Overview of the MEF

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European Advanced Networking Test Center (EANTC)
Managing Director
Agenda

- Metro Ethernet Forum
- Carrier Ethernet Definition and Services
- Market Acceptance
- The Technical Work of the MEF
- MEF Certification Program
- MEF Membership
- Mobile Backhaul Initiative
MEF Mission & Key Areas of Work

*Accelerate the worldwide adoption of Carrier Ethernet networks and services*

Specifications and Liaisons

Marketing Carrier Ethernet

Certification Program
Carrier Ethernet Defined

The 5 Attributes of Carrier Ethernet

- Carrier Ethernet is a ubiquitous, standardized, carrier-class SERVICE defined by five attributes that distinguish Carrier Ethernet from familiar LAN based Ethernet
- It brings the compelling business benefit of the Ethernet cost model to achieve significant savings

- Standardized Services
- Scalability
- Service Management
- Reliability
- Quality of Service
Attribute 1: Standardized Services

- E-Line, E-LAN provide transparent, private line, virtual private line and multi-point to multi-point LAN services.
- Ubiquitous service available globally & locally
- Standardized Ethernet interfaces - requires no changes to customer LAN equipment
- Ideally suited to converged voice, video & data networks
- Wide choice and granularity of bandwidth and QoS options
Attribute 2: Scalability

- Carrier Ethernet is ideal for the widest variety of business, information, communications and entertainment applications with voice, video and data
- Spans Access, Metro, Global Services over a wide variety of physical infrastructures implemented by a wide range of Service Providers
- Scalability of bandwidth from 1Mbps to 10Gbps and beyond, in granular increments
Attribute 3: Reliability

- The ability for the network to detect & recover from incidents without impacting users
- Meeting the most demanding quality and availability requirements
- Rapid recovery time when problems do occur, as low as 50ms
Attribute 4: Quality of Service

- Carrier Ethernet standardizes Service Level Agreements (SLAs) based on well-defined Classes of Service (CoS)
- End-to-end performance matching business, mobile, and triple play customer requirements
  - CIR, frame loss, delay and delay variation characteristics
Attribute 5: Service Management

- Monitor, diagnose and centrally manage the network, using standards-based vendor independent implementations
- Carrier-class Ethernet OAM
- Standardized service provisioning
Carrier Ethernet Scope and Reach

Bringing vastly extended scalability for business and residential users

- Internet
- HD TV TVoD, VoD
- Gaming, Business Backup, ERP
- Voice/Video Telephony Gateway
- Wireless Backhaul
- Residential Triple-Play
- Broadband mobile data/video
- FTTx and DSLAM, Cable Modem
- Small/Medium Business
- E-Line and E-LAN service
- COPPER, FIBER, COAX and WIRELESS
- ACCESS
- GLOBAL & NATIONAL
- METRO
- ACCESS
- Video Source
- Video Source

Wireless
Backhaul

Gaming, Business
Backup, ERP

Voice/Video
Telephony Gateway

Residential
Triple-Play

FTTx and DSLAM, Cable Modem

Small/Medium
Business

E-Line and E-LAN service

COPPER, FIBER, COAX and WIRELESS

ACCESS

GLOBAL & NATIONAL

METRO

ACCESS

Video Source

Video Source
Worldwide Growth

• Worldwide revenue for Business Ethernet Services at $9 billion now, predicted to mount steadily to $30 billion by 2012.

• Robust enterprise customer demand is projected for the next five years, with double-digit annual growth worldwide

• Service providers throughout the world are committed to Ethernet as the future ubiquitous standard for network service connectivity.

• Ethernet equipment vendors are actively enabling this important transition.

Business applications for Ethernet Services include Dedicated Internet Access (DIA), Ethernet Private Lines, Ethernet LAN / VPLS, and Ethernet access to other network services (e.g., IP/MPLS VPNs, Frame Relay, etc.).
MEF – Incubator for New Industry Solutions

- **Mobile Backhaul Working Group**
  - Technical and Marketing work to enable and promote the use of CE

- **Wholesale Access Interconnect Working Group**
  - Facilitating inter-carrier access service definition and ordering

- **Provisioning, Assurance and Billing**
  - Assist with scalable, accurate and rapid deployments by defining “best practices” for EMS, NMS, OSS and BSS operations

- **Others: Access Technologies, Cable, Security**
MEF Marketing Focus

Marketing Carrier Ethernet

Phase 1
Drive Service Provider Adoption of Carrier Ethernet

Phase 2
Enable SP Services Growth, Certification, SP Collaboration

Phase 3
Increase Enterprise Demand

2001 2003 2005 2007 2009
Timeline for Western Europe
The MEF Certification Program
– An important part of the MEF’s mission to accelerate the deployment of Carrier Ethernet in the Access, MAN & WAN

Manufacturer and Service Provider Certification
– Certification for Carrier Ethernet systems and equipment that deliver MEF compliant Ethernet services
– Extend the program to assure enterprise and residential subscribers that Service Providers can deliver consistent Carrier Ethernet services compliant with MEF specifications

Current Certification Program

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### Equipment Vendors, Test Companies, Lab Members

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• Comcast
• Cox Business
• Demand Broadband
• Embarq

• FiberTower
• KDDI R&D Laboratories
• Level 3 Communications
• ntl: Telewest
• NTT Advanced Technology
• Optimum Lightpath
• Orange Business Services
• PCCW
• PT Prime
• Qwest Communications
• RCN Business Solutions
• Reliance Communications
• Shanghai Information Network
• Singapore Telecom
• Sprint
• Suddenlink
• Swisscom
• Symphony Communication
• Telecom Italia
• TeliaSonera AB
• Telus
• Time Warner Cable
• Time Warner Telecom
• T-Systems
• Uecomm
• Verizon Business
• VSNL International
• XO Communications

… Now 139 Members
• Provide scalable, economic, dependable Carrier Ethernet-based solution for radio access network (RAN) backhaul
• Implementation Agreement (IA) provides guidelines how to apply MEF standards for
  – Legacy mobile backhaul transport
  – Hybrid offload (HSPA/data via CE, voice via TDM/ATM) transport
  – Next generation (IP-only base station) transport
State of Mobile Backhaul Interoperability

– 15 vendors interoperated end-to-end across multiple transport technologies (MPLS, PBB-TE, T-MPLS)

– Verified a wide range of TDM/ATM circuit emulation solutions, evaluated clock sync in some combinations

– Resilience showed < 100 ms in all MPLS, T-MPLS combinations tested

– Great progress in a very complex environment!
In Summary…..

- Ethernet Services are flourishing
- Global standardization is well on its way
- Certification and Interoperability Testing are becoming an important ingredient to widespread adoption
- The MEF continues to adjust its programs to meet the industry’s demands and we welcome your participation
Questions?
Accelerating Worldwide Adoption of Carrier-class Ethernet Networks and Services

www.MetroEthernetForum.org