

Capacity and Speed for Video Surveillance



“The older communications technology was at the end of life and we were vastly expanding the number of cameras beyond the original scope and radio capacity. The Cambium solution meets our needs and is a more cost effective solution.”

- CAPTAIN DAVID FLEET, DEPUTY DISTRICT COMMANDER, HILLSBOROUGH COUNTY SHERIFF'S OFFICE

Challenge

VIDEO SURVEILLANCE TECHNOLOGY PROVIDES THE BEST LEVERAGE TO IMPROVE PUBLIC safety while staying within budget. While it is not feasible to put a deputy on every corner, video surveillance in effect puts a vigilant watch on every corner around the clock. The Hillsborough County Sheriff's Office (HCSO) in Tampa, Florida had installed video cameras several years ago that were connected by a mesh-based communications infrastructure. Over time, as more (and higher HDTV resolution) cameras were added to the network, the system was unable to provide the performance required.

HCSO's Eye on Crime project enables deputies to keep an eye on trouble spots, monitor streets for emergency situations, and provide residents an increased feeling of safety. Funded in part by a federal grant, the more sophisticated cameras include pan, tilt, zoom capabilities and monitor a 360-degree field of view. Multiple cameras are installed at an intersection, giving officers the ability to view traffic intersections and parking lots and to integrate information with Automatic License Plate Recognition (ALPR) systems and “shot spotter” systems that triangulate gunshot sounds to determine the exact location of an incident.



“Our deputies need ready access to information in real time,” says Captain David Fleet, HCSO Deputy District Commander. “The older communications technology did not have the bandwidth to support multiple cameras and multiple systems. Last year, video surveillance was a part of 1,400 cases, and we need a system that supports high-density, high-capacity cameras all the time.”

Solution

HCSO LOOKED AT SEVERAL DIFFERENT solutions, and found that Cambium Networks provided the high throughput they needed. In addition, as elements are added to the network the system will continue to provide the low-latency connectivity needed.



“Our deputies monitor the video and need to be able to pan and zoom the cameras when they

sense a crime is about to happen. We needed a highly reliable, high-capacity, low-latency connection to have the camera respond immediately, and we now have that,” says Captain Fleet.

The Eye on Crime project prioritized the need for surveillance in two areas: a neighborhood bordering the University of South Florida campus, and another major urban area to the south. SiteSecure (www.sitesecond.com), and Miller Critical Infrastructure Solutions (www.mecojax.com), specialists in design, construction, and maintenance of IP-based security solutions, worked with HCSO and Cambium Networks to design an all-wireless connectivity infrastructure for the project.

“In these situations, image quality is absolutely essential,” says Craig Bowman, Senior Project Manager from SiteSecure. “Frame loss, jitter, and latency – any of these can result in poor-quality images. With a Quality of Service (QoS) enabled system such as the Cambium Networks solution, the system reduces frame loss and operates at consistently low latency. It is designed to provide consistently high quality images.”

SiteSecure used the PMP 450 wireless broadband technology. The communications infrastructure for this first phase of the project connects 83 video surveillance cameras.

PMP 450 and 450i Solutions	
Frequency	2.4, 3.5, 3.65, 4.9 – 5.9 GHz
Throughput	125 Mbps in a 20 MHz channel
Synchronization	GPS Synchronization

Results

THE NETWORK WAS INSTALLED WITH NO PROBLEMS AND HAS

performed without error through heavy late summer storms. Where there were multiple cameras and license plate readers at an intersection, deputies at the control facility were able to zoom in and identify suspects and key witnesses effectively.

This pilot project in the Eye on Crime initiative is considered a success for improving public safety and is being expanded to other priority locations in the HCSO area of responsibility.



“Our deputies are able to get on the network and use the information right away,” says Captain Fleet. “This information helps them prepare for and make the best decisions on how to deal with a situation. The public appreciates the system, they see that we take their safety seriously and will respond.”



About HCSO Tampa

hcsotampa.fl.us

The mission of the Hillsborough County Sheriff’s Office is to serve, protect, and defend the community while preserving the rights and dignity of all. Covering a 909-square mile area on Florida’s Gulf Coast. District 1, which is where the Cambium radios and eye on crime camera system are located, covers 149 square miles. The HCSO is comprised of approximately 4,000 employees and District 1 has been allocated 233 of these positions.

Why HCSO Tampa chose Cambium Networks:

- **High quality of service** - to provide a consistent level of service as new cameras and capabilities are added on to the network.
- **Increased bandwidth** - to meet the demand of higher speeds and more services.
- **Low Latency** – to enable rapid camera response to immediately zoom in on incident scenes.