

July 2007
PI 5842 ST Goe

Enhanced performance of CCTV over IP **Bosch boosts the power of its advanced VCA software**

- ▶ Embedded Video Content Analysis (VCA) enables 'Intelligence at the edge'
- ▶ Enhanced detection of suspicious behavior and events
- ▶ Improved security thanks to automated surveillance

Bosch Security Systems has introduced major enhancements to its Intelligent Video Motion Detection (IVMD) software. They include an extended range of filters for detecting suspicious behavior and a new image-stabilization algorithm that eliminates the effects of jitter to maintain reliable detection even from cameras mounted on unstable supports.

With their advanced processing power, modern IP network encoders and cameras are capable of far more than simple video transmission. In particular, embedding intelligent functions such as VCA at the edge of an IP network, i.e. in the encoders and cameras themselves, reduces traffic on a network since video is transmitted over the network or stored only in the event of an alarm. This saves significantly on bandwidth and storage. It also reduces human intervention as it relieves operators of the need to continuously watch the monitor screens, resulting in fewer errors and more reliable alarm handling.

Bosch took an important step towards realizing 'intelligence at the edge' in CCTV with the development of IVMD 1.0 for embedding in its IP Network Video products. The latest release, IVMD 2.0, takes this concept even further by extending the range of alarm criteria and providing additional functions to aid live surveillance and forensic searching.

The range of alarm criteria now includes object identification on the basis of aspect ratio; idle-object detection for detecting suspicious items left at a

scene or cars parked in sensitive locations; object-removal detection for monitoring displays in, for example, museums and retail stores; and trajectory mapping for detecting suspicious behavior such as loitering. IVMD 2.0 also features image stabilization for pole-mounted cameras. This provides stabilization on both the vertical and horizontal axes before the image is processed by the detection algorithm, ensuring reliable tracking even when the cameras are mounted on unstable supports.

As well as its improved detection algorithm, IVMD 2.0 embodies all the powerful features of its predecessor IVMD 1.0. This includes an advanced background-learning algorithm that saves computational power by suppressing unwanted alarms from spurious sources in the image and adapts to changes in background. As in IVMD 1.0, up to 16 independent detector fields can be set up within a scene for alarm generation with different trigger parameters. Moreover, alarm parameters such as size, speed and direction discrimination can be set up independently for each of the detector fields.

In addition to creating alarms, IVMD 2.0 also produces metadata that provides a description of how the algorithm has interpreted the analyzed scene. The metadata, which is transmitted over the network and recorded together with the video stream, can be used by Bosch's VIDOS and Video Management System (VMS) solution to produce video overlays during live viewing that highlight suspicious objects or activities. It can also be used to provide a smart forensic search capability on archived recordings.

Contact person for press inquiries:

Bosch Security Systems

Marijke Raaijmakers

P.O. 80002

5600 JB Eindhoven

The Netherlands

Phone: +31 40 2577185

Fax: +31 40 2577119

E-mail: marijke.raaijmakers@nl.bosch.com

<http://www.boschsecurity.com>

The Bosch Group is a leading global supplier of technology and services. In the areas of automotive and industrial technology, consumer goods, and building technology, some 260,000 associates generated sales of 43.7 billion euros in fiscal 2006. The Bosch Group comprises Robert Bosch GmbH and its roughly 300 subsidiary and regional companies in over 50 countries. This worldwide development, manufacturing, and sales network is the foundation for further growth. Bosch spends more than three billion euros each year for

research and development, and in 2006 applied for over 3,000 patents worldwide. The company was set up in Stuttgart in 1886 by Robert Bosch (1861-1942) as "Workshop for Precision Mechanics and Electrical Engineering".

The special ownership structure of Robert Bosch GmbH guarantees the entrepreneurial freedom of the Bosch Group, making it possible for the company to plan over the long term and to undertake significant up-front investments in the safeguarding of its future. Ninety-two percent of the share capital of Robert Bosch GmbH is held by Robert Bosch Stiftung GmbH, a charitable foundation. The majority of voting rights are held by Robert Bosch Industrietreuhand KG, an industrial trust. The entrepreneurial ownership functions are carried out by the trust. The remaining shares are held by the Bosch family and by Robert Bosch GmbH.

Additional information can be accessed at www.bosch.com.