Bosch GmbH: supporting vehicle access control with CCTV surveillance

Bosch GmbH: supporting vehicle access control with CCTV surveillance. License Plate Recognition (LPR) is a fast developing technology that is already proving very useful in many areas such as speed regulation and vehicle-access control. Combining LPR with CCTV surveillance is even more useful as it provides valuable context information such as vehicle details that can be used as video evidence at a later date. Jan Noten, Bosch Security Systems’ Application & Business Development Specialist Digital CCTV, explains how the company’s recently acquired REG-Sentry LPR-based vehicle-access control system can be integrated into the Bosch Video Management System to produce a complete vehicle-access/CCTV surveillance installation.

License Plate Recognition (LPR) systems make use of specialized infrared-sensitive cameras capable of capturing the number plates of moving vehicles in ambient light levels from bright sunlight to complete darkness. The captured video is then converted into data embedding the license plate number and compared with a database of vehicle registration numbers.

The LPR systems are invariably standalone, often operating alongside CCTV installations but with little or no interaction between them. This, however, is about to change.

Integrating Security Systems through IP

Following Bosch Security Systems’ recent acquisition of Derwent Systems, a company with extensive expertise in license plate recognition, the company has utilized the powerful integration possibilities of its VMS (Video Management System) and developed a solution that allows Derwent’s advanced REG-Sentry vehicle access control system to be added to the VMS.

The VMS is an advanced enterprise IP video security solution that provides seamless management of digital video, audio and data across any IP network. Through the VMS, it is also possible to seamlessly integrate CCTV systems with other equipment such as intruder alarm systems, Automatic Teller Machines.
(ATMs) and Point of Sale (POS) equipment.

The addition of vehicle-access control with the company’s new REG-Sentry system is a logical extension to this broad functionality.

**Automated Vehicle Access Control**

The company’s **REG-Sentry system** can operate as either a standalone solution or integrated with other equipment.

Users can configure the system with specific number plate black/white lists containing up to 10,000 registration numbers, barring or enabling access to any vehicle attempting to enter a secure site. REG-Sentry therefore offers a flexible, user-friendly solution for a wide range of access-control applications, including access roads, car parks, gated communities, factories, warehouses, ports, offices and schools.

The system consists of a dedicated **LPR camera** and a **control box** with an embedded processing engine to intelligently control traffic barrier applications. LPR cameras can also operate with infrared illuminators, with all visible light filtered out to eliminate problems of glare caused by headlights, sunlight and wet road reflections.
The LPR camera captures the number plate of any vehicle approaching an access-control point and transmits the data to the REG-Sentry control box, where it is processed and compared with the user-defined black/white list. The system then sends a signal to the access barrier to open or remain closed. The intelligent processor in the control box converts number plate images from the camera to ASCII characters and appends date and time information. This data can then be monitored at the time of conversion via the RS232 output port of the REG-Sentry control box. The user’s black/white list can be updated and uploaded with the system’s easy-to-use Sentry-Viewer software.

Combining Strengths

Integrating REG-Sentry with a CCTV installation offers lots of advantages, from providing ‘context shots’ (photographs with a wider field of view to reveal details of vehicles at the access barrier) to automatic recording of the entire scene at and around the barrier for a specified time. The CCTV coverage also allows the behavior of drivers refused access to be monitored.

A solution to accomplish this integration has recently been developed by Bosch. The REG-Sentry control box output can be read by the VMS server to automatically alert the control room when, for example, a vehicle with restricted access approaches the barrier, and to display a CCTV image of the vehicle on one of the control room monitors.

In addition, each car’s arrival can be automatically logged and recorded on video, which can later be retrieved from the CCTV storage device by a simple search action of the number or part of the number. In this way, every access or attempt to gain access is registered both in the REG-Sentry and as stored video by the VMS to provide video evidence if it should become necessary at a later date.

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