LANTRONIX®

Systems Integrated

The Challenge:	Help the County of Los Angeles network-enable traffic light controllers to allow remote management, diagnostics and control.
The Solution:	Propose a cost-effective approach using the Lantronix XPort® to create a wireless Ethernet backbone to allow traffic controllers to communicate securely over the Internet.
The Result:	SI's approach resulted in a cost savings of more than $6,000 per month, an achievement that earned the County a Top Ten Quality and Productivity Award.

The Challenge: Getting the Green Light from the County of Los Angeles

For more than 30 years, Systems Integrated (SI) has focused on solving complex technology problems across applications in power, water and other utilities. The company has gained the experience and knowledge necessary to accurately assess its customers' needs and choose from the broadest assortment of technical options to derive the most effective solution.

Recently, SI bid a project from the County of Los Angeles Department of Public Works to network-enable several hundred traffic light controllers to enable remote management, diagnostics and control. The overall project objective was to allow county officials to better manage the flow of traffic, especially during rush hour – minimizing congestion, delays and fuel emissions.

The Solution: Lantronix Helps Pave the Way to Easy Street

The original RFP called for an Ethernet-based radio scheme incorporating a radio-to-T1 connection for every eight intersections. Accustomed to projects that require various generations of existing equipment to be integrated with new technologies, SI knew that there was more than one way to navigate the issue. The company gained attention by proposing an alternative solution: Create a wireless Ethernet backbone that would allow all the intersections — whether camera-based, controller-based or both — to communicate over the same device to transport data over the Internet.

> "One of the keys to our success is the ability to walk in and very quickly get new capabilities up on legacy equipment. Lantronix is a key element to that."
>
> – John Holbrook
> General Manager,
> Systems Integrated

Having worked with Lantronix in the past, SI knew their networking product lines could provide an affordable way to network-enable the proposed traffic light control systems with a serial-to-Ethernet connection. After reviewing several options, SI decided to integrate the Lantronix XPort, a compact module that can Web-enable virtually any electronic device.

A board-level footprint. The County of Los Angeles' traffic system cabinets are very small, requiring a size-sensitive deployment. Smaller than a human thumb, the XPort incorporates all essential networking features, including a 10Base-T/100Base-TX Ethernet connection, proven operating system, an embedded Web server, e-mail alerts and a full TCP/IP protocol stack.

Seamless security. Because hackers breaching the system could potentially wreak havoc on LA County's traffic patterns, security was a major concern. Fortunately, the XPort's 256-bit NIST-certified AES encryption exceeded the County of LA's security requirements.

Lower cost to implement. XPort removes the complexity of designing network connectivity into a product by incorporating all the required hardware and software inside a single embedded Ethernet module. This ease of implementation allowed SI to reduce the time and cost of development, a savings they were able to pass on to the County.

The Results: Opening Avenues to Future Success

With the help of the Lantronix XPort, SI won the project and was able to embed both network connectivity and intelligence into LA County's traffic lights. Traffic officials are now able to monitor intersections from a single location, carefully analyze traffic patterns and strategically manage congestion during rush hour or any other time of day – improving traffic flow and reducing fuel costs and emissions.

Using a single radio system instead of multiple radio systems resulted in a substantial cost savings. With 200 intersections on one T1 (as opposed to eight), the County saved upwards of $6,000 per month. Leveraging SI's wireless approach, the Department of Public Works was able to complete the project for 38% less than the cost of a solution using telephone lines and 78% less than a fiber optics-based solution. This achievement helped the Department of Public Works earn a Top Ten Quality and Productivity Award from the County of LA.

Lantronix is a key resource for SI's continued success. Says General Manager John Holbrook, "Whenever we pick up the phone to call Lantronix, they're there to help. But we don't have to pick up the phone much. Their products just work."

SYSTEMS INTEGRATED

Systems Integrated (SI) has been at the forefront of technology for over 30 years, delivering solutions that put its utilities customers in control. SI's experience runs the gamut from small, single-site or pilot projects to large-scale engagements; water and electrical systems to traffic management; covering thousands of points over miles of area across the United States, Asia and Latin America.

QuickLink:

For more information on the Lantronix XPort, visit lantronix.com/device-networking/embedded-device-servers/xport.html

LANTRONIX®

Think it. Connect it. Control it.

15353 Barranca Parkway
Irvine, CA 92618 USA
Tel: (800) 526-8766

Tel: +1 (949) 453-3990
Fax: +1 (949) 450-7249
www.lantronix.com