

AFORE Ethernet Technology Solutions

- **MEF UNI 2.2 Software**
- **OAM and SLA Software**
 - Ethernet Service OAM
 - (IEEE 802.1ag, ITU Y1731 and MEF PM/FM IA)
 - MEF MBH IA (MEF 22)
 - Link OAM (IEEE 802.3ah)
 - Ethernet Service Assurance (RFC2544, ITU Y156sam MEF10.1, ITU Y1563)
 - Standard MIBs
- **High Availability Software**
 - Ethernet APS Software (ITU G.8031)
 - Ethernet Ring Protection (ITU G.8032)
 - RSTP/MSTP (IEEE 802.1s, w)
 - LAG/LACP (IEEE 802.1ax)
- **Security Subsystem**
 - CryptoWIRE – up to 4x GE wire speed AES-256 encryption
- **Bandwidth Optimization Subsystem**
 - EtherPACK – up to 4xGE loss less compression
 - EtherCORRECT – Packet Loss recovery
 - End to end jumbo frame transport

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AFORE InterPort Software and Ethernet Sub-Systems Solutions for MBH

New mobile applications and services such as mobile video, smart phones mobile applications, and mobile broadband have significantly driven increased bandwidth requirements for mobile backhaul networks. Mobile operators and traditional Service Providers are looking for Ethernet to address this critical issue by delivering scalable bandwidth in the mobile backhaul networks. Ethernet provides 10 times more bandwidth than legacy technologies, significantly reduces operational expense, and is the most optimal technology for the next generation of IP-based mobile services such as LTE. Also, the cost benefits and wide availability of Ethernet connectivity over IP/MPLS vs dedicated dark fibre is enormous.

However, a large scale Ethernet deployment in mobile backhaul networks presents several challenges. Network Operators require similar tools and technologies that they have in TDM based backhaul infrastructure, including:

- **Enhanced OAM** capabilities for network operation, fault management and service assurance.
- **Ethernet High Availability** and protection capabilities equivalent to SONET/SDH networks
- **Security** – Ethernet as a shared packet network requires wire speed encryption and secure management for sensitive applications
- **Synchronization** – Transport timing synchronization over packet network is more challenging due to jitter and loss typically introduced by Ethernet network.
- **End to end QoS** – Backhaul networks play a critical role in guaranteeing end to end SLA and therefore require advanced QoS/CoS service assurance solutions
- **Bandwidth Optimization** – Ethernet based backhaul networks need to support bandwidth overbooking and statistical multiplexing, bandwidth optimization such as compression, prioritization based on applications and CoS and advanced packet error correction and packet loss recovery
- **Multiservice Interworking** – Evolving from hybrid backhaul mode to unified backhaul mode, i.e. backhaul 2G/3G/4G on a unified Ethernet network, requires multi-service interworking capability.

AFORE InterPort™ Carrier Ethernet Software and Ethernet sub-systems help networking equipment vendors to address the above challenges of Ethernet based mobile backhaul networks while significantly reducing development costs and dramatically improving their Time-to-Market in delivering value-add solutions to their customers.

MBH Challenges

- **Ensure SLA and QoS**
- **Lower OPEX**
- **High Availability**
- **Optimize Bandwidth**
- **Security**
- **Synchronization**
- **Unified Backhaul for 2G/3G/4G**

AFORE Answers

- **CoS aware Service Assurance SW suite**
- **Full OAM software solution**
- **Protection SW suite: LAG, RSTP, G.8031, G.8032**
- **Bandwidth compression and packet recovery**
- **Multi-Gpbs AES-256 encryption**
- **IEEE1588v2 Expertise**
- **Multi-Service Interworking (PWE3) Technology**

