

Power Turbine Co. Installs TDM over IP/Ethernet & VoIP

Case Study

The Challenge: Connecting Networks for Maximum Efficiency

When a South American country needed to generate power for various villages, industrial installations and gas pipelines in remote areas, it looked to a large USA Power Turbine company, which supplied large (70 feet in length) mobile power turbine trailers (MPTT).

However, to operate and monitor the portable turbines, the company needed to create a reliable and durable local communications network between two separate installations that were using three MPTTs up to 2,000 feet apart. Each MPTT was designed to have two separate fiber optic rings of up to nine nodes. Each node would connect Programmable Logic Devices (PLDs) and controllers.

What's more, these local networks would function as a sub-network that would connect the MPTTs to an existing country-wide SONET backbone network via a gigabit Ethernet interface.

The goal was to install a rugged self-healing ring communications network that would allow portable generators and gas turbines to be deployed anywhere power was needed. Because the network would be mobile and subject to various configurations, it had to be exceptionally flexible.

Objective

Create a reliable, durable communications network between two installations that used three MPTTs connected to a country-wide SONET backbone

Products Used

- [JumboSwitch®](#)
- [TCView®: Network Management Software](#)

Key Benefits

- JumboSwitch TCView NMS allows users to monitor the health of the network.
- Extensive Network Management System enables card level thresholds for temperature & power to be set.
- Worldwide access via remote network management.
- VoIP virtual PBX makes it possible to add reliable telephone to remote jungle locations.
- Four modular chassis options promote flexible node configuration.
- Hot-swappable, self-configuring Ethernet cards enable fast, error-proof card changes.

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Solution: Planning for the Future

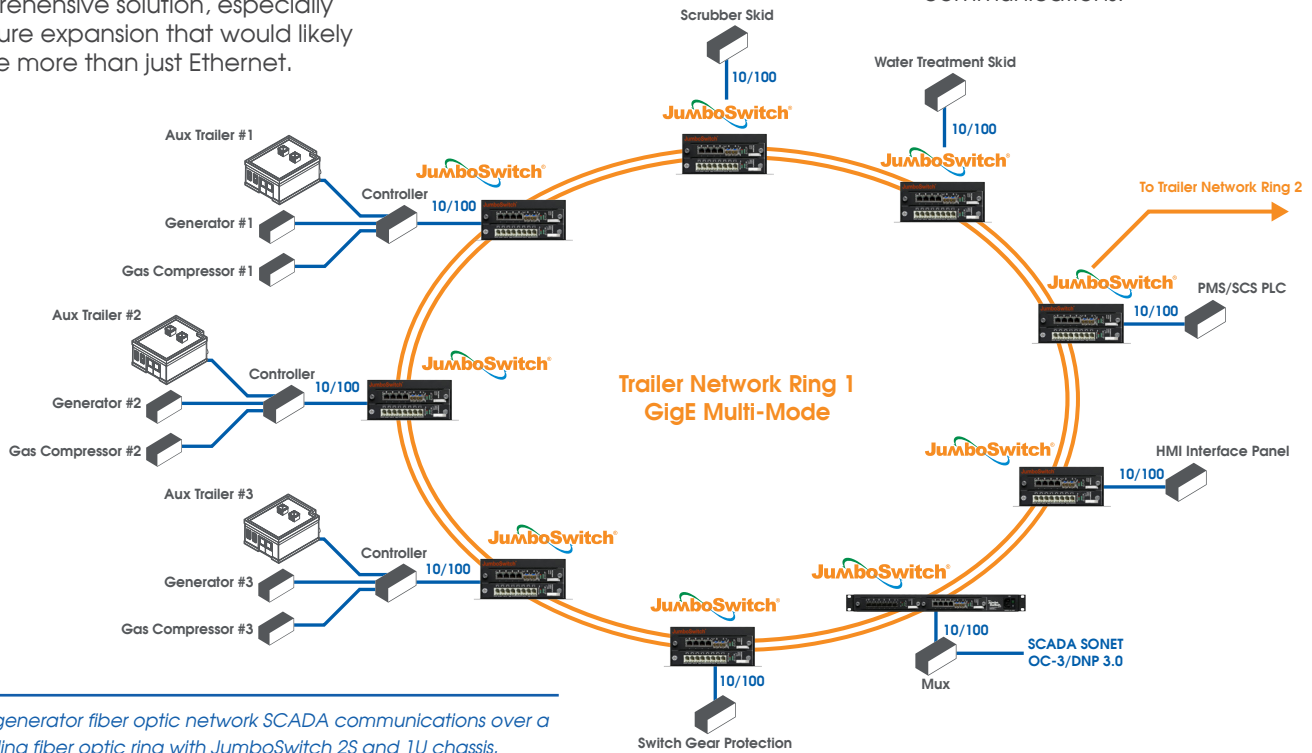
Selecting the best solution came down to choosing between a traditional Industrial Ethernet Switch solution and a more robust, value-added solution using the JumboSwitch from TC Communications. Although the traditional Ethernet Switch would have satisfied the basic communications requirements of the proposed network, the Turbine Company opted to go with the JumboSwitch, which offered a more comprehensive solution, especially for future expansion that would likely require more than just Ethernet.

The JumboSwitch also offered a more intuitive and powerful Network Management System and multiple interface card options including TDM over IP/Ethernet and VoIP. While the JumboSwitch solution cost 10% more than a standard Ethernet Switch, the product selection team determined that the many additional benefits made it the best choice.

Results: Future-proof Installation

The installation called for deploying the JumboSwitch in two self-healing ring topologies providing the communications link to the main SONET ring for plant management and process controls.

Eighteen JumboSwitches were installed at each of nine network nodes to connect Controllers and PLCs for generators, turbines, compressors and auxiliary communications.



Mobile generator fiber optic network SCADA communications over a self-healing fiber optic ring with JumboSwitch 2S and 1U chassis.

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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