved image quality, wider coverage and wireless capability, along with Intelligent Video Analytics and high levels of data security encryption.

Securing the train depots



The primary challenge that needed to be solved by the video surveillance solution was securing the 5 unmanned depots. Some of these sites had previously been subject to thefts due to unauthorised entry via the main entrances. All access gates therefore needed to be monitored 24/7, ensuring that all personnel, or vehicles, entering the sites are tracked and reported. This includes all deliveries to onsite buildings as well as tracking all train arrivals and departures. A fully integrated solution was required that could provide all of this while also reducing costs.

A critical factor was that the video surveillance solution had to be able to work unimpeded throughout the night. The installed video technology therefore needed to provide high clarity video in low-light levels, whilst also still ensuring that the Intelligent Video Analytics worked as required.

An end-to-end Bosch solution

The camera portfolio installed across the 12 depots included FLEXIDOME IP starlight 7000 VR, DINION IP starlight 7000 HD and AUTODOME IP starlight 7000 HD cameras. These cameras are all equipped with Bosch's Intelligent Video Analytics solutions ensuring that the most relevant video data can be precisely applied to the requirements of the train depots.

These analytics solutions allow video surveillance to go further than just security applications, using statistics in the form of metadata for purposes such as perimeter control and vehicle tracking. Using Camera Trainer, a built-in machine learning capability, surveillance cameras can also be taught to recognize and detect stationary objects or certain situations instead of being triggered by motion alone.

As an integral part of this end-to-end Bosch solution, all recording from the depots is remotely managed using DIVAR IP all-in-one 7000 recorders – an all-in-one recording, viewing and management solution for network surveillance systems.



Intelligent Video Analytics used for more than just security purposes

To combat unauthorised entry to unmanned sites, the IP cameras are using Intelligent Video Analytics to prevent security breaches before they occur. Some surveillance cameras are using a digital trip wire to identify movement at perimeters. If movement is detected, an alert is sent to security personnel who are able to view the recording and respond straight away. Intelligent Video Analytics from Bosch are able to differentiate between genuine security events and false-triggers, meaning that security alerts are dependable and reliable.

In-built Intelligent Video Analytics went further in this application; to monitor train movements, track deliveries inside the depot and provide access to staff. The AUTODOME IP starlight 7000 HD cameras were installed on gantries over train tracks and were the ideal PTZ solution, as they can continue tracking while panning, tilting or zooming.



All cameras with starlight technology continue to deliver full intelligent analytics at night and in low light levels. The cameras installed around the depots are able to provide colour filtering down to 0.0077 lux or deliver detailed monochrome images where other cameras show no image at all.

Expert installation and integration

“Taylor Technology Systems deployed a full suite of servers and IT equipment with Bosch CCTV Platform across several sites to ensure security was enhanced due to end of life equipment. With full in-depth training, the Taylor Technology engineers worked to a professional high standard by ensuring site safety was paramount during the 6 month project that was on time and within budget.”

Steve Martin, Project Manager, Southeastern

Taylor Technology Systems, a member of our Installer and Integrator Partnership Programme, carried out the installation and configuration of this solution. They expertly delivered the installation project at active depots while keeping the legacy system working. The team worked with Southeastern to arrange complex line blockages so they could install the equipment safely without affecting the day-to-day operation of the railway. To complete the project, engineers from Taylor Technology Systems completed comprehensive training courses on the Bosch Video Management System, allowing seamless management of the digital video across IP Networks. This ensured that the Bosch technology was installed exactly to specification. Taylor Technology Systems have been awarded a Bosch Outstanding Achievement Award for their work on this project.

A long-term solution

With built-in analytics in all cameras, this end-to-end Bosch solution lowered costs for the end-user. Installation, configuration and maintenance were also eased, as pre-configured default settings can be used in applications such as vehicle tracking and perimeter detection. The guaranteed top build quality from Bosch, combined with expert installation, ensures that this is a long-term solution for Southeastern.