

THE LARGEST 360° CAMERA DEPLOYMENT IN MASS TRANSIT HISTORY



SENTRY360
US-Based Manufacturer of IP Surveillance Cameras



Sentry360, a U.S.-based manufacturer of advanced Ultra HD surveillance cameras and systems, has successfully deployed the largest 360-degree surveillance camera system in mass transit history—helping the Chicago Transit Authority (CTA) to reduce violent crime and robberies by up to 35 percent.

When Chicago Mayor Rham Emmanuel and CTA President Forrest Claypool set out to further enhance security for the massive Chicago public transportation system—the second largest in the United States with 1.7 million riders daily—they relied on Sentry360, a global company based in nearby Plainfield. The CTA was looking to add additional video surveillance coverage to its existing fleet of railway cars, but found they needed more than what traditional video surveillance cameras could offer.

“Our end users were increasingly frustrated having to view video across incompatible video systems,” said CTA Director of Technology Engineering Herb Nitz. “For years, we had searched for open and scalable IP video solution suitable for mobile fleet use that were compatible with our current fixed video management system. Our initial goal to find an IP camera that could operate in a challenging mobile environment led us to Sentry360.”

The CTA began work with Sentry360 in 2010 as part of a pilot program funded by a Department of Homeland Security grant. The CTA had Sentry360 retrofit the existing rail car fleet with an onboard video surveillance system. Because the cameras would be exposed to harsh environmental conditions, such as extreme heat/cold, humidity, and vibration, as well as unregulated electrical power sourced from the 600VDC third rail, the pilot program focused on the effect of these dynamics relative to the video technology. With over 800 potential rail cars to retrofit on a full-scale, the CTA needed a technology solution that was not only environmentally robust, but one that also maximized the field-of-view with minimal cameras per car, supported by an open-standards IP architecture that allowed for integration with other systems.

This is where Sentry360’s FullSight 360° cameras with exclusive dewarp™ SDK capability impressed the CTA.

“Traditional video surveillance cameras have an inherent flaw: blind spots,” said Sentry360 Chief Executive Officer Thomas Carnevale, “If a fixed field-of-view camera is pointed left and an incident occurs on the right, then the camera is useless.”

With Sentry360’s 360-degree surveillance camera dewarping™ technology, however, users achieve full 360-degree images. Sentry360 cameras integrate with an existing video management software (VMS) product via a software development kit (SDK) to record and display the full 360 view or “fisheye” image. The image is then corrected in live or playback with full retrospective pan-tilt-zoom (PTZ) in all directions, providing hindsight in full 360 degrees.

“The Sentry360 SDK is what separates us from those who try and compete but fail because they are unable to achieve the level of integration we have with the top VMS developers in the security marketplace,” said Carnevale.

To achieve full coverage within a CTA rail car, up to six legacy fixed field-of-view cameras would be required—which also means six recorded video streams. During the extensive multi-year pilot program evaluation, however, Sentry360’s solution matched that coverage, with no blind-spots, using only two Sentry360 FullSight™ 360-degree fisheye ultra HD cameras per rail car. The ceiling mounted, low-profile, FullSight™ cameras have an omnidirectional vantage point, giving security investigators a complete story of a potential incident even in the heavy traffic of the transit system.

The Sentry360 cameras integrated into the CTA’s existing VMS platform, made by Teleste Corporation, providing an all-seeing eye and delivering full coverage in every rail car, while substantially reducing the bandwidth for recording and streaming to two video streams and retaining all virtual PTZ functionality for both live and post-recorded video.

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FS-IP3000



integration far exceeded our expectations for any IP mobile camera solution,” said Nitz.

Due to the success of the pilot, the CTA retrofitted the Sentry360 solution to the remainder of the fleet. The unintended efficiency of the design allowed the CTA to add two additional 360-degree cameras per car, one within the railcar to provide redundancy for the initial two-camera solution and one outward facing camera to view the right-of-way as the train travels down the tracks. Elimination of fixed field-of-view cameras created extra recording capacity within the Teleste VMS. This allowed for the purchase of additional 360-degree cameras while keeping the project under budget. The final project included 3,600 Sentry360 cameras on nearly 900 rail cars—representing the the largest 360-degree surveillance camera system deployment in mass transit history.

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-Herb Nitz, CTA Director of Technology Engineering

The partnership has been an incredible success: the most recent figures reveal that the CTA has reduced crime in all categories for the first half of 2014 (see sidebar).

“This CTA Sentry360 project sets a new standard in public transportation video surveillance,” said Carnevale, “Our solution will be examined and modeled in mass transit systems all around the world. This deployment has proven to be the most sophisticated rail car surveillance camera system in operation today, with a revolutionary American-made product solving real world problems for one of the nation’s largest mass transit systems.”

CTA & SENTRY360 – SUCCESS IN ACTION

The numbers are in and the massive—and historical—deployment of Sentry360 360-degree HD cameras has helped the CTA reduce crime in all categories for the first half of 2014.

According to the CTA, robberies on trains are down 35 percent and serious personal and property crimes are down 22 percent when compared to the same time period last year.

Chicago Transit Authority Crime Reduction

(First half of 2014 compared with the first half of 2013)

- Violent crimes – DOWN 34%
- Robbery – DOWN 35%
- Aggravated Assault – DOWN 6.4%
- Aggravated Battery – DOWN 48.3%
- Larceny/Theft – DOWN 18.4%

About Sentry360: Since 2004, Sentry 360 has been a leading developer and manufacturer of application driven multi-megapixel surveillance cameras and video management software for global commercial and government markets. Sentry360’s exclusive and innovative technology provides high-resolution surveillance cameras with no moving parts that can see a 360-degree, all-encompassing field of view with no blind spots in live or recorded video—providing a far superior and more efficient security solution over traditional fixed cameras.

Visit www.sentry360.com or call 1-800-261-2707 for more information.

