PIXIM®
EVERY PIXEL TELLS A STORY

Case Study:

Intelligent Video Powered by Pixim® Technology Keeps City Streets Safe and Secure

Birmingham is the largest city in the state of Alabama, spanning 151 square miles and boasting a downtown population of nearly 230,000. Like any major city, Birmingham has its share of crime and vandalism.

To help combat this and provide a safe environment for residents and visitors alike, the city has taken a number of measures including provisioning the installation of 40 video surveillance cameras throughout the metropolitan area.

Continued on back

VideoIQ is the inventor of the world's first intelligent security cameras and encoders with built-in video recording. The VideoIQ iCVR combines automated event detection, a built-in DVR and integrated video management into a single solution – all driven by next-generation video analytics.

VideoIQ is a Pixim Brand Partner dedicated to producing industry-leading enterprise video capture solutions based on Pixim's award-winning Digital Pixel System® technology.

Choice and Installation

In early 2008, the mayor's office hired systems integrator ION Interactive Video Technologies to install surveillance cameras in various outdoor locations across the city. ION specializes in IP-based security solutions for businesses and organizations of all sizes, including municipalities.

The city also tapped ION for its trained professional agents who remotely monitor all of the installed cameras from the company's own control center. Agents instantly notify the Birmingham Police Department of any potential threat or suspicious behavior, and the police immediately step in to respond and handle the situation.

As part of the installation, ION chose to work with VideoIQ, the manufacturer of iCVR, an intelligent video surveillance camera with a built-in DVR. iCVR incorporates Pixim's Digital Pixel System® technology. Pixim's technology works well for video analytics because Pixim's chipsets produce superior images that boost the overall performance of VideoIQ's video analytics software in the following ways:

- Wide Dynamic Range - Digital Pixel System technology provides an ultra-wide 120 dB dynamic range. For the purpose of analysis, intelligent video must produce a high-quality image with correct exposure for the entire scene (i.e., both highlights and shadows), high color fidelity, sharp features with maximum detail, few or no image artifacts, and low video noise.
- Accurate Color - Cameras using Pixim technology can reproduce colors as they appear in nature, even under extreme lighting conditions. This color accuracy allows for better forensic analysis of captured images after the fact.
- High Signal-to-Noise-Ratio (SNR) – Digital Pixel System technology provides images with low noise, because the conversion to digital format takes place at the pixel level and can be controlled independently for saturation.
- Lack of Video Artifacts – Pixim's technology delivers cleaner images without interlace or motion artifacts, vertical smear, and pixel blooming (over-saturation).
- Flexible Placement - The Digital Pixel System sensor converts captured light into digital format at the source of capture. As a result, it improves both live (camera-based) and post-processing (server-based) video analytics.

A Crowd Pleaser

ION initially chose the iCVR for its ability to monitor for and detect crowds, something the city wanted to keep a particular close eye on.

"A large crowd can often accompany trouble and analytics can automatically detect when a certain number of people are congregating in a specific area. This gives us advance warning of a potential problem and enables the police to respond before an incident takes place. Additionally, with built-in audio over IP, our remote guards can use loudspeakers to inform intruders they've been detected – driving them off and preventing crime," said Welden.

This system is also able to capture images and store them at the edge of the network. The iCVR intelligently controls storage resolution based on what it sees; a potential threat such as a car in a restricted area or someone lurking near a store front is recorded at the highest possible resolution and quality, alerting guards and providing them with the ability to quickly ascertain the situation and respond appropriately. During times when nothing is taking place, the camera captures images at a lesser quality, allowing the built-in 80 GB hard drive to store one to two months worth of video and ultimately saving money. Pixim's all-digital technology plays a key role as well. Sensors based on Digital Pixel System technology yield more highly compressed images which can also dramatically reduce the costs of storing video.

The cameras have been up and running in the city since August 2008. Throughout 2009 more cameras have been installed in the downtown area, replacing the city's older cameras that have limited functionality.

Weldon said, "The City of Birmingham places the safety and security of its residents and tourists as its foremost priority. A proactive approach to security combined with the power and accuracy of the security solution provides a level of security protection we are proud to deliver."

VIDEOIQ®

DIGITAL PIXEL® SYSTEM FROM PIXIM

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