



# Wireless Video Surveillance Supports Policing in Mexican City

Wireless mesh video surveillance platform is enabling San Luis Potosí to fight crime in real time, more effectively and precisely.

## EXECUTIVE SUMMARY

**Customer Name:** The city of San Luis Potosí

**Industry:** Public Sector

**Location:** Mexico

**Size:** 700,000 residents

### Challenge

- Improve physical security of citizens
- Significantly increase situational awareness of police
- Enable fast, real-time response

### Solution

- Cisco Video Surveillance Manager, providing access to live and archived video
- Wireless mesh network, supporting surveillance cameras
- Integrated third-party analytics and applications, such as license plate recognition

### Results

- ‘Force multiplier’ that greatly extends reach and effectiveness of police force
- Higher-quality forensic evidence
- Better co-ordination between federal, state, and local police teams and resources

## Challenge

According to a survey conducted by the magazine *The Investor*, the Mexican city of San Luis Potosí is one of the three best places to live in Mexico.

Situated in North Central Mexico, the city is home to about 700,000 people. Occupying an area of some 557 square miles, it is about the same size as Seattle. The downtown is one of plazas, colonial architecture, and charm.

Beyond the center, a modern industrial city has begun to grow, in part thanks to its location at the heart of the “triangle” formed by the country’s three largest cities: Mexico City, Guadalajara, and Monterrey.

However, like many other mid-sized cities in Mexico, San Luis Potosí recognized the potential for crime to spill out from the major cities towards it, and decided to look at ways in which to deter would-be criminals, and to better safeguard citizens and visitors.

There is no simple or single answer to crime, and the city’s strategy has included some well-understood initiatives, from providing better training and equipment to the police, to fighting corruption. Recognising, however, that it would be impossible for the police to be physically present on every street, every single minute of every day, the city sought a more practical solution.

Its response has been to invest in an advanced video surveillance solution, integrating video analytics and other applications, running over a wireless network. Ricardo Galindo

Ceballos, Public Safety, IT director for San Luis Potosí, says: “Video surveillance is a force multiplier for the municipal Public Security Strategy, because it improves the efficiency and effectiveness of the officers on the ground. It allows an early assessment of the situation, enabling more informed decisions to be taken when sending forces to the scene of the incident.”

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—Ricardo Galindo Ceballos, Public Safety, IT Director, San Luis Potosí

## Solution

After examining a number of surveillance options, the city selected a solution comprising a Cisco® Wireless Mesh network and the Praetorian Intelligent Surveillance system from Cisco ecosystem partner, L3 Communications.

The decision to go wireless meant that installation caused very little disruption to the city’s infrastructure. Importantly, the solution was designed to provide a flexible, robust, and secure platform optimized for exchanging information, including video, in real time, both then and in the future.

The network comprises two layers. The backbone operates at 4.9 GHz, the frequency assigned to public safety communications to prevent interference with other systems. The access layer, operating at 2.4 GHz, connects to wireless cameras and other devices. Mexican law enforcement is divided between federal, state, and municipal entities, and the network connects not only to all the city’s police stations, but also to the state command and control center to help ensure information is shared effectively and quickly.

Praetorian is designed to provide superior operational readiness, through intelligent video and sensor systems that provide greater situational awareness and control, common operational environments, and 24-hour computerized monitoring. As an open-architecture and scalable system, Praetorian integrates with many other surveillance technologies, including commercial off-the-shelf (COTS) PC hardware and software.



Cisco Video Surveillance Manager sits at the center of the solution, managing video streams from cameras to either short-term storage or longer-term network storage archive facilities, or directly into the Command Center to be viewed by operators in real time.

Unlike conventional systems, which overwhelm operators with multiple sensor and camera feeds on large banks of video monitors, Praetorian, empowers users to see the total picture, understand real-time surveillance information, and act preemptively to stop or contain emerging threats.

For example, the system at San Luis Potosí contains a map of the city and has a situational awareness feature that enables operators to view the progress of a subject, be it a person or a vehicle, block-by-block. Views from different cameras can be stitched together to give an operator a view of the entire street as the vehicle moves along it. And, thanks to the integration of a license plate recognition (LPR) application from another vendor, the operator can even zoom in and run a check against the central vehicle database.

Currently, some 180 cameras have been installed. To be fully effective as a deterrent to crime, however, cameras not only need to be placed at key locations; they also have to be visible to the public and potential wrong doers. The public’s support for the solution was so great that some families even made the outside of homes and storefronts available to the government for camera placement.

Video surveillance technology is not widely used in Mexico, and the solution was implemented in small phases to help ensure any issues could be understood and addressed as quickly as possible. It was particularly important to train the three Command Center operators and the team's supervisor in the feature-rich environment, so that the benefits of the system became clear to everyone as soon as possible. Forty-three cameras were deployed in phase one, followed by 72 in phase two, with another 50 implemented in phase three. An additional 20 LPR cameras are already in place.

## Results

The video surveillance solution has significantly increased the city's ability to spot incidents and react quickly to them. Previous generations of video surveillance systems typically could only be used for forensic police work, which involves going back to stored images or video to see if evidence can be found regarding a crime that is known to have taken place. Frequently, poor quality images meant that results were inconclusive or inadmissible.

In contrast, not only does the new solution deliver far more useful forensic evidence, the combination of higher quality images, analytics, and the way in which the information is displayed, means that operators can send resources to an incident as it is happening. In some cases, they can even anticipate crime before it happens. For example, the system can automatically recognize and send an alert when cars are doubled parked. Often criminals will block another vehicle to help them prepare the way for a fast escape.

"The video surveillance solutions make it possible to minimize the disruption to roads caused by demonstrations or road traffic accidents, thefts from cars or passers-by, and from gang activity. It also enables a greater number of criminals to be caught red-handed," says Ceballos. "They allow the optimization of police resources. A visual verification can be made without putting the officer at risk, and operations can, therefore, be carried out more securely. They also assist in assessing how many and what kind of support personnel are required on the scene and with what equipment."

The solution has also helped to save lives, such as when a Command Center operator was able to help direct emergency services to a young woman very seriously injured in a road traffic accident. Not only were the emergency services given the best route, based on what was happening on the streets, the operator was able to brief them better about the accident and what they might find there. Wireless devices, such as handheld, personal digital assistants (PDAs), can also link directly to the network, its applications, and the Command Center.

The solution is enabling the city to develop new and innovative strategies to better protect citizens. It is currently piloting the concept of a "geo-fence." Arrays of LPR and fixed cameras, capable of night vision, have been placed at the five main city entrances and exits. The concept, developed in co-operation with the federal police, is that cars can be checked and, if necessary, tracked by cameras with appropriate follow-up coordinated by the Command Center. Five police cars, with mobile access to the network, have also been equipped with LPR and Global Positioning Satellite (GPS) facilities to improve response capabilities.

Another significant benefit of the wireless mesh network is the flexibility that it provides. A well-understood phenomenon is that fixed cameras systems will tend to drive crime to other areas outside the surveillance coverage area. The ability to easily take a camera down and erect it at another site, however, is helping to throw criminals off balance. It also enables resources to be better targeted, such as providing coverage for the duration of a six-week arts festival in the city that attracts participants and visitors from across the country.

**"The video surveillance system performs three functions: the first is deterring crime, secondly, people feel safer, and thirdly, it provides evidence when a crime is committed in order to identify those responsible."**

**—Ricardo Galindo Ceballos, Public Safety, IT Director, San Luis Potosi**

Although each of the applications running over the network delivers benefits, the real power of the solution is in its ability to integrate the various elements to create a holistic and feature-rich environment to combat crime and improve the safety of every citizen and visitor. It brings together the different pieces of the jigsaw to enable a clearer and broader picture to emerge, so that resources can be directed with greater precision, and the police and emergency services have the information they need to do their jobs, where and when they need it.

“Technology has become a way for citizens to feel that more attention is being paid to their complaints, and this improves their perception of security. The video surveillance system performs three functions: the first is deterring crime; secondly, people feel safer; and thirdly, it provides evidence when a crime is committed in order to identify those responsible,” says Ceballos.

### Next Steps

San Luis Potosí is extending the coverage of the video surveillance infrastructure with more cameras situated in public areas. It is also introducing “panic buttons” in areas popular with citizens and tourists. Day or night, concerned people can hit a button and speak directly to a Command Center officer, who can then respond immediately to the situation.

The sharing of biometric data, such as fingerprints, is another initiative being developed with the federal authorities, and the plan is to be able to capture and share information at all the police stations in the city over the wireless mesh network and potentially nationwide.

### For More Information

To find out more about the Cisco's Government Solutions go to: [www.cisco.com/web/strategy/government/index.htm](http://www.cisco.com/web/strategy/government/index.htm)

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- Cisco Catalyst 3750 Series Switches
- Cisco Catalyst 2960 Series Switches

#### Network Management

- Cisco Wireless Control System
- Cisco Wireless Control System
- Cisco Physical Security Media Servers
- Cisco Video Surveillance Storage System

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- Cisco 4404 Wireless LAN Controller
- Cisco Aironet 1522 – dual band Mesh access points
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