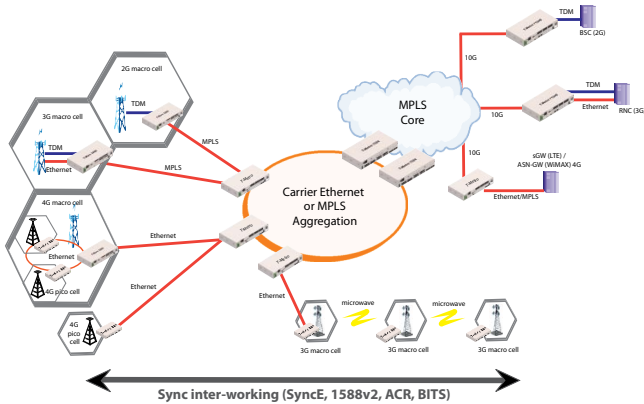


MOBILE BACKHAUL - Managing the Migration

Backhaul traffic from multiple 2G, 3G and 4G cell sites over Carrier Ethernet



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

10 GIG AGGREGATION



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



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



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

PWE3 CES AGGREGATION



T-Metro 200 -2G/3G/4G CES and Ethernet (Modular)



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

MOBILE BACKHAUL SOLUTIONS

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; and advanced OAM capabilities for remote management, monitoring and rapid fault isolation. Service multiplexing and advanced QoS (HQoS) support per service, per customer granularity.

	Q-in-Q	OAM	HQoS	PWE3 CES	Timing	Sync Interworking	MPLS
T-Marc 254H	✓	✓		T1/E1	1588v2		CESoMPLS
T-Marc 300	✓	✓	✓		1588v2		
T-Marc 3208SH	✓	✓	✓	T1/E1 DS3	1588v2 SyncE	✓	VPLS H-VPLS MPLS
T-Metro 7124S	✓	✓	✓	OC-3/STM-1	1588v2 SyncE	✓	VPLS H-VPLS MPLS

Pseudowire (PWE3) TDM Circuit Emulation Service (CES) Aggregation

Telco Systems' PWE3 CES solutions offer the provider a wide range of flexibility in terms of synchronization. In addition to supporting external clock inputs, 1588v2, Sync-E, adaptive, internal and line timing options, we can provide any-to-any sync interworking. The benefit to the provider is incredibly accurate synchronization across the RAN without wholesale swapout of existing network elements.

	Q-in-Q	OAM	HQoS	PWE3 CES	Timing	Sync Interworking	MPLS
T-Metro 7124S	✓	✓	✓	OC-3/STM-1	1588v2 SyncE	✓	VPLS H-VPLS MPLS
T-Metro 200	✓	✓	✓	DS3 OC-3/STM-1			VPLS H-VPLS MPLS

10G Aggregation

These multi-layer Ethernet switches are 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.

	Q-in-Q	OAM	HQoS	PWE3 CES	Timing	Sync Interworking	MPLS
T-Metro 7124S	✓	✓	✓	OC-3/STM-1	1588v2 SyncE	✓	VPLS H-VPLS MPLS
T5C-XG	✓	✓					
T-Metro 7224	✓	✓	✓				VPLS H-VPLS MPLS PE



Int'l Headquarters

Tel: +972-9-866-2525
Fax: +972-9-866-2500
sales.emea@telco.com
http://www.telco.com

US Headquarters

Tel: +1-800-221-2849
Fax: +1-781-551-0538
sales@telco.com
http://www.telco.com

Germany

Tel: +49-241-4635490
Fax: +49-241-4635491
info@batm.de
http://www.telco.com

France

Tel: +33(0)1-567-12-773
Fax: +33(0)1-437-71-780
support@batm.fr
http://www.batm.fr

Asia Pacific

Tel: +65-6224-3112
Fax: +65-6220-5848
info.apac@telco.com
http://www.telco.com

Japan

Tel: +81(3)5215-5709
Fax: +81(3)5215-5704
info.jp@telco.com
http://www.telco.com