

## Milestone IP video surveillance technology protects Northern Europe's largest casino

*Money is always changing hands with the thousands of guests who visit the largest casino in Northern Europe, Casino Copenhagen. And when money is in focus, so is security. Both security and service are taken very seriously at this casino, so they have installed the most advanced IP video surveillance platform to ensure the safety of both guests and employees.*

There is plenty to keep track of at Casino Copenhagen, Northern Europe's biggest - and Denmark's first - international casino, built as an extension to the Hotel Radisson BLU Scandinavia. The casino opened on New Year's Eve in 1990. As of November 2009, it has 200 employees and thousands of guests who visit to try their luck with poker chips, cards and slot machines – all of which make big demands on the management to have a good overview for top service and security.

"First and foremost just like all other casinos, we must conform to special laws and regulations that make strict demands for security and internal procedures. Furthermore, we want to provide the best possible service to our many customers, which includes, among other things, a strong focus on security. For that reason, we have chosen to work with the most advanced surveillance technology available on the market," says Surveillance Manager Jesper Frederiksen, Casino Copenhagen.

This technology is based on Milestone Systems' top-of-the-line IP video open platform solution, XProtect® Corporate. With just a few clicks, an operator controls hundreds of cameras at the same time, viewing live or archived images from different servers simultaneously. In addition, the video material is easily exported when the police want to use it as evidence.

"Previously we worked with analog videotapes, but they were very time consuming, especially if you wanted historical overviews of the recordings. With the IP video solution from Milestone we can find precise sequences from many different angles, scroll back and forth quickly, synchronize time and zoom in for close-ups," says Frederiksen and continues:

"The issues often have to do with who has put a chip on the table at a certain time and for a particular amount. For example, we can scroll back through the images from two cameras and angles at the same time to see video details of a hand at a table with the person that hand belongs to."



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### Human insight is an important parameter



If a dealer wants to resolve a disagreement between two players, he requests the pit boss to check the surveillance on a monitor that is near the playing area. These video images are shown simultaneously in the main control room, where security operators control the surveillance centrally and via radio contact, click to show the exact table or players to conclude the matter in question.

Several operators have the daily responsibility for surveillance of the entire casino. In 2009, Casino Copenhagen also took over full control of security monitoring for the Hotel Radisson BLU Scandinavia. The video surveillance of the hotel, that was already

based on the Milestone software, runs on a separate server, while the cameras are connected to the casino's internal system via a LAN cable. Today, the operators also keep an eye on the hotel's video on a separate display from those for the casino activities. The surveillance incorporates indoor areas, the parking lots and entrances.

"I have worked in this branch for many years, so I know that technology in itself is not enough. The operators must also be savvy about human behavior, to know exactly what kind of conduct to look for. We are very attentive to educating our operators, not just in the art of surveillance, but we also train them in all the games we offer – they have to know them at least as well as our dealers," explains Jesper Frederiksen.

It is not just disagreements and complaints about cheating that the video surveillance helps to resolve: the images are also used to ensure that all internal procedures are upheld. Recordings are used by the police for evidence material, as well. Such evidence has already helped the police a number of times, and this is just as much due to the camera coverage as it is to the training and experience of the casino's operators, confirms Jesper Frederiksen.



### Big demands on system capacity and quality

The Danish company Info-Connect, a certified Milestone Partner, develop and produce specialized software solutions, and have installed the IT networks and surveillance system at Casino Copenhagen. According to director Rasmus Teilmann, it was imperative that the servers and storage systems could handle the huge capacity requirements that are needed for such a comprehensive video installation to function optimally – and this applies not just to casinos, but to any business using so many cameras running at full frame rate and with top image quality.

More than 200 cameras are connected to five servers, each with a storage capacity of 10 TB. This capability is critical for the video evidence the casino archives since the recordings from the gambling tables – according to the law – must be saved for 31 days, while the images from the cash transactions must be kept for 62 days.

Info-Connect has installed a 10 Gb Ethernet network based on fiber optic cables that transmit all the images to the five recording servers, over which all the camera outputs are shared. On each server there is a redundant storage array with 10 TB of storage, so the casino can manage the legal requirements for archiving recordings.

The system runs at full frame rate for live viewing and for all recordings at the gambling tables and cash transactions, but the frame rates are reduced for the traditional areas of surveillance like the doorways. This means that the manned surveillance is seen live at full speed, while the system utilizes as little storage space as possible and top video quality is maintained. Technically, this is set up in separate video data streams, where the live video is shown as MPEG4 or H.264. The archived video images are stored as MJPEG at a frame rate that is determined in the Milestone software for the individual cameras. Frame rates can also be set to speed up on certain cameras based on rules that trigger this automatically for certain events or occurrences like motion in a certain area or at a particular time.

The video is transmitted back to the monitoring stations via the fiber network. All the video encoders record with sound, as well, and this has a special advantage: for example, should a customer ask to put his money on the color red and there is a dispute, the operators can scroll back to determine precisely what did occur. Showing the results quickly resolves any disagreements between the dealers and customers.



Info-Connect has designed the entire surveillance solution and had a close dialogue with Milestone regarding multiple integrations and tools for optimizing the performance. Info-Connect furthermore advises about ongoing upgrades to the newest platforms and features every time Milestone



releases new software versions or modules. In this way, the solution is future-proof for the best return on their investment.

"The existing analog cameras from the previous system are still running but now through the encoders so they can work with Milestone's digital platform. Among other things, we have also installed the fiber network that transmits all the images to the servers, where Milestone archives them, and back to the monitoring stations in the casino, where they can be seen with the Milestone XProtect Smart Client interface. An important parameter was the full frame rate capability that is optimal image quality and speed in the recordings. The system runs completely without any frame loss, which is especially critical when it comes to video from the tables," says Rasmus Teilmann, Director at Info-Connect.

### Innovative investments that pay off



The law requires that all casino guests are registered. When customers arrive at the casino, a receptionist takes a photo via the guest registration software that Info-Connect has developed with the camera system. The video image is shown in the Milestone XProtect Smart Client together with extra information on the customer along with their ticket information in Milestone's XProtect Transact software. This integration makes the surveillance system act as added confirmation with the information on the guests, and reacts with an alert if there is a need for it.

As the newest addition, all customers receive an access chip with RFID (Radio Frequency Identification), so the system shows the guest's photo on the surveillance screen when they go through the entrance to the casino. Security personnel are able to compare the guest's photo on the screen with the existing customer information. The intention is to avoid photo fraud and ensure fast, effective surveillance. The RFID technology is built in to the guest registration software designed by Info-Connect and is fully integrated with the video software via the Milestone SDK.

The casino is also testing the Axis HD camera model Q1755 that has just come out on the market, which is tailored to applications like casinos. Via automatic zoom the camera is able to focus closely and sharply on a chip at the gambling tables, for example, and on motion the camera zooms out again to register who the guest is with that chip. This occurs in one video stream, thereby reducing the number of cameras required to record everything.

Overall, Jesper Frederiksen believes that digital – and intelligent – surveillance systems like this one based on the Milestone platform, are invaluable when one considers the risks that are connected with running a casino:



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"There are professionals out there who have made a career out of cheating both their co-players and the dealers. Our people are trained to spot these cheaters, and when that occurs we are talking about very large amounts of money. That's why it really pays for us to invest in such comprehensive technological solutions - and that also benefits our customers in relation to security and service," says Jesper Frederiksen.

The Ministry of Justice in Denmark has just extended the license for Casino Copenhagen to continue operation for another ten years.

#### **About Milestone Systems**

Founded in 1998, Milestone Systems is the global industry leader in open platform IP video management software. The XProtect® platform delivers powerful surveillance that is easy to manage, reliable and proven in thousands of customer installations around the world. With support for the widest choice in network hardware and integration with other systems, XProtect provides best-in-class solutions to video enable organizations – managing risks, protecting people and assets, optimizing processes and reducing costs. Milestone software is sold through authorized and certified partners. For more information, visit [www.milestonesys.com](http://www.milestonesys.com)



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