Engage Communication

SCADA RED IP

Utility Selects Engage IP•Tube for SCADA Transport to Redundant Data Centers

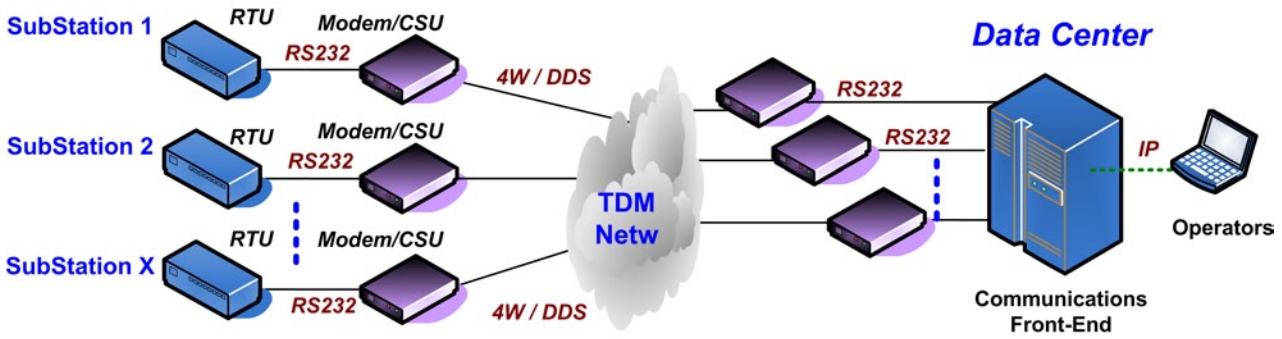
Power and Utility companies operate SCADA systems to monitor and control power generation& distribution, water treatment and other processes. Advances in SCADA technology and the communication infrastructure, along with natural disaster and security threats – are driving changes in these complex networks.

A major Midwestern utility faced multiple issues with their SCADA transport network. The local phone service provider announced the phase-out of legacy telephone services such as 4-Wire Analog and 56 Kbps DDS. At the same time regulatory changes mandated redundant control servers at diverse physical sites to ensure uninterrupted control in the event of a disaster.

TDM options were available to multiplex 4W modem and DDS channels on to T1 for transport to the control server but the complexity of delivering to redundant data centers over TDM proved daunting.

Diagram 1 – Problem: Legacy SCADA Transport Network

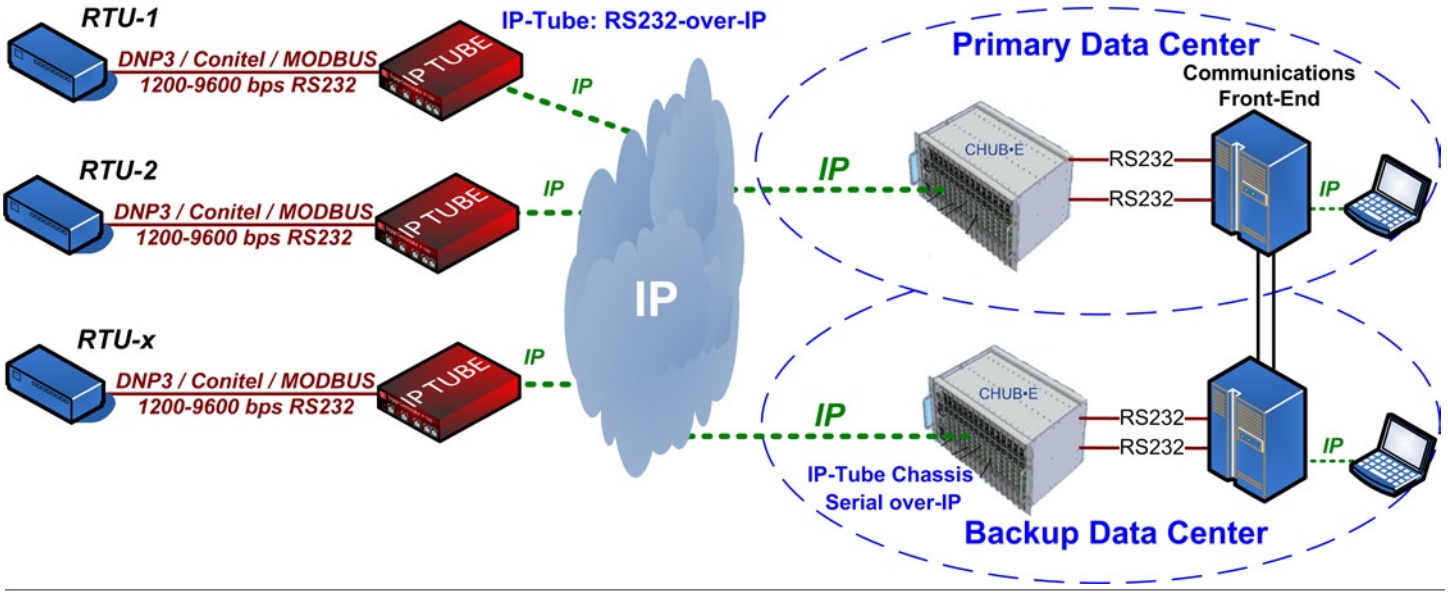
- Legacy 4W and DDS services used for SCADA transport are being phased out by the telecommunication provider
- Single Data Center performing all Control and Monitoring does not meet NERC mandated redundancy



With an extensive fiber/MPLS network available the network planners expanded their search to include IP solutions, including Circuit Emulation to permit use of existing RTU and Communications Front-End (CFE) equipment, while permitting connection to two or more Data Centers. A primary requirement was the ability to support multiple RTU types and SCADA protocols, including DNP at 9600 bps and CONITEL at 1200 bps. A secondary requirement was isolation between the IP network and the RTU equipment for regulatory reasons.

Diagram 2 – Solution: SCADA Transport over IP/MPLS to Multiple Data Centers

- Engage IP-Tube Serial-over-IP transports Conitel & DNP at multiple clock rates – pr=eserving existing RTUs
- IP/MPLS transport facilitates redundant Data Centers at diverse physical locations – meeting Federal mandates



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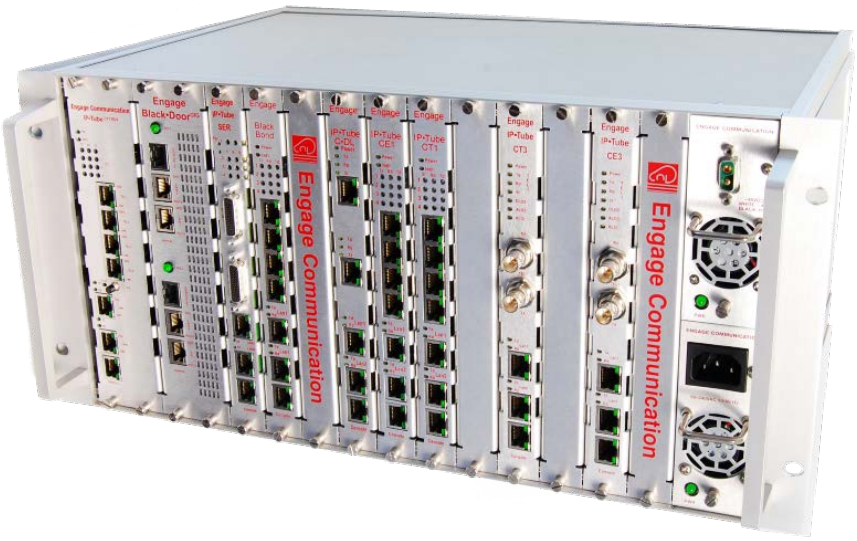
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The network planners selected **IP•Tube** solutions from Engage Communication with advanced SCADA transport features. IP-Tube Serial Circuit Emulation provides a transparent transport, enabling connection of CONITEL and DNP equipment over the MPLS network. The ability to transport serial SCADA traffic running various protocols and clock rates was a key advantage, as was the ability to configure packet size and buffering to minimize latency across the communication infrastructure.

The initial implementation utilized two control servers at a primary data center, but a second data center is in construction which will house two additional control servers. IP-Tube SCADA features allow any of the four control servers to communicate with a given RTU for Scan and Control. Control signal monitoring ensures the RTU only communicates with the active control server.

Independent connections are provided between RTUs and control centers. This allows all scanning from one control center or a combination. Scanning may be split between control centers for testing, for bringing on a new RTU, and for transition between control centers as required.







About Engage

Engage Communication was founded in 1989 to design, manufacture, and support products and solutions that bring exceptional value to our customer's networks. Over the past twenty three years we have successfully delivered high quality products that both save money and provide critical functionality for a wide variety of customers and applications worldwide.

This commitment to excellence continues today as we deliver mission critical networking, security, and telecom products to organizations in the Military, Utility, Government, Transportation, Service Provider, Enterprise and Education markets. Our solutions can be found in missile defense systems, redundant supervisory and control networks, tactical vehicles, satellite and microwave networks, protection switching over cellular, and many other applications.

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