

# Midwest Power Utility Consolidates Core Applications with JumboSwitch

## Case Study

### Objective

- Upgrade the critical communications network with the ability to transport data and voice core substation applications to remote sites
- Consolidate AMR, teleprotection and telecommunications applications onto a common IP platform

### Products Used

- [JumboSwitch®](#)
- [TCView®: Network Management Software](#)
- [TC3841: 6-port Copper GigE Switch Cards](#)
- [TC3845-1: T1/E1 over Ethernet](#)

### Key Benefits

- Increased network flexibility and scalability for future applications
- Simplified T1 build-outs to remote substations
- Shifted AMR, teleprotection and telecommunications to IP
- VoIP cards added for emergency phone lines
- Ethernet & SONET flexibility for current and future applications
- Established IP communications platform for future Smart Grid migration
- Eliminated media converters & Ethernet (rate limiting) service for data customers
- Simplified management, monitoring, maintenance and repair



*With JumboSwitch, we could choose which substation, SCADA, AMR, telecommunication, office and security camera application we wanted to consolidate on the JumboSwitch network...I expect the JumboSwitch platform will provide communications for our core utility business and additional services, like T1, to customers for many years to come."*

**- Utilities Communications Manager**

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## The Challenge: Upgrading and Consolidation

A Midwest Power Utility needed to upgrade its core communications network to transport various data and voice substation applications to remote sites. It also sought to consolidate AMR, teleprotection and telecommunication applications onto a single, common IP platform with transparent “on and off ramps.”

The Utility had been using a combination of Ethernet, SONET and microwave for its communication network needs. However, it preferred an Ethernet migration path to achieve a more distributed throughput system (i.e., more bandwidth capacity), along with more simplicity and scalability.

The decision to upgrade the communications network presented the Utility with two options: Expand its existing SONET rings and install additional Ethernet cards, or upgrade the Ethernet network to a primary communications network.

## Solution: Multi-service Primary Communications Network

The Utility moved forward with creating a primary communications network with a mesh topology based on the multiservice Ethernet capability of TC Communication’s JumboSwitch Multi-Service gigabit Ethernet Switch.

The JumboSwitch solution provided an immediate migration path for moving existing applications over to IP. To implement these applications, the Utility network deployed 23 JumboSwitch nodes with 4U chassis, each holding up to seven interface cards.

Moreover, the JumboSwitch’s ability to integrate IP, T1 over IP, VoIP and Analog Radio over IP significantly increased the Utility’s network’s flexibility and scalability for future applications.

## Results: Configured, Tested, Commissioned

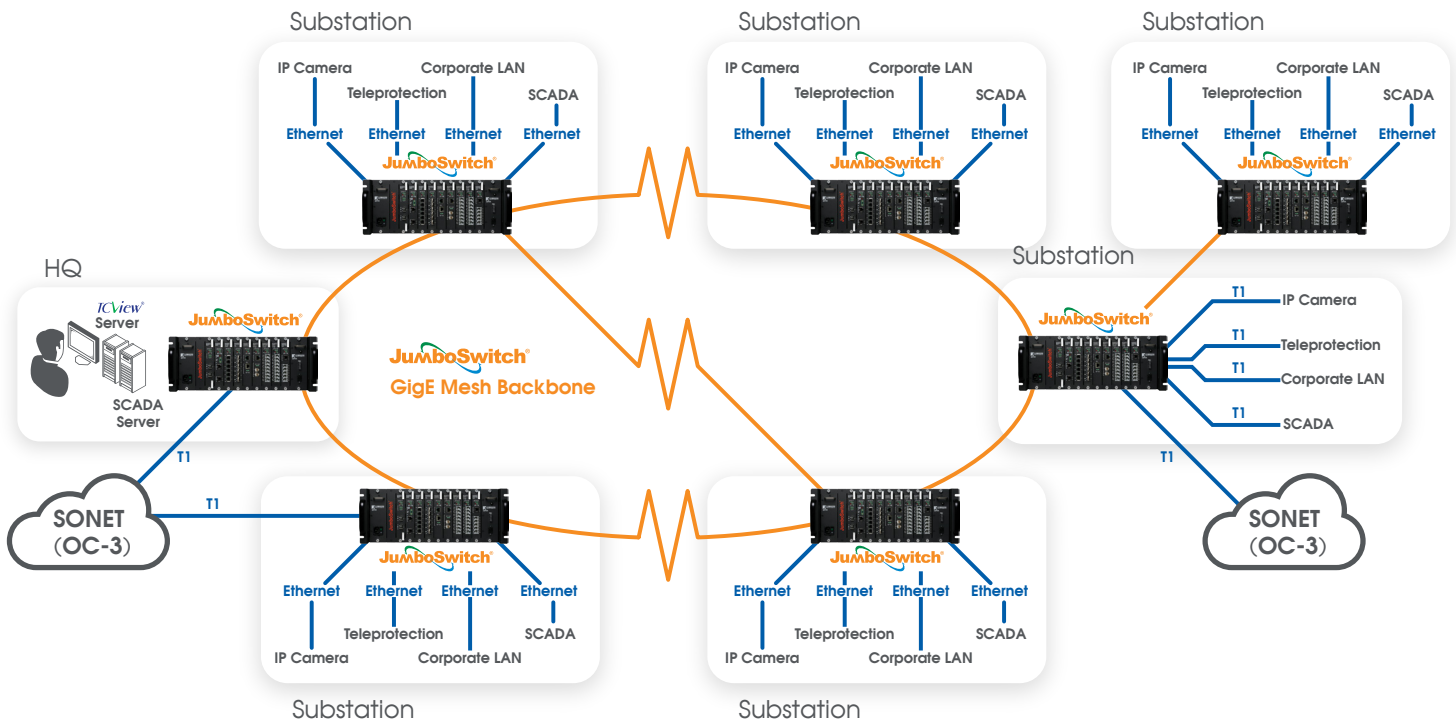
The new JumboSwitch network was configured, tested, and commissioned in just six weeks. This included, Bench Testing, Field Acceptance Testing (FAT), Site Acceptance Testing (SAT), all field installations and a 4-day hardware and TCView Network Management Software training course.

Today, the system is fully operational and performing well.

## About TC Communications

TC Communications designs industry focused communications products in Power, Public Safety, Rail, Military, Aviation, and Oil & Gas. Our products assist in the evolution of legacy networks and specialize in bridging the gap in the transition to IP networks. Our mission is to design products that are easy to use and won’t break. All TC products are designed, tested, and supported in Irvine, California since 1991.

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The Utility used the JumboSwitch network for a wide variety of applications including substation, SCADA, Teleprotection, Automatic Meter Reading (AMR), telecommunications, data services (including rate control), security cameras, and office LAN traffic.



Designed and made in  
Irvine CA since 1991

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