Traffic Signal Control System in Wichita, Kansas, USA

Project Introduction

In 2002, the City of Wichita approved a program for regional Intelligent Transportation Systems (ITS) projects. One of the projects consisted of upgrading existing traffic signal systems. Part of this project was to obtain network connectivity between the traffic signals. This required network hardware, including managed network switches to monitor, regulate, and switch network traffic in each traffic cabinet. The Kyland SICOM3170 Traffic Switch was selected in 2010, after an extensive selection process. It is the only traffic switch designed to operate in the traffic detector chassis in the market.

Company: Wichita City Council
Location: Wichita, Kansas USA

System Requirements

- Network connectivity between traffic signals requires managed traffic Ethernet switches to monitor, regulate, and switch network traffic in each traffic cabinet
- The Ethernet switch should have fiber Gigabit uplinks for broadband connectivity
- The Ethernet switch should be with field hardened design meets NEMA-TS2 standard
- Energy efficient solution is required in order to save power consumption and extend the life span of the entire system

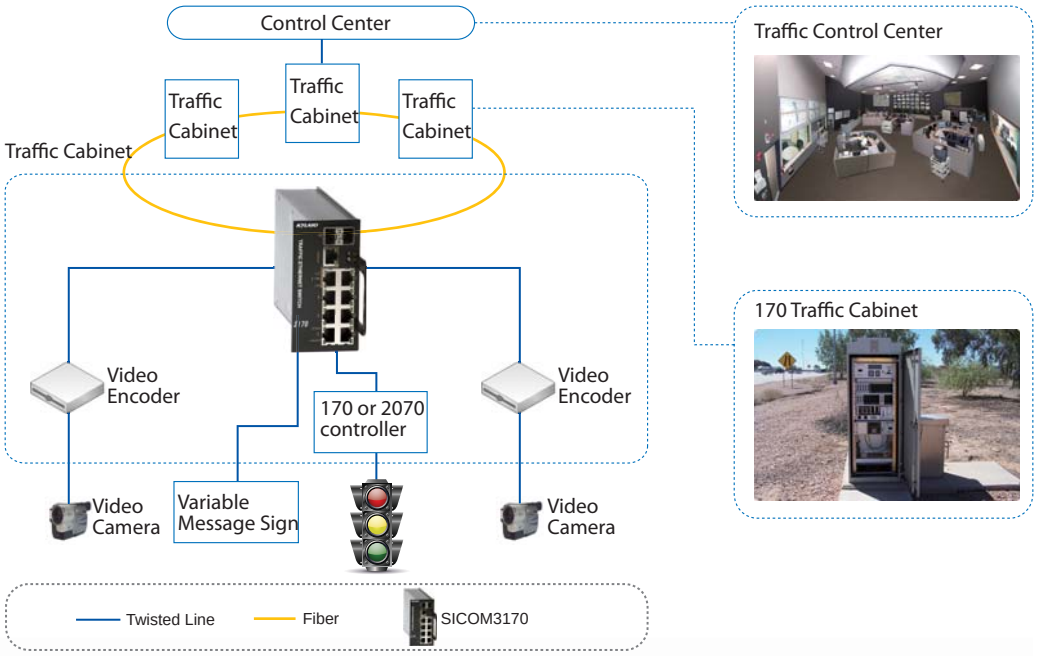
Kyland Solution

In July 2010, Kyland SICOM3170 Switch was selected by the City of Wichita, Kansas. The multi-million dollar Intelligent Traffic system project has installed 500 Kyland SICOM3170 Ethernet Traffic Switches. The SICOM3170 switch designed, which is designed for use in a detector rack, will save the City of Wichita over $20,000.00 annually in electricity costs alone compared to other products. The SICOM3170 uses just 7.2 watts in operating power. The Intelligent Traffic Project puts the City of Wichita in the forefront of the GREEN REVOLUTION and 21st Century Traffic Systems.

The "SICOM3170" is a Managed Ethernet Traffic switch that offers a significant increase in the application and bandwidth capabilities of the highly configurable Kyland SICOM line of Managed Industrial Ethernet switches. This is the perfect traffic switch for the deployment of bandwidth-intensive applications such as internal and external video surveillance at traffic intersections and regional control systems. This network switch can be installed in less than 1 minute into any traffic cabinet with an open dual slot in a detector input chassis. Clean filtered power is provided directly from the back-plane of the detector chassis and eliminates adding to the mess of additional power supplies and power cables within the traffic cabinet.

The SICOM3170 uses Kyland's powerful Kyland Industrial Operating System (KIOS) software that provides unsurpassed management, capabilities, security and redundancy. The KIOS software is designed for ease-of-use, offering features that include a GUI interface, secure web management, SNMP v2/v3 management control, 802.1p QoS Packet Prioritization, Port-based VLANs, and IGMP snooping and for managing IP multicasts. Kyland supports RADIUS and TACACS+, port security, a choice of multiple redundancy options including Dual Homing, Link-Loss-Learn, Rapid Spanning Tree (RSTP), as well as Kyland's rapid-ring-recovery DT-Ring and DT+ Ring products. The product also comes with KyVision Management software

System Diagram



"The SICOM3170 Traffic Ethernet Switch is the best switch on the market - Bar None. It saves energy, inexpensive to operate, is the fastest, and out performs ALL the other switches. Fantastic for crowded traffic cabinets" -DOT Testing Engineer

Why Kyland?

The only traffic switch designed to operate in the traffic detector chassis. It fits within the traffic detector chassis, eliminating the need for extra power supplies.

The SICOM3170 Traffic/ITS Ethernet switch packs a powerful set of features into an industry-standard 4-channel vehicle detector form factor. This Green Ethernet switch uses an astonishingly low eight watts or less, allowing it to be hot-plugged into any CalTrans input file (or NEMA TS 1/TS 2 detector rack) for rapid and reliable field deployment.

Quick installation in the input file/detector rack eliminates the unreliability of external power supplies, the problem of finding filtered AC power within the cabinet, and the difficulty of a clean physical installation in today's crowded traffic cabinets.

As the premier unit in the Traffic/ITS line of products, the fully managed SICOM3170 is perfect for the deployment of video surveillance, controller communications, DMS signs, and other Traffic/ITS applica-

SICOM3170

- Supports 2 One Gigabit - SFP Ports for broadband connectivity
- Supports 1 RJ45 10/100/1000 Port
- Supports 7 RJ45 10/100 Ports
- Available for both 12Vdc and 24Vdc cabinets (12Vdc is for NEMA cabinets)
- Easy Installation (slide it into the chassis and it immediately powers up)
- Operating Temperature: -40 to 85°C (-40 to 185°F)
- No Power supply or electrical connections to worry about (Saves time & $$ on installation costs)
- Ultra-Low Power Consumption, the switch uses less than 8 Watts
- Supports both Rapid Spanning Tree Protocol (RSTP) and DT Ring for
- Redundancy
  Compatible with the interface requirements in the Caltrans TEES (170/332)
- specification
- RoHS (Green product in design, manufacture and operation)
- Self diagnostics on power-up
- Command Line Interface (CLI) or HTTP Web Interface

Please refer to **www.kyland.com** for more details