Digital Video Comes to the Doubletree SeaTac

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Background

Digital video technology continues to improve at a rapid pace and is undoubtedly the future of CCTV systems. With the assistance of Hilton's preferred CCTV vendor, the Doubletree Hotel – SeaTac in Seattle, Washington is now equipped with this technology. This 800 room multi-building hotel was previously without any CCTV system. This CCTV system installation represents the second largest one time install in an existing hotel in Hilton's history. Only the Waldorf=Astoria's 1998-1999 project, which introduced digital video recording technology to the lodging industry, was larger. As that project was a "first" for our industry, the DT SeaTac now introduces Network Video Client technology, another first by Hilton.

American Dynamics/Sensormatic and their Intellex Digital Video Management System (DVMS), accompanied with the Intellex Network Client remote viewing software provides the latest and greatest in CCTV connectivity. Intellex DVMS is an intelligent digital video management system that combines multiplexing, alarm/event detection and video. Network Client is the remote management software for the Intellex and can connect to unlimited Intellex units via LAN/ WAN. Remote users can view live video from up to 16 cameras from one or multiple Intellex units and view playback video from up to 16 cameras from one Intellex or four cameras from up to four Intellex units.

By using Intellex Network Client, any approved employee with access to a network connected computer equipped with Network Client can log in to the system to watch real-time video or search archived video from any of the four Intellex devices or 63 cameras at this hotel at any time. Whether monitoring the hotel lobby or remote entrances, or searching for video documentation of a slip & fall, this technology is only a click away. For example, no longer does the Security Director have to go to the Security Office to get a videotape. Video documentation from an incident can be retrieved by the Director in the privacy of his/her office, copied to a CD and passed on to the end-user. The Doubletree SeaTac served as the Beta Site for testing the Network Client compatibility with OnQ.

Instead of using dedicated point-to-point coaxial cabling, as is standard practice in traditional analog video surveillance systems, a networked connected video system employs standard LAN/WAN technology as the backbone for transporting the video images via CAT5 wiring. Coaxial cabling has a maximum run distance equal to about 1,640 feet before regeneration is required. It also is time consuming, physically disruptive and labor intensive to install, particularly across multi-floor buildings where cabling between levels is restricted to plenums, ducts or elevator shafts. Since our hotels already use LAN/WAN networks for transmitting data, communications and advanced applications, such as teleconferencing, the network video system technology simply expands this same infrastructure, leveraging its use to remote video surveillance. The resulting networked video solution provides many benefits inherent to this technology, including true integration, use of existing infrastructure, scalability, reduction of

installation costs, information flexibility and unification of data and video technologies into a single infrastructure that is supported by today's and tomorrow's technology path.

Doubletree Hotel SeaTac

When the Doubletree SeaTac Hotel was first examined for CCTV deployment, several challenges were immediately obvious, including; how to equip the three Parking Lot Attendant booths with cameras to record the license plates and the faces of the drivers of vehicles entering the parking lot; and, how to record the images of people entering and exiting the entrances of the remote buildings. The solutions to these challenges were to first determine the goals of the overall system and design the system based on these goals. The goals included: personal identification or the ability to personally identify something within the scene, beyond a shadow of a doubt, and action identification or the ability of the system to capture the events occurring in front of the camera as they actually happened.

Once these goals were clearly defined, the next step was to design the system. With the assistance of the hotel's Directors of Security and Property Operations, a "walk-thru" was conducted. The "walk-thru" accomplished several things, including: determining the purpose of the proposed CCTV system. In this application, the purpose was to cover several locations in the complex at the same time. During the walk-thru each camera's purpose and mounting location was determined. Properly defining the purpose of each camera included weighing the security risk of each viewed area and defining the area to be viewed by each camera. In doing this we first had to examine the lighting, environment and mounting options. Finally, the best locations to install the recording hardware had to be identified. Also, the location to monitor or view the cameras had to be identified. The primary consideration in determining these locations was the distance of cable-pulls, available power sources, ability to connect to the network and environmental controls and space needs.

In the end, it was determined sixty-one cameras were required to sufficiently cover the areas we identified either as safety/security critical or sensitive. The cameras were to be a combination of fixed "box" cameras mounted in outdoor housings and interior mini-dome cameras. To manage the cameras and record and store the recorded images would require four digital video management devices. For this design it was decided the best location for the DVMS hardware was the central computer room and a secure utility closet in one of the remote buildings. Since the monitoring location and the DVMS hardware location is impacted by the distance of the cable can runs, it was decided the optimal solution would be to utilize "remote viewing" software to view live or recorded images from any computer connected to the network and equipped with the remote viewing software.

Based on these parameters, the initial estimated cost (equipment, installation and training) for deploying this system ranged from approximately $131K - $141K. The variable in the cost estimate is impacted by the installation labor costs.

The next step was to arrange site walk-thurs by CCTV providers. At SeaTac, three companies were given this opportunity; American Dynamics (AD)/Sensormatic (Hilton's preferred vendor)

and two local providers, Simplex Grinnell and Triumph. The bids were as follows: Sensormatic Electronics Corp @ $133,960 (without WA Sales Tax @8.80%), Tyco Simplex Grinnell @ $249,002 (without WA Sales Tax @ 8.80%) and Triumph Technologies @ $237,539.35 (Includes WA Sales Tax).

The Sensormatic bid was $100K BELOW that of the nearest competitor. This was attributed to several factors: Sensormatic's cable material cost of $14318.00 or an average of .36 per foot was far less than the average of $1.39 per foot of Triumph. Simplex Grinnell (S/G) included the cost of cabling in the camera, head-end and wire installation costs. This averages to be $101.00 per hour. The use of CAT5 technology resulted in a significant cost reduction. Sensormatic's cost per DVR ($6450.00) was far lower than Simplex Grinnell's cost of ($9126.00 S/G supplied) or the connection cost of $3032.00 per unit on the hotel supplied DVR's. Triumph's DVR cost was $9269 per unit. Sensormatic's cost per camera translates into approximately $2196 compared to S/G's cost of $3659.00 and Triumph's cost of $3894.00. The cost of training on the equipment was built-in to the Sensormatic cost, while S/G charges $6500 for training. Triumph does not list the costs of training, but it must be assumed the training cost was included in the cost of the DVR. The estimated cost savings resulting from locating the DVR units remotely is estimated at $20-$30K.

By "winning" the bid, Doubletree SeaTac and AD/Sensormatic were given two opportunities; be the first hotel to use the Hilton / AD / Sensormatic Master Services Agreement and serve as the "beta" for certifying the Intellex Network Client Remote Viewing Software.

The project was awarded to AD/Sensormatic in the latter part of August with work tentatively scheduled to start the last week of September and conclude the first week of November. With the MSA in place, only a letter of authorization from the hotel to Sensormatic was needed once the Budget Expenditure Request was approved.

As scheduled, the project was completed on November 4, 2005. The next step was to "certify" the remote viewing software. This process involved "loading" the NC software on select hotel work stations to establish compatibility with Hilton OnQ. The certification was scheduled to run for 30 days. At the conclusion of the 30 day period, not withstanding any conflicts, the NC Software would be a Hilton IT certified product.

On November 29, the "Product Certification" officially concluded with flying colors. There were no known conflicts with OnQ.

Conclusion

Use of open standard protocols and networks for communication already enables easy system integration with equipment from a wide range of manufacturers. Because such networked video technology allows any piece to be installed on any part of the network, each piece in the system, regardless of function, only requires a single connector to the network. This provides a higher level of integration with other functions and services to create a continually evolving system.

As with any network, the scalability of a networked security system is only limited by the restrictions of the network. Because security devices can be connected anywhere on the

network, dedicated monitoring or control rooms can be used, but are no longer a requirement. This equates into more available desktop space; the ability to locate the DVMS in an environmentally controlled area; and securing the DVMS from prying hands.

Also, no longer does the Security Director have to go to the Security Office to get a videotape. Video documentation from an incident can be retrieved by the Director in the privacy of his/her office, copied to a CD and passed on to the End-User.