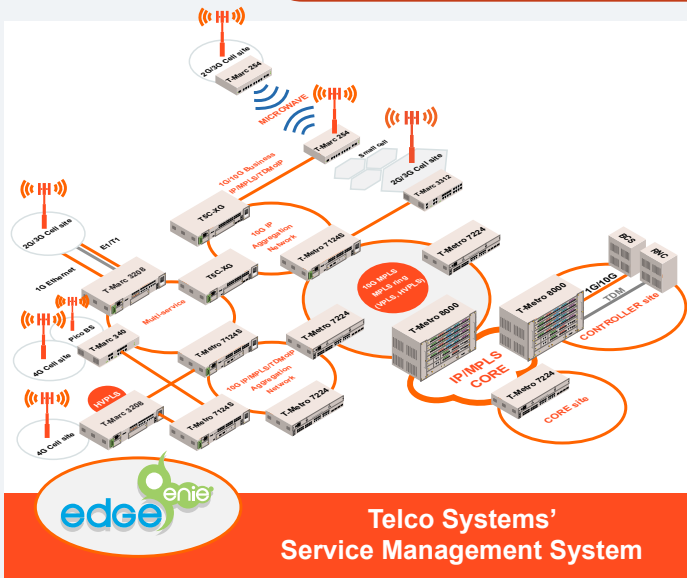


MOBILE BACKHAUL - Managing the Migration Backhaul traffic from multiple 2G, 3G and 4G cell sites



Telco Systems provides innovative solutions for mobile backhaul to help the mobile operators handle the data surge. The solution offers a smooth migration path to packet-based mobile backhaul by supporting multiple required technologies like CES, 1588v2, SyncE, OAM (Y. 1731), and HQoS to enable a flexible migration strategy. By offering both Carrier Ethernet and MPLS to the demarcation, Telco Systems offers a future-proof solution that fits both mobile providers and carrier's carriers (like utilities, MSO, wholesale providers). Our unique management system can save the provider's OPEX and CAPEX by enabling easy and fast provisioning of new services, comprehensive OAM control, root cause analysis, and network analysis, optimization and planning tools.

Our solution supports all legacy 2G and 3G networks and is optimized to meet the new HSPA+, WiMAX and LTE networks requirements including support for multiple technologies co-located at the cell site.

- 1 Seamless MPLS support from demarcation to the core edge to support transport for true multi-service
- 2 Legacy integration / migration - Move to more efficient packet-based backhaul infrastructure while maintaining existing 2G/3G TDM site infrastructure and revenues with modules and/or interfaces to support DS1 and DS3 CES
- 3 Time Synchronization - Multiple synchronization options including: 1588v2, Sync-E, ACR, BITS and Any-to-Any Sync interworking. This provides an easy migration path for synchronization - maximize the current investment by upgrading the network slice-by-slice
- 4 Device and Service Management - Point and click provisioning, service management, root cause analysis and network planning tools. Zero-touch provisioning to ease network deployment and training burdens
- 5 Network Resiliency - Multiple network topologies including ring, mesh with sub 50ms protection switching
- 6 Future-proof the RAN - Scalable RAN bandwidth 1GE to 10GbE and MPLS to the demarcation allows room for growth and RAN multi-technology support
- 7 Hierarchical QoS - differentiate between the different types of traffic to allow best QoE and help meet SLAs
- 8 Service Assurance and Maintenance - Rapid remote fault isolation for proactive service management including root cause analysis
- 9 Extended temperature and small footprint to support uncontrolled and small environment applications (like a street cabinet installation)
- 10 Standards-based for multi-vendor interoperability

CELL SITE DEMARCATION



T-Marc 254H -2G/3G/4G CES and Ethernet (Fixed)



T-Marc 300 -3G /4G Ethernet with Advanced OAM



T-Marc 3208SH -2G/3G/4G CES and Ethernet (Modular)



T-Marc 3312SC - All-in-one 2G/3G/4G MPLS/Ethernet and CES to the cell site



T-Metro 7124S -2G/3G/4G 10G NID with CES and Ethernet (Modular)

10 Gig ETHERNET/MPLS AGGREGATION



T5C-XG - 2G/3G/4G Ethernet Services Switch



T-Metro 7124S - 2G/3G/4G MPLS and Ethernet (Modular)



T-Metro 7224 2G/3G/4G MPLS- PE



T-Metro 8006 - High density MPLS/IP service aggregation platform

PWE3 CES AGGREGATION



T-Metro - 2G/3G/4G CES and Ethernet (Modular)

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Cell site demarcation

Cell Site Switching and Demarcation enables service providers and wireless operators to backhaul both TDM (via standards-based CESoPSN and SAToP) and Ethernet traffic over a packet-based RAN as they evolve to next generation 3G and 4G (LTE/WiMAX) services. The solutions provide flexible transport options; multiple resiliency mechanisms; enhanced security and advanced OAM capabilities for remote management, monitoring and rapid fault isolation. Service multiplexing and advanced QoS (HQoS) support per service, per customer granularity.



This versatile family of service demarcation devices provides intelligent and remotely managed, multi-port customer-located equipment (CLE) to deliver managed converged services (voice, video and data) over virtual Ethernet, MPLS/VPLS and IP networks. Those combined with CES options to deliver legacy. In addition to supporting external clock inputs, 1588v2, Sync-E, adaptive, internal and line timing options, the product can provide any-to-any sync interworking. The benefit to the provider is incredibly accurate synchronization across the RAN without wholesale swap out of existing network elements. These products have been optimized for wireless backhaul applications with standards-based synchronization and is temperature-hardened for outdoor installations. T-Marc product line allow service providers to support multiple end users (mobile providers or businesses) on separate customer interfaces or multiple services over a single customer interface without compromising security or quality of service. Because each service is isolated, providers can troubleshoot each individual service without impacting others.

10G Aggregation

This multi-layer Ethernet switch is designed for service providers who need the reliability of the traditional SONET/SDH quality of service and the flexibility to deliver quad play over a 10 Gigabit metro Ethernet network. The T5C-XG's high performance, availability and form factor are ideal for broadband triple-play service aggregation and business Ethernet services. The T5C-XG offers high capacity and compact size (only 1.5RU in height, 10 inches in depth). It supports 24 Gigabit Ethernet plug-in (SFP) ports, two 10 Gigabit XFP ports and an additional expansion slot that houses two 10 Gigabit ports for a full 40Gigabit wirespeed, non-blocking switching.



Provider Edge

The T-Metro 7224 was designed for service providers who need the reliability of the traditional SONET/SDH quality of service and the flexibility to deliver quad play over a 10 Gigabit metro Ethernet network. This carrier-class device offers advanced MPLS/HVPLS capabilities, enabling emerging and incumbent service providers to protect their existing investments, while easily migrating to next-generation services. T-Metro 7224 delivers features such as uncompromised security, advanced HQoS and MPLS/HVPLS.



IP/MPLS high density service aggregation platform

The T-Metro 8006 Telco Systems T-Metro 8000 is next generation MPLS/Ethernet high density service aggregation switch. It provides massive service scalability, carrier-class resiliency, and a industry-leading feature set that supports Hierarchical -QoS, OAM, and L2VPN capabilities. The T-metro 8000 offers best-in class service switch to allow carriers to offer cloud-based services, business Ethernet and mobile backhaul to the edge.



CES Aggregation

The T-Metro 200 supports a wide variety of technologies including Ethernet, Circuit Emulation (CES), MPLS, OAM (operations, administration and maintenance) tools and Hierarchical QoS (H-QoS). As a CES aggregator, the T-Metro 200 enables service providers to maintain cell sites which have older mobile technology (2G, 3G) that uses TDM backhaul and carry T1/E1, DS3, and OC-3/STM-1 traffic transparently across the packet switched network (PSN), using various circuit emulation techniques. The TDM traffic is encapsulated in Ethernet or IP frames to emulate the functionality of a TDM circuit, ensuring that all original feature-set is preserved. In addition to supporting external clock inputs, 1588v2, Sync-E, adaptive, internal and line timing options, the product can provide any-to-any sync interworking. The benefit to the provider is incredibly accurate synchronization across the RAN without wholesale swap out of existing network elements.



Service Management

Telco Systems' EdgeGenie service management platform with advanced planning and resource management functionality offers a complete solution for full life cycle of network deployment from planning to managing, monitoring and maintaining services over Carrier Ethernet and MPLS networks.



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