DPoE Overview

Matt Schmitt, CableLabs
Curtis Knittle, CableLabs
DPoE Project Objectives

- Facilitate multi-vendor interoperability
- Develop specifications for EPON devices to support DOCSIS network provisioning and service concepts
- Define additional functionality to support Metro Ethernet services (Ethernet Private Line)
DOCSIS Provisioning

- Proven – DOCSIS OSS has been in use for years
- Scalability – DOCSIS OSS provisions millions of devices
- Troubleshooting – systems in place to troubleshoot problems
- Knowledge base – existing knowledge of OSS, test systems, etc.
Ethernet Passive Optical Networks (EPON)

- Scalable capacity
  - 1 Gbps and 10 Gbps systems
- Lowest total cost of ownership among all competing fiber last-mile solutions
- Standards-based equipment and components
- Capable of providing voice, video and data services
- EPON has more ports deployed globally than any other fiber network technology
DPoE Specifications

- Brings the mature systems and business processes of the DOCSIS backoffice to EPON access networks
- Enables full vendor/equipment interoperability – similar to CMTS and Cable Modems
- Leverages existing technical and customer care knowledge base, systems, and processes
- Developed by the MSO community and CableLabs
- Is NOT DOCSIS over fiber
DPoE Elements and Communication

DOCSIS OSS
Servers

DNS
DHCP
SNMP
TFTP
SYLOG
Time Srvr

IP Network

CMTS

HFC Network

CM
IPv4 Host
IPv6 Host
IPv4 Host
IPv6 Host
IPv4 Host
IPv6 Host
IPv6 Host

IP Management

DPoE ONU
IPv4 Host
IPv6 Host
IPv4 Host
IPv6 Host
IPv6 Host
IPv6 Host

IP Management
eOAM

DPoE System
Virtual CM (vCM)

R
OLT

Virtual CM (vCM)

PON Network

3/13/12
DPoE 1.0 Specs

- **MULPI** – Specifications for support of a subset of DOCSIS 3.0 MULPI functionality with additional EPON requirements.
- **MEF** – Specifications for MEF services added to DOCSIS static configuration provisioning model.
- **OAM** – Extensions beyond IEEE 802.3ah and 802.3av requirements.
- **PHY** – Options within EPON declared mandatory, and adds additional requirements.
- **SEC** – Provide transparent support of DOCSIS device authentication, code verification, and additional security.
- **IPNE** – Best practices and requirements for IP network element management and operations.
- **OSSI** – Specifications for support of a subset of DOCSIS 3.0 OSSI functionality with additional EPON requirements.
DPoE specs essentially build on SIEPON standard.
DPoE Interoperability (EPL Service)
Thank you!