

Highway: ETHERNET for transportation safety, control, monitoring and management.

Project

Monitoring and controlling the traffic at Highway 1 and Highway 3, thanks to the Ethernet technologies.

The total distance reaches to more than 800km. The two highways were interconnected with a freeway. Government authorities want to make the traveling not only comfortable but with maximum road safety. The whole country has three main control centers and the task was to put all control to "Central Control Center", one of the main three. The network has to manage electrical information, emergency stop markers, dynamic sign posting and collection of traffic data via sensors separated by a remote Digital I/Os. This system can distinguish between different types of vehicles; measure the weight, the average speed, the traffic density, etc. From a safety perspective, ETHERNET enables information from the multitude of sensors and signals which are fitted along the Highways facing the extreme outdoor conditions, hence, increasing the complexity of the traffic control system further. The collected information is transmitted via an ETHERNET network to a "Central Control Center" located in the controlling and monitoring facility

Project parameters

The most important target is to be ETHERNET availability without any failure, 24 hours a day, 7 days a week. The ETHERNET has to be segmented in many smaller rings, and connecting the device boxes via fiber converters to the ETHERNET. The whole infrastructure then needs to be connected to SDH (backbone core routers) via RSTP redundancy technique.

Solution

The continuous ETHERNET availability and stability is ensure by ELITE Ring with <10ms recovery time, using ESW-08062-SSC managed switches. There are 28 sub control panels having four redundancy rings from each sub control panel were designed. These control panels were located all over the highways and also interconnected with each other and finally connected to backbone router using the Dual Homing technique.

Fiber to ETHERNET media converters were used to connect the DI & DV device boxes.



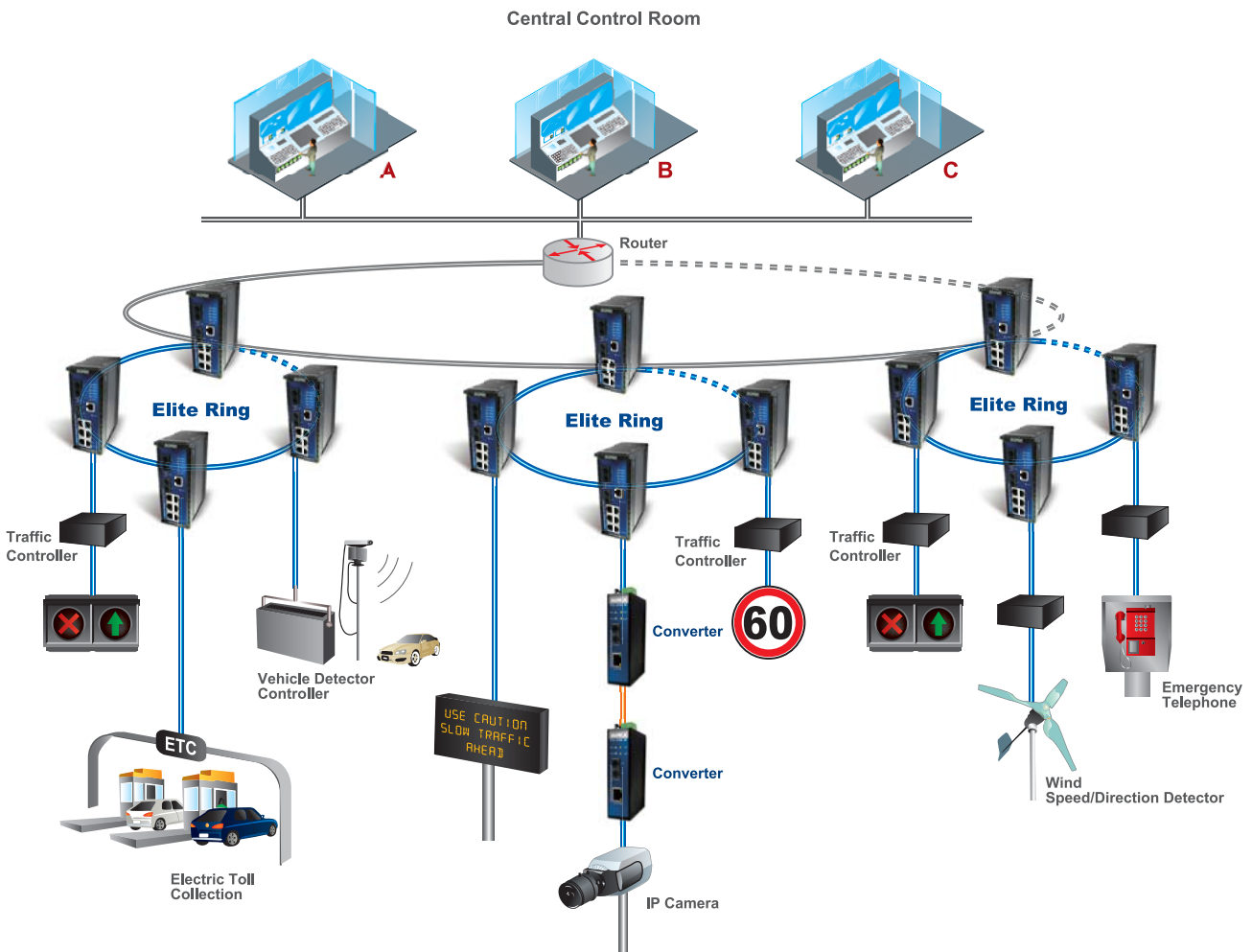
Why SUNIX

- Long distance communication with remote monitoring and management
- SUNIX industrial switches managed switches with minimum recovery time for network resilience and redundancy
- Long operational system life with performance reliability
- Compatibility to existing backbone system

Comments

"For the project of this size, we could only work with the products that we can trust. We knew that we could count on SUNIX solution for real time ETHERNET", Networking Designing Director states.

Application Topology



Key Products

ESW-8062-SSC-E

FTL-1218HR-SMC-E