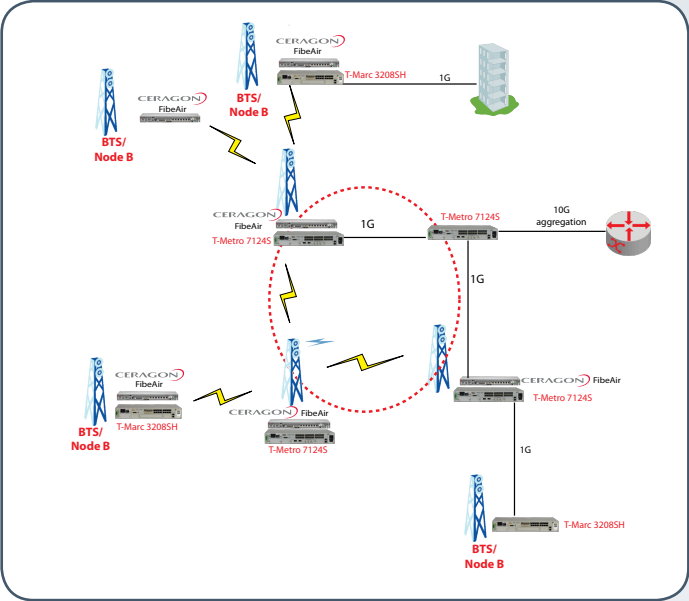


Hybrid Mobile Backhaul

Cost-effective Ethernet migration at the aggregation layer of backhaul networks



The surge in mobile data applications requires a paradigm change in the access and aggregation transport network for mobile backhaul. Higher capacity requirements with strict availability and sub-50 millisecond restoration time, QoS constraints and the need for cost-effective implementation make a compelling case for packet-based solutions. These new solutions enable mobile operators to easily migrate their networks to Carrier Ethernet based MPLS networks at the cell site.

The Ceragon-Telco Systems solution couples Ceragon’s native Ethernet high-capacity wireless transport platform with the Telco Systems family of service-assured Carrier Ethernet mobile backhaul products to deliver cost-effective packet aggregation over ring-based networks. The combination of Ethernet microwave and Ethernet switch routers delivers a simple and robust solution for mobile backhaul and reduces Total Cost of Migration (TCM) from legacy to all-IP networks.

TARGET MARKET SEGMENTS

- Mobile Backhaul Operators
- Municipalities
- Utilities
- Rural service providers

- 1 Attractively priced rich media services to reduce the cost per bit
- 2 Simple and rapid deployment to reduce time to revenue
- 3 Seamless and reliable multi-service delivery over service-aware Ethernet and MPLS networks
- 4 Improved reliability and resiliency with MPLS (FRR) and Ethernet-based(G8031/G8032) sub 50 Msec failover
- 5 MEF-certified and verified risk-free implementation
- 6 Open architecture to support easy interoperability with the core network
- 7 Extensive OAM&P functions to ease maintenance and lower operating cost

Combining Ceragon’s high capacity {Ethernet microwave} and Telco Systems’ carrier-class {optical Ethernet} to provide a hybrid wired/wireless mobile backhaul solution

This hybrid mobile backhaul solution allows mobile providers to efficiently deploy and seamlessly migrate their transport network to IP by introducing carrier-grade Ethernet at the access and aggregation layers. By offering a fiber optic connection when possible and microwave links when needed, the mobile operator can adopt different migration strategies to support their transport network evolution.

Delivering improved over-the-air bandwidth granularity, scalability and availability, the solution allows operators to direct data traffic originating at new LTE, WiMAX or HSPA cell sites to



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a Carrier Ethernet transport solution at the aggregation layer. Connecting MPLS switch routers to service-aware microwave endpoints facilitates a powerful, feature rich and future proof transport mechanism. With the evolution of mobile specifications to be all IP, these advanced Carrier Ethernet solutions can also serve to replace legacy SONET/SDH while offering superior availability mechanisms and overall capacity planning.

In order to achieve carrier-class Ethernet service performance, operations, administration and maintenance (OAM) functions must be readily available to ensure and meet provisioned Service Level Agreements (SLAs). By using MPLS traffic engineering

capabilities and advanced Quality of Service (QoS) mechanisms, the Ceragon-Telco Systems solution supports the highest Quality of Experience (QoE) for the end user. Support for native Ethernet OAM fault management and monitoring protocols standardized by the IEEE, IETF, ITU and MEF are essential for the delivery of assured services end-to-end.

Time synchronization issues are also handled in this solution through seamless interworking of methods of clock synchronization (i.e. 1588v2, SyncE, ACR etc.). The solution also enables multiple clock synchronization schemes to support maximum flexibility in matching the solution to a specific network / network segments.

Cell Site Demarcation

The T-Marc 3208SH service demarcation device is a temperature-hardened, Carrier Ethernet demarcation device to enable service providers and wireless operators to backhaul traffic from multiple 2G, 3G and 4G cell sites over Carrier Ethernet. This device supports a wide variety of technologies including Ethernet, pseudowire and TDM emulation using Circuit Emulation Services (CES), MPLS, OAM tools and H-QoS. This combination of features, technologies and manageability allows service providers to extend the service intelligence to the customer edge offering and maintaining advanced SLAs, thus providing them competitive advantage.



T-Marc 3208SH

1 - 10G Aggregation

The T-Metro 7124S 10Gigabit Enhanced Ethernet Service Switch supports a rich combination of technologies to enable service providers and wireless operators to offer advanced Carrier Ethernet services for wireless backhaul, triple play and broadband aggregation, data center consolidation and high-speed business applications. This temperature-hardened device supports a wide variety of technologies including Ethernet, pseudowire and TDM emulation using Circuit Emulation Services (CES), MPLS, and OAM tools. The 7124S also provides a comprehensive set of synchronization options optimized for cellular operators looking to backhaul their data and voice traffic from the Node-B\BTS to their core network over Ethernet\MPLS transport.



T-Metro 7124S

About Ceragon

Ceragon Networks Ltd. (NASDAQ and TASE: CRNT) is a leading provider of high capacity wireless backhaul solutions that enable fiber-like connectivity for SONET/SDH networks, next generation IP-based networks and hybrid networks. Ceragon's FibeAir® family of products support all wired and wireless access technologies and address Service Providers' need to cost-effectively build-out and scale their networks to meet increasing demands for bandwidth and premium services. Ceragon solutions are deployed by more than 150 service providers of all sizes, as well as in hundreds of private networks, in nearly 100 countries. More information is available at www.ceragon.com.



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