Axis network cameras help manage factory site vehicles.

Identifying license plate information from images for several hundred vehicles per day.

Organization:
Bridges & steel structures manufacturer

Location:
Wakayama, Japan

Industry segment:
Industrial/Manufacturing

Application:
License plate recognition

Axis partner:
Toshiba LE Solution Corporation

Mission

A certain manufacturer of bridges and steel structures operates a number of factories on an extensive site in Wakayama Prefecture, working on multiple manufacturing projects simultaneously and in parallel to create structures for bridges and large buildings. Up to several hundred large vehicles and employee vehicles enter and leave these factories every day, and for safety reasons, it was necessary to reliably record the license plate, company and department of each of these vehicles. In addition, all vehicles entering or leaving the site were requested to stop at the security post, where the persons in charge were required to quickly note and record a detailed description of each vehicle as it entered or exited.

Solution

The system that has now been deployed not only records the license plate information of vehicles entering and leaving the site by photographing their license plates using network cameras and analyzing the images obtained, but can also decide instantly whether the vehicle has already been registered or not.

Another system was installed at the same time to monitor and record the major roadways within the factory site. Because the site is mainly outdoors, the camera chosen was AXIS P1365-E Mk II, rated to IP66 for resistance to water and dust. Footage taken by the AXIS P1365-E Mk II installed at the vehicle gate is recorded on AXIS S Series equipment locally, and is also forwarded to a server for identification of license plate information. This license plate information is then compared to the company's vehicle database. If this comparison confirms that the vehicle has already been registered, the indicator in the security post turns green. For vehicles that have not yet been registered, the light turns red.

Result

Previously, the license plate information of vehicles entering and leaving the factories was recorded manually, but the deployment of this solution has made it possible to carry out the process quickly and automatically.

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"Despite several hundred vehicles coming and going every day, we are now able to record vehicle information in real time, which has led to a dramatic improvement in efficiency. Image quality has also been satisfactory. The information and images recorded can also be used as evidence, which is useful from the perspective of safety management within the site."

General Manager of Wakayama factory of bridge and steel structure manufacturer

The company's general manager of the factory notes, "The information and images recorded can also be used as evidence, which is useful from the perspective of safety management within the site."

System installation and related details

Founded in 1921, this long-established company has its head office in Naniwa-ku, Osaka City. In addition to the design, manufacture, construction and maintenance of railway and road bridges, it is involved in the manufacture and construction of the structures that form the skeletons of buildings, and has a track record of around 2,300 such bridge/structure projects, including that of the Akashi Kaikyō Bridge.

Previously, each vehicle entering or leaving the factory stopped at the front gate to allow security personnel to visually inspect entry passes and to record license plate information. Because multiple projects run simultaneously and concurrently, many vehicles of different sizes are entering and leaving the site all the time. During busy hours, there can be more than 500 vehicles coming and going. From the security personnel's point of view, checking and recording the details of each vehicle had become a considerable burden. The ability to identify vehicles entering and leaving the site was something that had been requested by factory managers for many years.

The equipment selected consisted of AXIS S Series recorders equipped with AXIS Camera Station video management software, and AXIS P1365-E Mk II cameras. The AXIS S Series incorporates a Power over Ethernet switch, so this one unit can do everything from recording and managing video to supplying power to cameras.

Fixed-box AXIS P1365-E Mk II surveillance cameras are used with infrared lights at the front gate. These are rated to IP66 for resistance to water and dust, which makes them well-suited to outdoor installation. In addition, the superior wide dynamic range enabled by Dynamic Capture allows license plates to be photographed clearly even when backlit by vehicle headlights, while infrared light is utilized automatically at night to capture distinct images of license plates. When a vehicle approaching the gate is detected in an image, the license plate is photographed automatically.

The image taken is forwarded to the license plate authentication system, identified instantly and then compared to the company's database of vehicle information. If this comparison confirms that the vehicle has already been registered in the database, the indicator in the security post turns green to notify security personnel. For vehicles that have not been registered, a red light comes on. An AXIS P8221 I/O Audio Module is used to switch the indicator lights on and off via the network. The response of security personnel to the incoming vehicle is based on the indicator light. Footage taken by the various cameras is recorded continuously by AXIS S Series recording solutions.

Axis partner Toshiba LE Solution Corporation (TLES) was responsible for the design and deployment of the system. TLES has been a specialist in building solutions based on AXIS Camera Station for many years, and has resolved many issues for end users in a variety of industries. After deployment of the system, gate procedures were performed more quickly even when the number of vehicles increased, leading to smoother traffic flows within the site and improved safety for the factories thanks to the system's 24-hour operation.

At this factory, which has provided support for the social infrastructure of roads and bridges, and also the skeletons of many buildings, a highly advanced solution based on video footage has also been deployed for daily vehicle identification. Axis is proud to support the cutting-edge initiatives of this time-honored manufacturer.

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