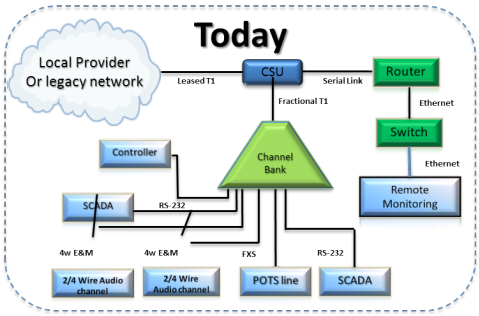
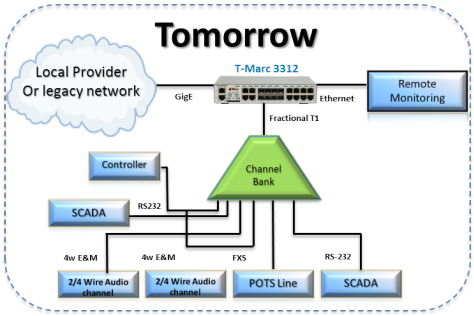
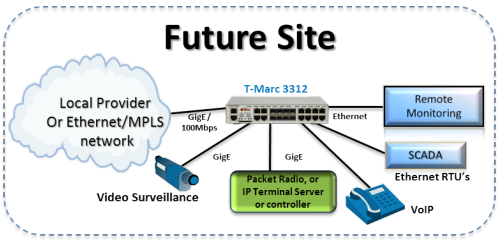
TDM MIGRATION TO ETHERNET/IP/MPLS







Why Is This Necessary?

An increasing amount of carriers and service providers are pushing customers away from TDM-based services, forcing the customers to Carrier Ethernet/IP/MPLS in an effort to increase network efficiency and to reduce operational costs related with management, support and maintenance of multiple networks and old infrastructures.

Moving to Carrier Ethernet/IP/MPLS based services and transitioning away from higher cost TDM (T1/DS-3) services provides the upside of cost savings not only for service providers, but also for customers who will benefit over time from much higher speed services at generally lower recurring costs.

The challenge is that some of these customers, like power utilities and/or municipal, state and federal government agencies, will now find themselves having to determine how to migrate their most critical network services (i.e., SCADA/telemetry, dispatch audio, etc.) from the TDM interfaces and protocols on which they are currently run, over to packet-based services without severely impacting these critical 24x7x365 services. Not all of these customers are prepared with the budget, technology, expertise or resources to update all of their TDM-based services simultaneously.

Due to the critical nature of the control, telemetry and dispatch services, a forklift upgrade would likely mean building a parallel network and testing all of the applications individually prior to cutover. This approach means huge upfront costs associated with the parallel network, including the equipment, installation, management and support for both the current live network and the new test network. In addition, it introduces significant risk associated with all the variables that come into play, including identifying and validating all new peripherals for each legacy application and its associated protocols for interfacing to the packet-based network, and significant testing to identify potential issues that may arise to determine whether one of the newly reconfigured applications or the network itself is the cause.

With that in mind, it is probable that the contracts for the existing leased services do not expire at the same time, so to avoid early termination fees the utility may decide to roll services over to Ethernet as the contracts come up for renewal.

How Telco Systems' Solution Can Help

Telco Systems offers a simple and phased approach that minimizes both upfront and overall costs, in addition to decreasing the amount of risk associated with the migration and the timeframe to deploy. Our solution allows each remote site to be migrated as its current service contract expires, thus eliminating early termination fees and providing a phased migration of the transport technology, without the need for building, troubleshooting and managing a complete parallel network.

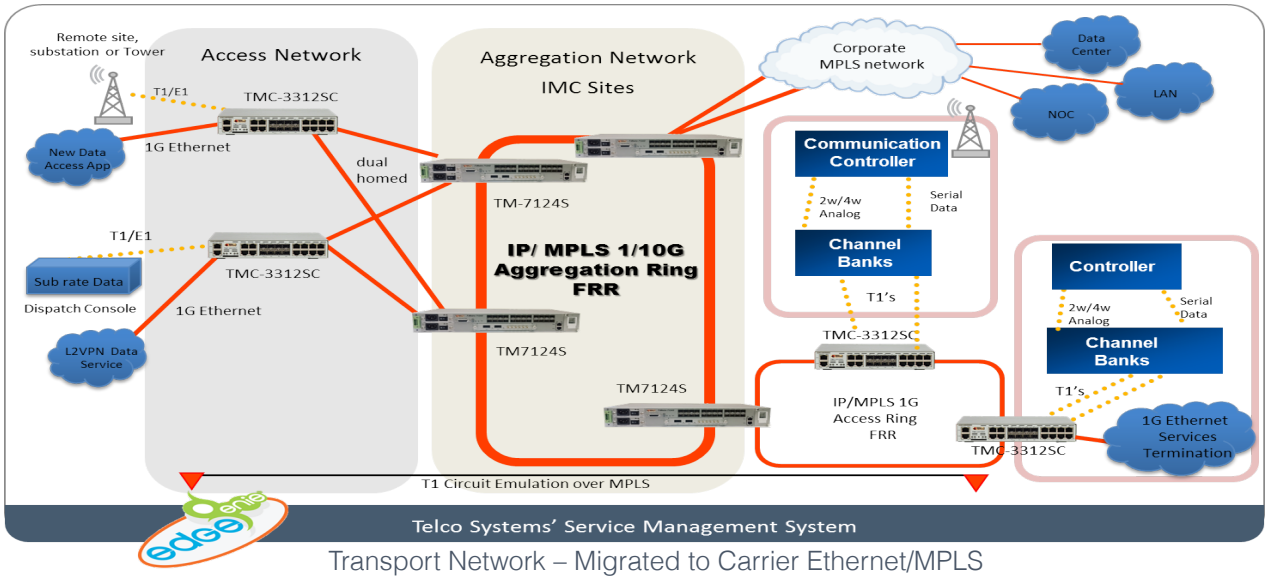
The utilities and/or municipal, state and federal government agencies can now take advantage of Telco Systems cost effective Carrier Ethernet/MPLS access devices, such as the T-Marc 3312SC that supports both advanced Carrier Ethernet and MPLS services with the interfaces for connecting to a service providers' Ethernet/IP/MPLS network, as well as traditional T1/E1 TDM circuit emulation service (CES) interfaces for connection to existing channel banks or legacy routers. This minimizes cost, resources, and complexity of the migration. It also allows the utility to stabilize the transport network without having to troubleshoot changes to the existing applications at the same time. Once the transport network is stabilized, the DS-0 based applications – such as SCADA RTU/PLCs, dispatch terminals, etc. – can be updated to Ethernet or wireless as time, resources and budget allow.

Unlike many devices on the market that support CES, Telco Systems' solutions support sub 50ms protection switching for both ring (MPLS-FRR, G.8032) and path (G.8031) protection, multiple classes of services and advanced traffic engineering tools, built-in hardware-based OAM (EFM, CFM, Y.1731) and performance test heads (RFC-2544, Y.1564 EtherSAM) and flexible time synchronization options like adaptive clock recovery, 1588v2 PTP and SyncE, all of which we believe you will find to be absolutely critical in managing your next generation packet network.

T-Marc 3312SC supports both channelized and clear-channel T1 services and can perform DS0-level cross-connects and apply groom & fill operations on those services to make efficient use of fully packed T1 interfaces at the main control sites. Eventually, as each critical application is qualified, you can simply connect them directly into the remaining Ethernet ports on the T-Marc 3312SC. Telco Systems' T-Marc 3312SC has enough Ethernet interfaces to support the current critical applications, as well as new higher bandwidth services that will come along, like HD video surveillance, thus future proofing your investment.

TDM MIGRATION TO ETHERNET/IP/MPLS SOLUTION SHEET

Telco Systems' cost effective solution for TDM migration to IP, Ethernet and MPLS includes a CPE device (T-Marc 3312SC) that supports Ethernet and CES, an aggregation device (T-Metro 7124S) that supports 10GE, 1GE and 100mbps Ethernet, and our service management system (EdgeGenie) will take you through the transition of your current network and beyond.



Transport Network – Migrated to Carrier Ethernet/MPLS

DEMARCATION/NID SOLUTIONS

T-Marc 3312SC

NextGen Ethernet/MPLS Mobile Backhaul Demarcation. The T-Marc 3312SC NextGen Ethernet/MPLS Mobile Backhaul Demarcation device offers an all-in-one solution that meets the increasing challenge of mobile operators, and mobile backhaul wholesale and service providers to cost-effectively connect base stations and controller sites combining 2G/3G and 4G networks.

T-Metro 7124S

10GE Pre-Aggregation and Demarcation. The T-Metro 7124S 10GE pre-aggregation and demarcation Ethernet/MPLS device provides a carrier grade and highly resilient solution, including dual-homing, FRR, G.8031, G.8032, and xSTP combined with extensive field-proven operations, administration and maintenance (OAM) support, including embedded RFC 2544 test head and Y.1564.

T-Marc WD

Weatherproof Service Demarcation Solution. T-Marc WD Weatherproof Demarcation Series is a family of enclosures built to withstand exposure to weather without damage or loss of function. Compatible with T-Marc 3312 (T-Marc 3312WD-B/WD).

SERVICE MANAGEMENT

EdgeGenie SMS

Service Management Platform. Telco Systems' EdgeGenie service management system offers a complete solution for the full life cycle of network deployment, from planning to managing, monitoring and maintaining Ethernet services. It offers network and service management, resource management and optimization, network planning, and real-time SLA monitoring and statistics through the customer portal.

Telco Systems A BATM Company

Int'l Headquarters
Tel: +972-9-866-2525
Fax: +972-9-866-2500
sales.emea@telco.com

US Headquarters
Tel: +1-800-221-2849
Fax: +1-781-551-0538
sales@telco.com

EMEA
FR: +33-95-314-7731
DE: +49-241-463-5490
sales.emea@telco.com

Asia Pacific
Tel: +65-6224-3112
Fax: +65-6220-5848
info.apac@telco.com

Latin America
Tel: +1-800-221-2849
Fax: +1-781-551-0538
sales.latam@telco.com

©2014 Telco Systems Inc. All rights reserved. All trademarks are property of their respective owners. Specifications are subject to change without notice.

PN:SOL-TDM-Migration-NOV14