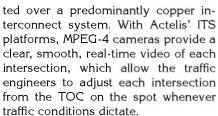# APPLICATION STORIES

WITHOUT THE THORNS

City of Roseville attempts to remove a stickler in the form of congestion

Roseville, Calif., is located north of Sacramento and has a population of over 100,000 where traffic is the third-biggest issue facing city management. The city is growing rapidly, along with subsequent traffic problems. The existing traffic-control system supported basic traffic signaling, where the traffic operations center (TOC) could not see the intersections in real-time. Congestion due to accidents, ordinary commute times or special events couldn't be managed and left the population frustrated. All intersections in the city needed to be upgraded with Ethernet-based traffic controllers, pan-tilt-zoom cameras and a broadband transport system in order to implement an IP-based advanced traffic management system (ATMS) to improve traffic flow throughout the city to benefit residents, business owners and tourists.

Copper cable connected the traffic-control system, while fiber was limited to new development areas. The entire system was upgraded to an extended-reach Ethernet connection, creating a robust yet affordable wide-area network to carry data and video back to the TOC using "Ethernet over Copper" solutions from Actelis Networks. In more than 85-90% of circumstances, the municipal area does not have a fiber-based network infrastructure, which is required to accommodate Ethernet-based services. However, using "Ethernet over Copper" technology from Actelis provides additional benefits such as switching capability, seamless integration with fiber, extended reach, and a high-speed, reliable transport system.

The initial goal of the project was to monitor traffic at major intersections throughout the city, adjust timing of intersection lights to allow smooth traffic flow, provide a coordinated traffic corridor for special events, solve citizens' complaints regarding intersection lights and use the traffic controllers as a scan function for real-time data. These functions were transmitted over a predominantly copper interconnect system. With Actelis' ITS platforms, MPEG-4 cameras provide a clear, smooth, real-time video of each intersection, which allow the traffic engineers to adjust each intersection from the TOC on the spot whenever traffic conditions dictate.

The long-term goal is to provide clear corridors for emergency vehicles, post dynamic messaging signs for traffic and Amber alerts and allow complete coordination with surrounding communities, counties and state transportation agencies.

By upgrading their current system to an IP-connected, Ethernet ATMS system, Roseville was able to provide a complete GIS map of its interconnect system, smooth traffic flow during

MPEG-4 cameras provide a clear, smooth, real-time video of each intersection, allowing engineers to make intersection adjustments.

commute, events or emergencies, define a coordinated corridor for special events and quickly respond to citizens' complaints. Roseville also was looking for a flexible strategy that would be able to accommodate as-yet-unanticipated needs for surveillance and traffic management as well as enable a city-wide wi-fi network that would be able to accommodate additional services and communications, as municipal departments moved to integrate their operations with the new system.

"Ethernet over Copper" brings intelligent traffic control and monitoring to the municipal government to enhance public safety and alleviate many of the concerns for smooth, efficient traffic flow.

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