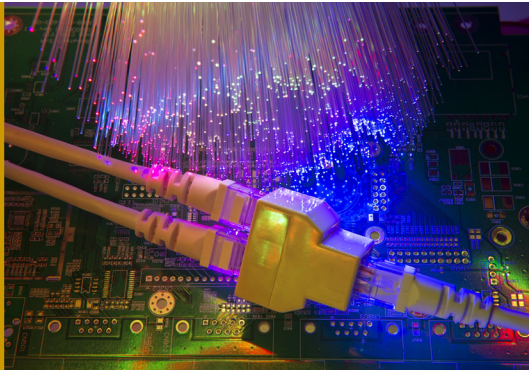


CONNECT



PROTECT



SECURE



Engage Communication provides Utilities with innovative and cost effective solutions that connect network elements, protect critical circuits, and secure network traffic and cryptographic keys. We have a quarter-century of experience developing, manufacturing, and supporting solutions that are critical to our customers' operations.

.....

CONNECT

Migrate from Circuit-based to Packet-based Networking

- Transition substation SCADA traffic from end-of-life circuits to robust packet networks
 - Serial - RS232 - 4-Wire - T1 - E&M - DDS - Modem

CONNECT

Transport Radio Backhaul Traffic over IP/MPLS Networks

- Land Mobile Radio T1 connectivity over cost effective Ethernet services

CONNECT

Eliminate Leased Line Costs for Internal Communications

- Interconnect PBX, Channel Bank and T1 MUXes with Ethernet packet networks
-

PROTECT

RTU infrastructure NERC-CIP Compliance

- Redundant and diverse connectivity for SCADA control center communication

PROTECT

Protect Mission Critical T1 Circuits with Automatic Failover Switch

- Backup Land Mobile Radio (LMR), TDM networks with:
 - 3G/4G cellular data networks - MPLS - Metro Ethernet
-

SECURE

Secure SCADA Installations

- Protect against inside and outside cyber security threats

SECURE

Voice, Video and Data Encryption

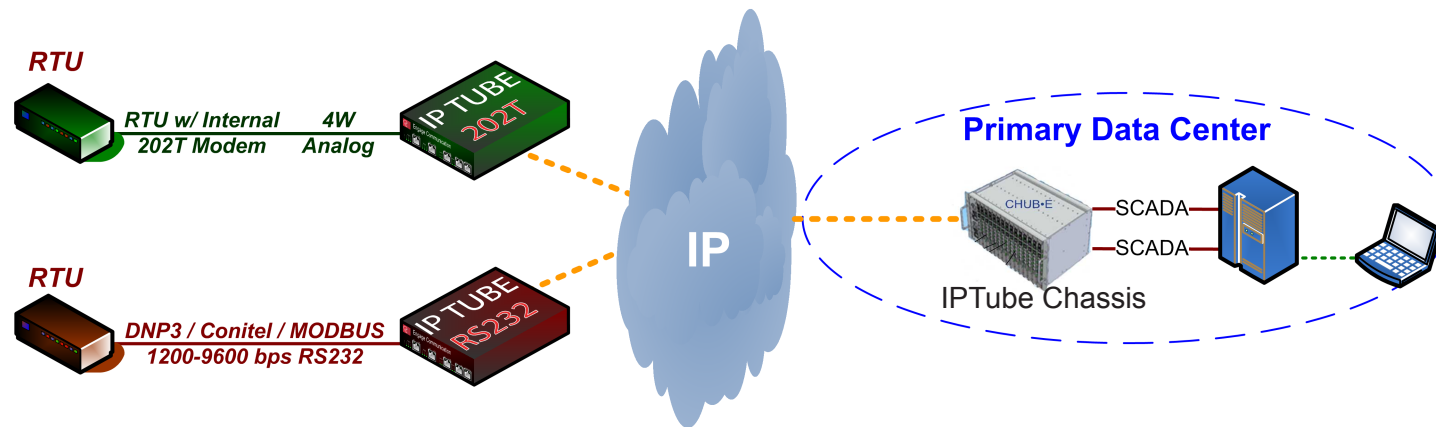
- T1 Circuit - Ethernet Packet - RS232 Serial

SECURE

Implement FIPs Assured Cryptography

- Secure cryptographic keys for provisioning encryption, decryption, authentication, and signing
 - Expedite Regulatory Compliance Audits - VPNs - Smart Metering

CONNECT END-of-LIFE for TRADITIONAL LEASED CIRCUITS



SITUATION

Current analog connectivity is ending. As 4-wire leased line services disappear, utilities need to find a solution to ensure substation connectivity.

SOLUTION

Engage's **IP•Tube** product line transparently transports legacy **RTU SCADA** protocols over IP networks. We provide both serial and **4-wire** physical interfaces for any **RTU** environment (both remote and central sites). No additional investment in **RTU** or central site **SCADA** equipment is required to ensure dependable, reliable, and cost-effective **control center-to-RTU IP** connectivity.

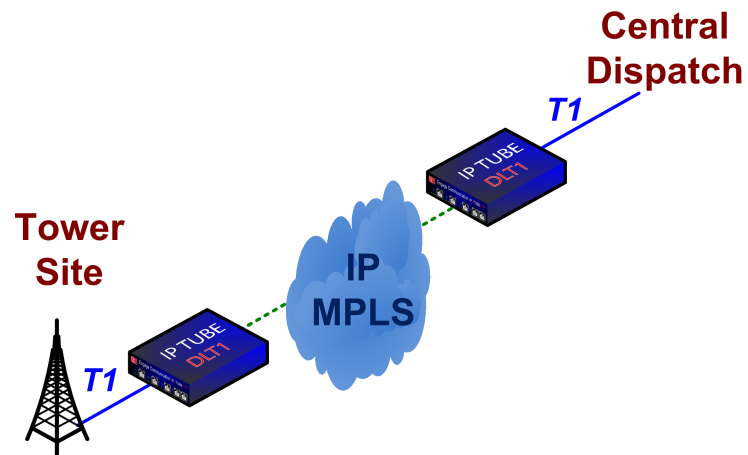
RESULT

- Ensure uninterrupted operation of your current SCADA network system.
- Proven, reliable, and affordable way to leverage existing SCADA infrastructure.
- Transport legacy data protocols transparently with their original timing.
- Save on labor, truck rolls
- Apply capital budget to other priorities

LEVERAGE EXISTING INFRASTRUCTURE

You don't have to say goodbye to your infrastructure as you migrate from **circuit-based** to **packet-based** networking. When you receive an end-of-life notification from your telecom company, we're the company to speak with to ensure network continuity after your current connectivity ends.

Even though your **4-wire telephone services will be discontinued**, you can still leverage all of your substation and central site investment, including your current RTUs. We make the transition seamless and economical with **RS232** or integrated **Bell 202T** modem interfaces.



SITUATION

Utilities are leasing T1 circuits from local telephone companies to backhaul radio tower traffic. At the same time utilities are deploying packet-based IP connectivity at or near many tower locations.

SOLUTION

Convert T1 radio traffic to IP with the Engage **IP•Tube** product family. Backhaul circuit-based utility and public safety radio communications over **IP/MPLS** networks.

RESULT

- Continue to use your existing radio equipment
- Eliminate monthly leased lines costs
- Measure ROI in months

SITUATION

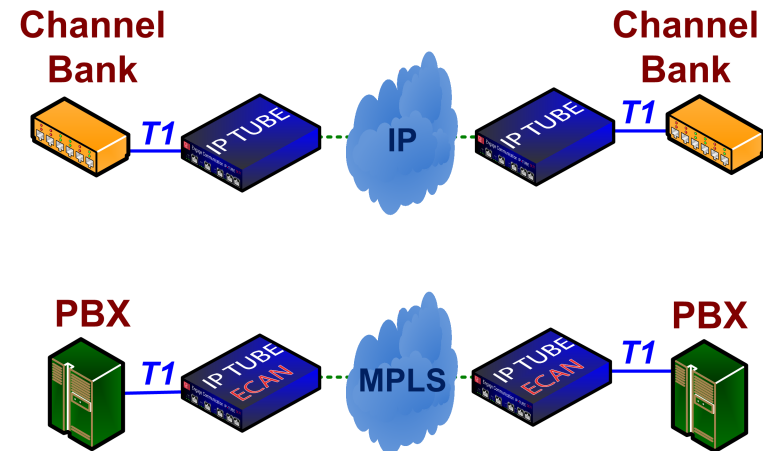
Recurring telecom charges and reduced reliability of aging telecom circuit infrastructure necessitate revisiting carrier-provided T1 and T3 services for interconnecting **PBXes**, **Channel Banks** and other **TDM** equipment.

SOLUTION

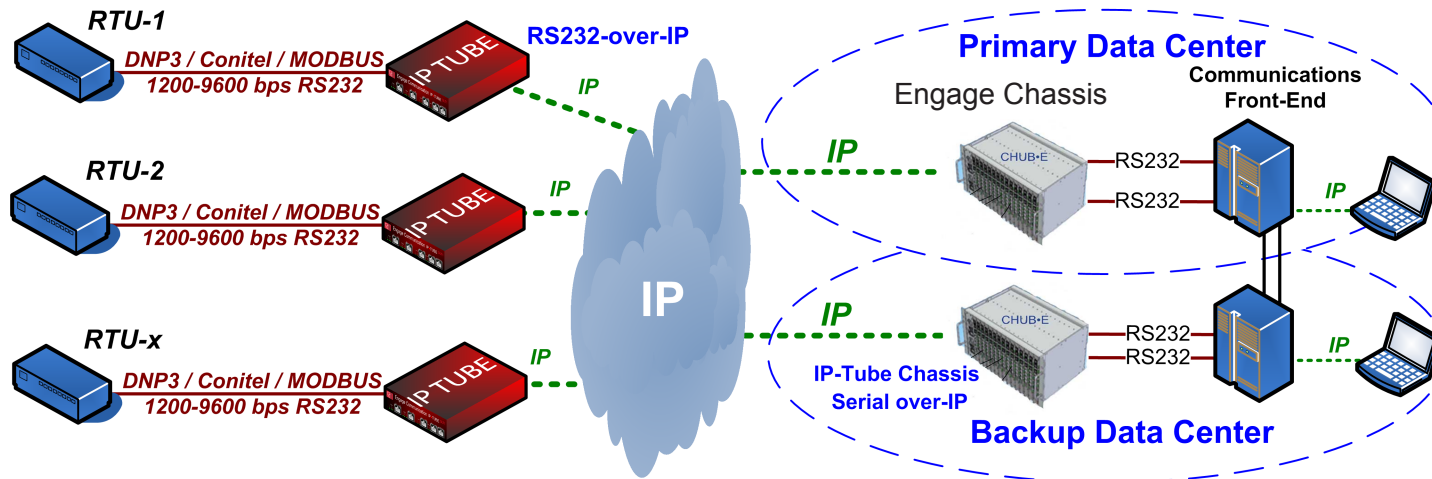
Convert the Telecom output of circuit-based equipment to IP using Engage **IP•Tube T1** and **T3** circuit emulation. Transport the traffic over IP networks.

RESULT

- Eliminating leased lines charges has an ROI measured in weeks
- Eliminate reliance on 3rd parties for network availability
- Continue to use your existing circuit-based equipment:
 - **PBXes** - **Channel Banks** - **Multiplexors**
- Maintain your current operational procedures



PROTECT NERC REDUNDANCY COMPLIANCE: CONTROL CENTER and RTU CONNECTIVITY



SITUATION

NERC -CIP mandates control center redundancy. RTUs must be accessible from, and be able to connect to, multiple control centers. RTU connections must automatically detect if the active control center is no longer reachable, and immediately connect to a redundant control center when necessary.

SOLUTION

Engage's IP•Tube continuously monitors connectivity to the active control center and automatically switches to the active secondary control center(s).

RESULT

- Meets NERC mandates for control center redundancy
- Preserves investment in existing RTU and central site SCADA equipment
- Facilitates control center redundancy with Ethernet/IP flexibility
- Supports up to four redundant control centers
- Redundant and diverse connectivity for SCADA communication

PROTECT PROTECTION of CRITICAL T1 COMMUNICATION LINKS

SITUATION

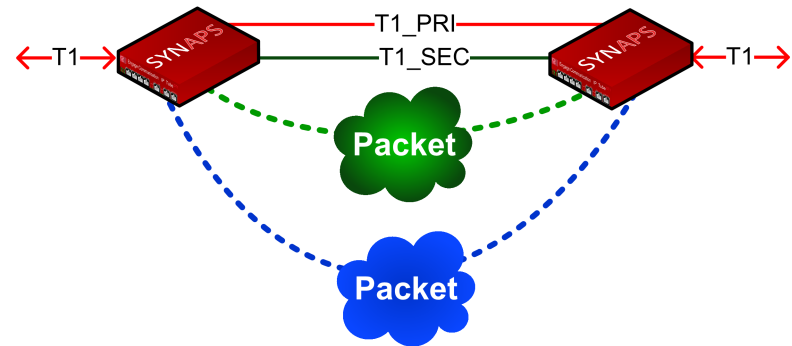
Critical T1 circuits requires an automated backup or protect plan and process to ensure uninterrupted communications for service providers (ie. utility providing network services) and end-users (ie. First Responders).

SOLUTION

Engage **SYN•APS** with **Link Protector** provides T1 failure detection and automatic routing over backup Ethernet/IP/MPLS networks.

RESULT

- Maintains critical communications for both service provider and end users
- Automatic Protection Switch for T1 Circuits
- Deliver on Stringent Service Level Agreements
- Back Up for Mission Critical Connectivity



PROTECT BACKUP of LAND MOBILE RADIO OVER 3G/4G CELLULAR

SITUATION

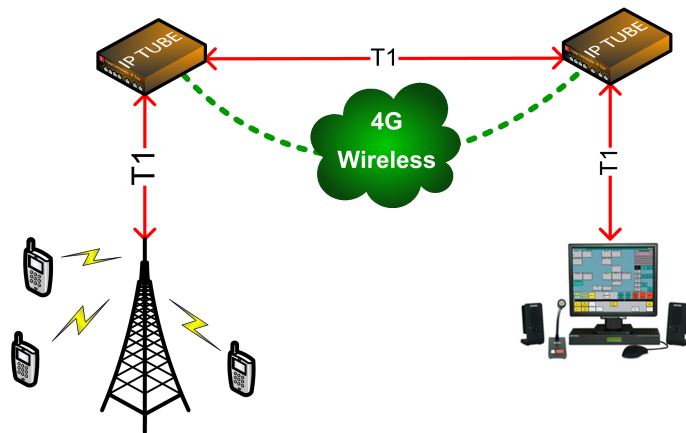
T1 connections to Land Mobile Radio (**LMR**) towers need backup in case of network failure or natural disaster.

SOLUTION

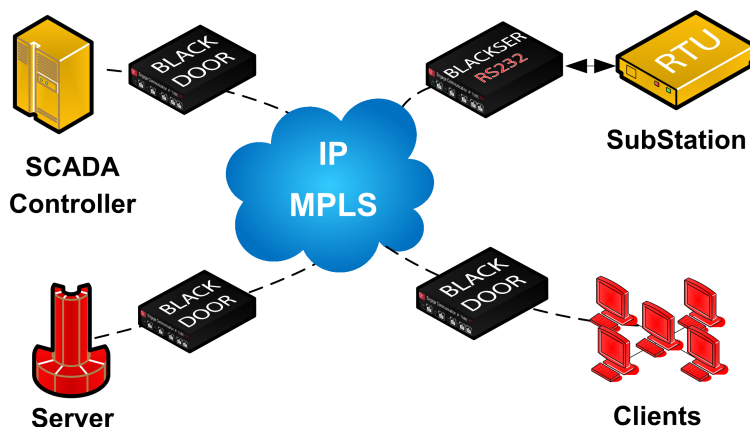
Engage **IP•Tube** with **Link Protector** detects T1 failures and automatically routes T1 traffic over IP, MPLS, 3G/4G cellular.

RESULT

- Ensures public safety agencies have 24/7/365 access to **LMR** networks
- Disaster Recovery for Public Safety T1 based **LMR** Networks
- Ensures communication after natural and man made disasters



SECURE ENCRYPTING VOICE, DATA, and SCADA TRAFFIC



SITUATION

Data security concerns and meeting **NERC CIP** requirements. After you've defined, as mandated by **NERC CIP**, what is routable and non-routable traffic, and what needs protection, the next step is to choose how to protect these assets and the critical control and status data.

SOLUTION

Engage **Black•Door** with AES encryption encrypts Layer 2 and 3 Ethernet **Voice, Video, Data** and **SCADA** traffic.

The **Black•Bond** uniquely encrypts **Voice** & critical content on T1 Circuits.

RESULT

- Satisfies encryption requirements for **NERC CIP** compliance
- Cost-effective way of meeting encryption mandates
- Easy to implement End to End AES 256 Encryption Envelope

SECURE CRYPTOGRAPHIC KEY MANAGEMENT and SECURITY

SITUATION

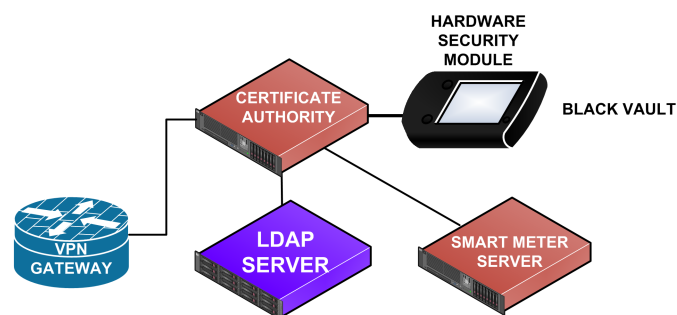
Cryptographic keys are used for Virtual Private Networks (VPNs), smart meters, and critical information. Crypto keys are **easily found on hard drives** and OS memory since they are unique prime numbers of known length. Implementing encryption is for naught if the keys are accessible.

SOLUTION

Engage **Black•Vault** is a hardened, tamper-reactive Hardware Security Module that performs **secure cryptographic** key protection, processing and key management.

RESULT

- Cryptographic Keys are Secure
- Multi-Factor Smart Card authentication restricts access
- Centralizes the management of cryptographic keys, from distribution to termination and archival, in a highly secure hardware appliance



CONNECT	PROTECT	SECURE
RTUs: Convert Telecom Interface to IP SCADA to Ethernet Converters Land Mobile Radios to Ethernet Channel Banks Circuits to Packet Nets	Redundant Data Center Mission Critical Infrastructure Circuits Automatic Protection Switching Land Mobile Radio Redundancy	Cryptographic Keys Critical Information Data in Transit Voice, Video & Data

Focus on Customer ROI

Whether it is eliminating leased line telecom circuits, extending the life of military encryption gear, efficiently switching utility **SCADA** traffic to a backup control center, or encrypting sensitive voice, video and data for secure communication. We help our customers meet their network, capital, and operational cost objectives.

We're an equal opportunity innovator; solving specific telecom, networking and network security problems for government, military, telecom, utility, enterprise, and first responders.

ABOUT ENGAGE

Since 1989, Engage Communication has developed innovative products and solutions that enable organizations across the globe to deploy and operate cost-effective, reliable, and secure communications.

We combine an experienced and responsive engineering team, highly scalable manufacturing resources, and a "whatever it takes" customer service philosophy to meet the demanding needs of our customers.

- **Over 25 Years of Expertise in:**
Telecom, Networking and Security
 - Proven Products
 - Superior Support
- **Responsive to Customer Objectives:**
Unique and Agile Adaptation
 - Optimized Solutions
 - Comprehensive Results



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Assembled & Tested
in America 