RFL UTILITIES SOLUTIONS

How do I migrate to an IP-based network while maintaining the end legacy devices?

The Scenario:

Gulf Power, a Southern Company subsidiary, headquartered in Pensacola, Florida is an investor-owned electric utility that provides electricity to more than 435,000 customers in 71 towns. Gulf Power had, for many years, been installing fiber throughout Northwest Florida for protective relaying and internal communications purposes and was looking to maximize the investment by upgrading its existing T1 communications network between substations to a bandwidth capacity of 155Mbps or more.

The existing TDM T1 network was used mainly to transport its SCADA/RTU and pilot relaying channels between its 60 substations (Figure 1). The most important criterion for the upgrade was to provide the bandwidth expansion while ensuring the transport of real-time mission-critical applications. Low end-to-end latency and fast recovery were essential.

The Solution:

The eXmux 3500M TDM over IP access multiplexer was chosen to replace their previous T1 multiplexer network equipment because it provided an IP migration path while ensuring zero-data-loss for guaranteed reliability and integrity of relay and protection applications. The eXmux 3500M is engineered to seamlessly transport voice, serial, video, and Ethernet data communications on the same platform.

Each linear add/drop network was upgraded to a ring network as depicted in Figure 2. The new communications system includes about 70 eXmux 3500 units subdivided into six protected rings with spur nodes. The six rings span across Northwest Florida in three different regions: Pensacola, Panama City, and Central Division. Additionally, DS1 interconnects service pilot protection channels between rings.

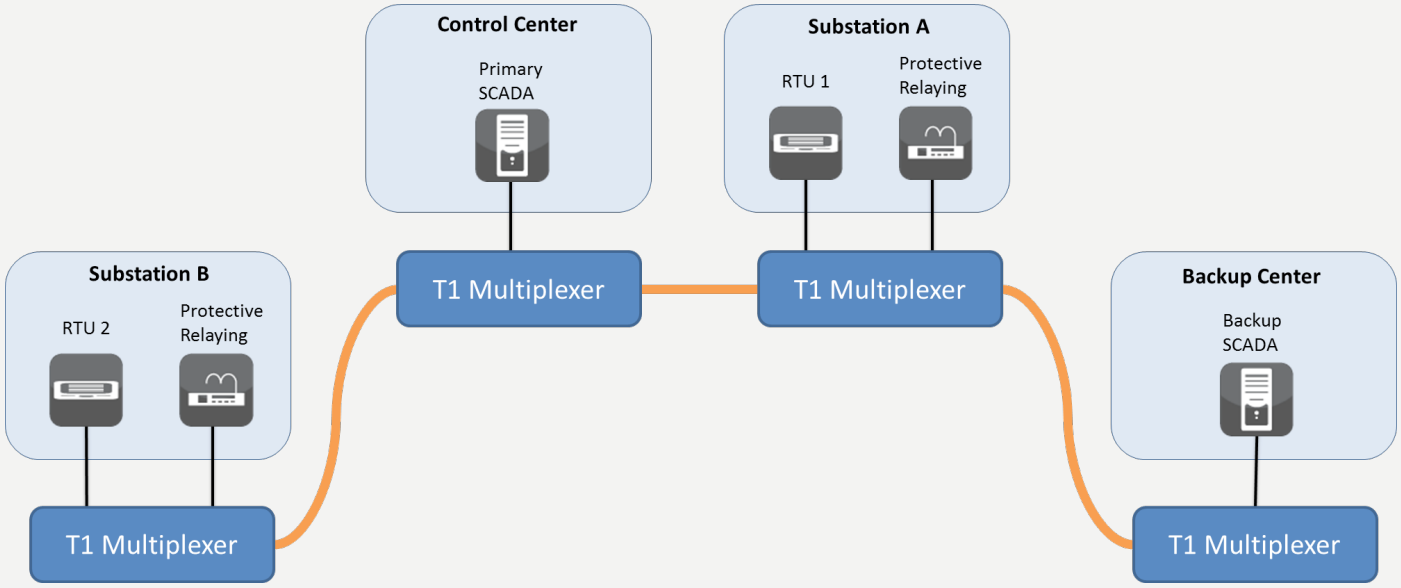

Figure 1: Linear Add/Drop T1 network carrying SCADA/RTU and Protective Relaying

The Results:

Gulf Power was able to migrate to an IP-based communications backbone while maintaining the existing legacy devices designed to work over TDM networks. With 1Gbps of capacity in each ring, Gulf power can expand managed IP-based services and support growth for years to come. An additional benefit includes the ability to implement multipoint-to-Multipoint SCADA/RTU applications for seamless operation between the primary and back-up SCADA Master.

Related Products:

eXmux 3500

The RFL eXmux 3500 is a substation-hardened IP Access Multiplexer engineered for mission critical infrastructures to transport voice, serial, relaying protection, SCADA, video and Ethernet data communications over Ethernet/IP or MPLS networks, providing the flexibility of backward compatibility with legacy devices and forward compatibility with Ethernet devices on the same communications platform.

About RFL

RFL designs and manufactures a comprehensive line of highly-reliable, mission-crit-ical, cost-effective communications and protection solutions for the electric utility and transportation markets, oil and gas markets, government agencies and engineering consulting firms. RFL is focused on guaranteeing mission-critical data will arrive on-time, every time.

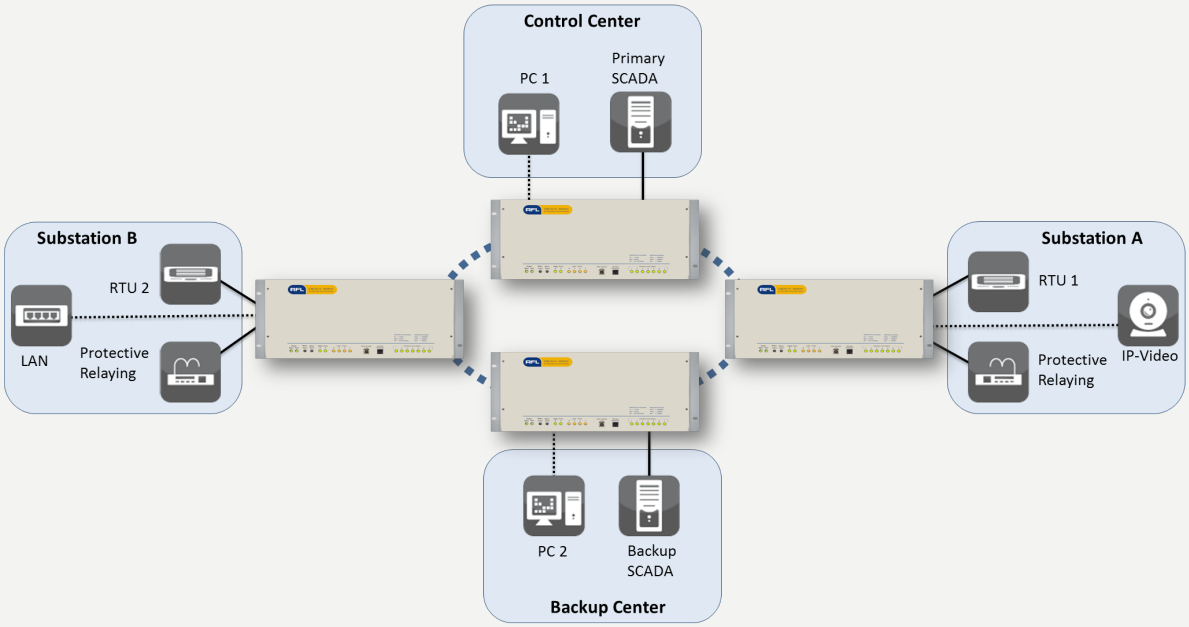

Figure 2: Gigabit Ethernet Ring network carrying legacy SCADA/RTU, Protective Relaying and IP-based services

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