

The advantages of CCTV – minimizing breakdown in production and other losses

In today's industrial firms, security systems – and especially video monitoring systems – are becoming of increasing importance. In addition to intruder detection systems and solid locking systems, CCTV systems help to reduce commercial risks.

Modern systems even allow around-the-clock remote monitoring via mobile networks, which can be very useful in order to prevent intrusion and damages.

Michael Gwozdek, the Managing Director of the German Video surveillance product supplier HeiTel Digital Video GmbH, gives an example of how a video surveillance system can make a difference when the aim is to prevent and minimize losses and damages, caused by intruders.

Breakdowns in production, caused by damage to production plants, may quickly result in lasting liquidity problems. Serious consequences may also be caused by the removal or destruction of PC workstations including backup systems, for instance when removed or destroyed at the same time in both the development department and the server room. The data loss associated with this would be the MCA for every manufacturer if this manufacturer both produces and supplies development services. Not only are the giants of industry affected by this, but also middle-sized and small businesses, because delivery shortages and noticeable delays in production development usually result in serious damage.

The example we shall use is a classical approach resulting in increased security requirements for the production industry. In a particular industrial firm of about 2,392 square yards, several break-ins had taken place within the last year in spite of the presence of an intruder detection system, resulting in substantial damages to the previous owner. The proprietor therefore decided to move his premises from this quiet, cost-efficient location into the city because he thought that the buildings

– now bathed in light from well-lit streets and near to the next police station – would no longer be in any danger of a break-in. On the other hand, the new owner made a virtue of necessity – he decided right from the start to invest in additional safety measures. First he had all the mechanical safety equipment checked and additional gates and new locking systems installed at critical locations. The intruder detector system was also put to the acid test and finally expanded with motion detectors for both in- and outdoor areas.

Does CCTV provide additional security?

Knowing that a video monitoring system does not provide any guarantee against break-ins, the operator decided to install ten additional fixed cameras for continuous monitoring of the facade of the building and a dome camera for targeting observation of the parking lot. After an initial viewing, high-resolution cameras with special day/night application characteristics were chosen for security. During a practical demonstration, the operator was satisfied with the advantages of the dual-mode camera technique, which delivered sharp, colour pictures during the daytime and

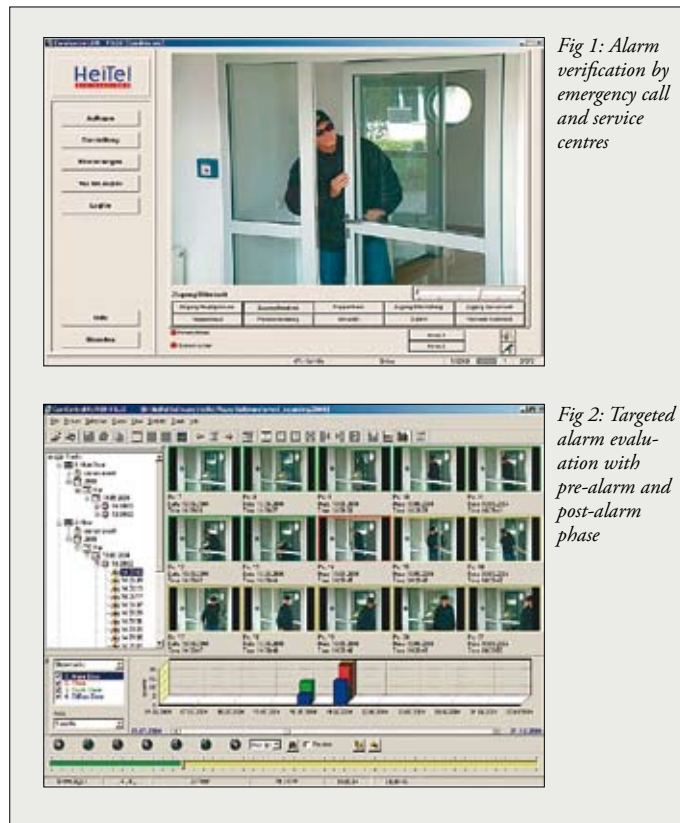


Fig 1: Alarm verification by emergency call and service centres

Fig 2: Targeted alarm evaluation with pre-alarm and post-alarm phase

qualitatively good black-and-white pictures in low-light conditions. In especially critical areas, alarm-controlled auxiliary spotlights are used for optimal recognition of detail within the colour spectrum and increased security due to the deterrent effect of the bright lighting. Inside the building, a total of 12 colour cameras – also at high resolutions – monitor the floor areas, the storeroom, the goods reception and the stair wells. Naturally, care was taken during installation to ensure that the electronic eyes could not view the staff work stations.

The cameras have an additional advantage at the parking lot as well as at the main entrance area and the delivery area during business hours. Using the video system, certain staff members can observe approaching vehicles as well as the entrances for deliveries

and visitors from their workplaces.

After intensive consultation with specialist installers and individual discussions with manufacturers, it was decided that the central video station would be responsible for the following core functions, namely, transmission, recording and storage of detection and alarm events.

In addition they would also require the connection of an emergency call and service centre which was to cover both the enabling and disabling of the safety system by means of regular electronic tours and visual alarm verification in the case of the intruder alarm (Fig. 1). To simplify the activities of the video system, these functions are summarised as the classical tasks of an image transmission system that has been tailor-made for remote alarm monitoring with integrated long-term recording.

In order to make the expanded security concept understandable as a whole, the following passages explain the basic functions of the system in stages.

Detection, alarm and transmission

The indoor and outdoor motion detectors are connected to the burglar alarm system and when this system is enabled they control the forwarding of the alarm to the emergency call and service centre. At the same time, the burglar alarm system emits a message to the video system which then initiates picture transmission via a separate ISDN connection to the image reception centre in the service centre. The integrated motion detection system is also used indoors, whereby video alarming can be made at the service centre specific to the camera that is triggered.

To avoid false alarms during business hours, the video system has a separate enable/disable switch input that is automatically

controlled with the block-lock function of the burglar alarm system.

Recording and logging

At the same time, the video system starts event recording after each alarm, taking into account the pre- post- and main-alarm phases (Fig. 2). By means of the timer function, the cameras are also additionally recorded during the daytime, whereby these pictures are then overwritten after a preset time. Finally, all relevant functions must be logged to ensure that important system conditions and actions of the user can also be checked by the operator. The video receiver software for the emergency call and service centre must also be equipped with logging functions and must also store all incoming video sequences in a receiver PC so that the service centre, for its part, can prove at any time whether the transmitted services – i.e. tours and instant alarm verification – have actually been carried out.

Additional advantages

Because the video cameras in the entrance areas are also connected to the in-house PC workstations and the owner also places great importance in being able to access the live images and the stored picture sequences at any time from his private residence via DSL or when on the go using the mobile network (GSM, HSCSD, GPRS, UMTS), the video system must not only have an efficient image transmission function for dial-up connections with low bandwidths but at the same time must also support parallel network connections to several receiver systems.

There is no question that with such high requirements, suitable measures by means of creating individual user profiles are indispensable to ensure protection against unauthorised access. Up to this day, the decision to invest in additional security measures, in particular in a well thought out video monitoring system, has not been regretted by the owner – even though the

insurer has not granted a rebate for doing so. The video cameras that have been so readily installed in plain view and the visible lighting during the night most definitely have a deterring effect.

The connection of the burglar alarm system, combined with the alarm-controlled image transmission, to the emergency call and service centre ensure that a break-in is possibly prevented, and at the very least that any damage that may result is reduced to a minimum due to a fast reaction time. ■



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