

# Northern California County Voted Radio Network Preserves Legacy Equipment with Leased Line Replacement Solution

## Case Study

### The Challenge: Replacing Expiring Leased Lines

When a Northern California County realized that Telcos were beginning to phase out analog leased lines, they needed a solution, and fast. To keep their essential equipment operational, the county worked to find devices compatible with existing 4-wire analog radios, voters, and P25 trunked radio systems. Without this compatibility, they faced increased costs and network downtime. A self-healing ring network also needed to be established to prevent loss of communications between sites. Noting TC Communications' successful completion of a previous project, the County decided again to go with TC's products and solutions.

### Solution: TDM over IP

After exploring the options with the technical sales team, they decided to use Ethernet JumboSwitch® cards at each site, thus creating a self-healing Ethernet network. Existing 4-wire analog radios and voters connected to TC3846-6 600 ohm analog and dry contact over IP gateways, and the entire migration was done without impacting existing equipment. The TC3846-6 transmits uncompressed 64Kbps audio and dry contact channels with minimal latency, and is able to transmit PTT and COR signals as required by JPS SNV-12 Voters.

P25 trunked radio systems connected to T1 lines also needed to be preserved. TC3845-1 T1 over IP gateways were installed to join the P25 trunked radios with the newly established Ethernet network. As a result, the County didn't have to spend additional time migrating legacy equipment for their Ethernet network

### Results: Immediate Network Costs Savings

To keep costs down, the County was able to share fiber with a local Broadband company. Between Site A and Site B, the county owned a fiber connection that the Broadband company needed. They traded part of their network fibers with the Broadband company for use of their Ethernet bandwidth. Through this exchange, the County established a low-cost connection between Site A and Site B that reduced overall costs.

With the solution provided by TC, the County preserved legacy radio equipment while establishing a secure Ethernet backbone for critical radio communications. The County's future plans include adding more sites to the network along with the TCView® Network Management System to provide real-time monitoring and control of each JumboSwitch® site.

*See application diagram on page 2.*

### Objective

Keep essential equipment operational as Telcos phase out analog leased lines

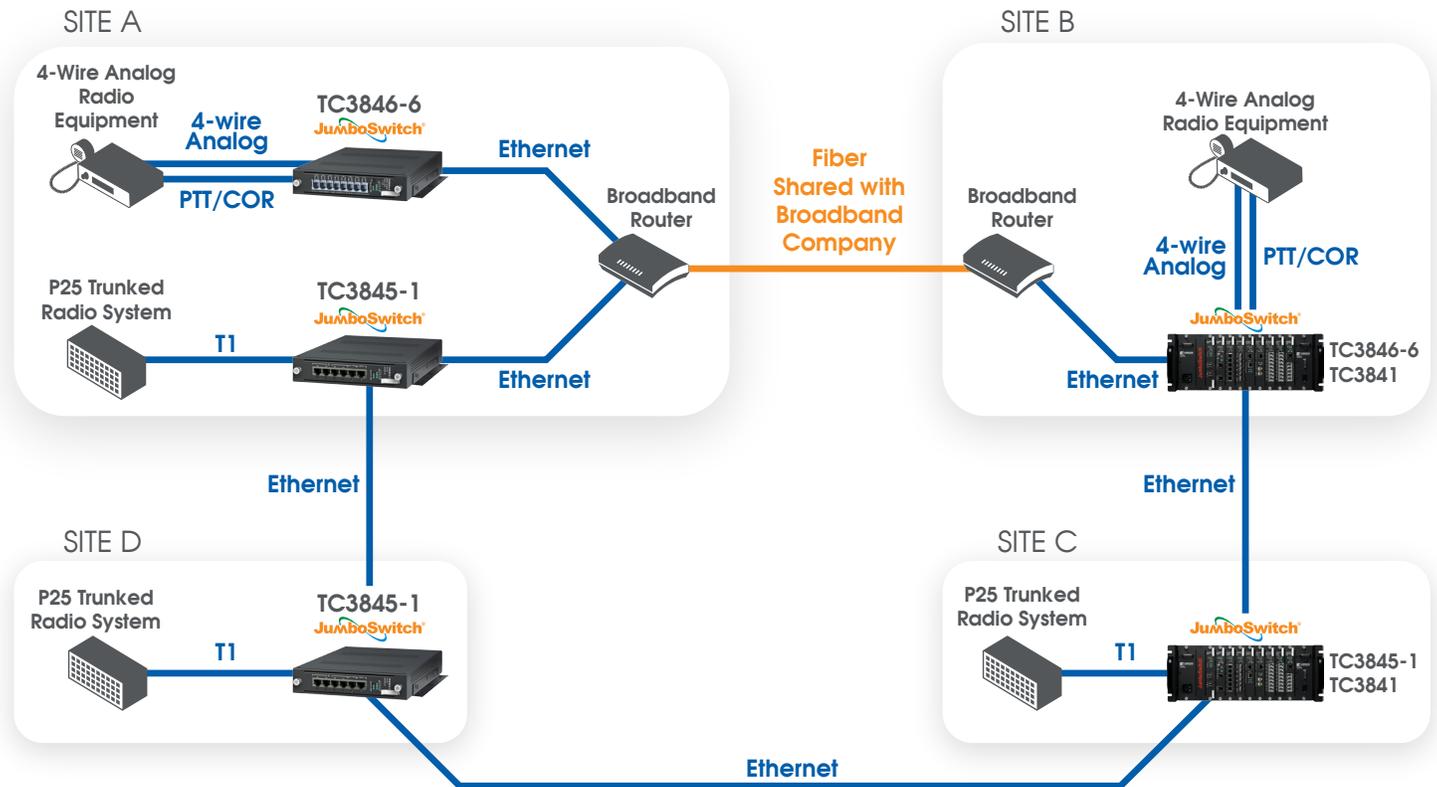
### Products Used

- [JumboSwitch®](#)
- [TC3845-1: T1/E1 over IP](#)
- [TC3846-6: 4ch 600 ohm Analog and Dry Contact over IP Gateway](#)
- [TCView®: Network Management Software](#)

### Key Benefits

- *Seamless integration with existing equipment*
- *Uncompressed 64Kbps analog and dry contact channels*
- *Minimal latency to work with JPS SNV-12 Voters*
- *Preserved P25 trunked radio over Ethernet network*

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Northern California County Leased Line Replacement Application

## About TC Communications

TC Communications specializes in TDM over IP network solutions including Analog Radio, Voice, Serial and T1 products. Applications include Leased Line Replacement, Voter Comparator over IP and Multi-Service communication networks. Focused on mission-critical applications, TC products are designed to help Public Safety networks transition to IP/Ethernet without replacing existing analog equipment. All services including engineering, manufacturing, and support located in Irvine, California, USA since 1991.



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