

Launching Digital Surveillance at the Stratosphere

One of Las Vegas' most unique hotel/casinos undergoes a \$3 million hybrid surveillance overhaul. The project includes 1,792 channels of recording as well as POS, slot management, access control, and analytics/people counting integrations.



Photo by Stratosphere Gaming LLC

est amusement rides in the world including its newest attraction SkyJump, a controlled freefall thrill ride 855 feet above the Las Vegas Strip. The 80,000-square-foot casino includes approximately 50 table games, 1,500 slot and video poker machines, a poker room and a race and sportsbook.

Converting the existing tape surveillance system to digital recording was a business decision to improve operations, according to Jerry McCawley, vice president of Corporate Surveillance for ACEP.

Open, Hybrid Platform Sought

When it came to choosing the system for the Stratosphere upgrade, ACEP's McCawley knew they wanted to invest in nonproprietary technology that wouldn't lock them into one sole supplier. They also wanted a hybrid system that would enable them to use existing analog cameras and still be able to add IP cameras as the property expands.

Ultimately ACEP chose a digital recording system from Synectics, with a Pelco CM9780 matrix and Optecom fiber optics.

"While I was a deputy gaming commissioner with Viejas Casino in San Diego, Synectics was recommended by the surveillance department there after they had completed a long-term test of the system," says McCawley. "Synectics' reporting and search features and intuitive, easy-to-use GUI were major factors in our decision."

As part of preparing an airtight bid for the Stratosphere retrofit, TSI Founder/Owner Craig Swankosky conducted a Q&A session with McCawley and his team to determine how they wanted to use the new system. He also toured the site, including all the control and server rooms, to evaluate every aspect of what was specified in the RFP.

The casino already had more than 1,500 working fixed and pan/tilt/zoom

By the Editors of SECURITY SALES & INTEGRATION

The Stratosphere Casino, Hotel & Tower, a Las Vegas icon featuring the tallest freestanding observation tower in the United States, is undergoing a \$20 million renovation by owners American Casino & Entertainment Properties LLC (ACEP). As part of the renovation, Technical Security Integration (TSI) of Lake Stevens, Wash., implemented

a complete digital upgrade of the surveillance and security systems protecting the Stratosphere's gaming integrity and company assets.

The Stratosphere is known for having some of the most unique amenities in Las Vegas, including the Top of the World revolving restaurant, the highest indoor and outdoor observation decks in Las Vegas, and the three high-

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(p/t/z) analog cameras within its existing infrastructure. McCawley knew the Stratosphere would eventually implement IP technology that included 'edge'-based analytics. The Synectics system was ideal for this scenario because it seamlessly connects analog and a multitude of IP options to create the pathway for that migration.

"With a retrofit, there can be a lot of skeletons in the closet. Unless we go to each of the existing rooms and see how things are run, how everything's put together, what kind of infrastructure is in place, we can't truly determine what kind of problems might arise," says Swankosky. "Because of our onsite review we knew exactly what we were getting into, and we could engineer the best solution right from the start."

The new system provides surveillance coverage for the front (public nongaming areas) and back of house (hallways, kitchen, break room), gaming (table games, slots, etc.), parking, hotel, retail and money handling. Since the majority of cameras for the new system were already in place, TSI was responsible for head-end installation only (except for the addition of 15 IP cameras to provide analytics).

To enable use of Synectics' Dataveillance tool, TSI will facilitate integration to the existing access control, intruder detection, point-of-sale (POS), slot management and player tracking systems once the core installation is complete. By using integrated data from these disparate third-party systems and then applying appropriate rule sets, Stratosphere's surveillance operators will be able to identify suspicious behavior or patterns that can help reveal fraud and cheat scams taking place beyond the view of the camera.

"The Dataveillance tool hones the surveillance operator's ability to act as both investigator and forensic analyst by enabling predictive profiling

and alarms of fraudulent events," says John Katnic, COO of Synectics. "With an increasing demand for analytic intelligence in security and related departments, this custom automated tool can help monitor many operational components within a gaming enterprise including access control, crowd management and traffic patterns to name a few."

Creating a Smaller Footprint

The project began in late May 2010 and was completed in just a little more than seven months, a very tight timeline for this size of installation.

Both the surveillance control room and main server room are being renovated to accommodate the new digital system and the property's IT servers. The retrofit also included installation of a computer floor in the main server room, HVAC unit with chiller, UPS, new electrical panel and branch circuits, cage to segregate the surveillance system from IT, and a DuPont FM200 fire suppression system.

Information gathered during the RFP process gave TSI specifics about where the customer wanted to locate equipment, what space was being provided for the system, whether it was to be centralized or decentralized, etc. While mapping out the existing system, Swankosky found that IDF rooms in use with the existing matrix were scattered between five locations.

His original design called for the matrix to be concentrated in two locations. Once TSI was awarded the job, it reevaluated and decided it made more sense to centralize the new matrix in the main server room. McCawley agreed, and ACEP and TSI proceeded.

However, centralizing the matrix in the server room created a new set of issues. David Giannosa, project manager for the Stratosphere, was concerned about available floor space and addi-

tional heating and power requirements now that all the new equipment had to be located in one place. After reviewing calculations for the additional equipment, Swankosky realized some creativity would be required to solve the floor space issues.

"Originally we weren't anticipating accommodating the new UPS and fire suppression system within our floor plan. With the size of the UPS and 36-inch clearances required for access to the UPS and front of our racks, the area available for the new recording system was significantly reduced. Adding to the space issue, the cage used to restrict access to the IT and surveillance areas was being compacted to make room for a handicap ramp," says Swankosky.

As one solution to the space issue, TSI knew they were already using a system with a smaller footprint made possible by Synectics' internal 16-channel PCI-e encoders. These units provide up to 32 channels of 4CIF, 30 frames per second (fps) recording per 2RU networked server. The internal encoders also eliminate the need for additional rack space that is normally required for separate encoder chassis, and they reduce HVAC use and power consumption for a "greener" solution.

When evaluating other ways to recapture space, the Pelco CM9780 matrix and Optelecom fiber-optic chassis didn't offer any additional savings. "We were already using some of the most dense and efficient products available on the market today. If we wanted to fit the matrix into that space, we were going to have to figure out a way to make the room bigger," says Swankosky.

Fortunately, the decision to move the matrix was made before anything was bolted down. The Stratosphere team had already oversized the electrical panel, HVAC and UPS, so the infrastructure for the two additional circuits was in place. After playing with the layout a little bit, TSI discovered that moving the HVAC unit 12 inches down the wall and the cage only 3 inches out accommodated all the equipment and maintained the code clearances required. →

Down to the Wire

To keep the project on track amid the tight timeframe and unique challenges posed by the retrofit, TSI took a proactive approach and coordinated with the Stratosphere's project manager on a regular basis.

"Communication is key with a project of this size," says Swankosky. "I make it a point to check in with senior management to deliver updates on the project status regularly." McCawley added, "The implementation process exceeded our expectations because we would see the integrator here actively working and he would check in with us daily to keep on top of the process."



Photos by Sherry Barnett Photography

TSI's Thomas Swankosky, who has been involved in more than 100 casino system projects, installs the raceway enclosing the cabling from the server room to both the security and surveillance control rooms.



Daryll Mouse of Technical Security Integration (TSI) wires up the paddleboards for Synectics' internal PCI-e 16-channel encoders.

Even though through the years several companies had been contracted to install fiber throughout the property, the condition of the existing fiber was unknown. Therefore, the TSI team went through a rigorous process of mapping, identifying and testing each strand. After this process was complete, reports were submitted to the Stratosphere confirming that no additional fiber was required.

Once the equipment was in place, the cabling process began. Because it was decided early on to take advantage of the looping inputs on the Synectics system, additional cabling was installed between the rooms. This enabled TSI to intercept video signals from the current system, run them through the new system, and then back into the old system. With video feeding to both, they were able to work freely on the new record-

ing system without interfering with day-to-day operations of the casino's surveillance and security departments. It also ensured that approval from the Nevada Gaming Control Board (GCB) could be received as required before committing to a complete system cutover.

Both the surveillance and security rooms underwent a complete redesign. The Stratosphere's existing system required in excess of 50 equipment racks between the surveillance and security rooms. Elimination of the analog recording equipment significantly increased the useable floor space in each of the rooms. The new system required only 11 racks to hold the digital recording system, matrix, and fiber-optic receivers, which were relocated to the main server room.

For the final phase of the project, TSI planned to install the consoles and monitor wall in time for the 2010 Global Gaming Expo in mid-November. Three weeks prior, the GCB was contacted to schedule an inspection.

"We wanted gaming approval before we gutted the two monitoring rooms and installed our consoles. Unfortunately, the World Series of Poker was in town and no agents were available to sign off on the system," says Swankosky.

Despite this delay, TSI kept the project moving and began installation of the

new consoles and monitor wall in advance of formal approval from the GCB. The old consoles are being replaced with new Emcor consoles that provide a large work surface and integrated adjustable LCD monitor mounts.

Synectics' 19-inch LCD monitors were provided for the consoles and new



ACEP Vice President of Corporate Surveillance Jerry McCawley (right) reviews video with Stratosphere Surveillance Manager Angel Burgos at the new supervisor review station.

monitor walls, along with 42-inch LCDs for digital, multiview displays. The existing monitor and control cabling will be fed to the new consoles using temporary jumpers, so the rooms remain functional. Once GCB approves the system, the temporary cabling will be removed and the operators will be free to use the new system.

While the core installation of the Stratosphere Casino's new system is complete, for TSI the next phase of the customer relationship now begins. The multiyear service and support agreement provided by TSI and Synectics, including operator training, ensures ACEP years of reliable use and service from its new digital recording system.

"Through the use of this new system, we anticipate substantial improvement in response time to investigation requests by staff, upper management, the Gaming Control Board and other law enforcement agencies," says McCawley. "And we are looking forward to using third-party system integration and Dataveillance as a valuable investigative tool to help us continue to improve business operations." ■