ADVA™
Optical Networking

G.8013/Y.1731 Frame origination at MIPs

John Messenger, 802.1 July 2013, v1

G.8013/Y.1731 revision

- Revised G.8013/Y.1731 was consented at SG15 at its July 2013 plenary
- Includes
  - G.8013/Y.1731 (07/2011)
  - Corrigendum 1 (10/2011)
  - Amendment 1 (05/2012)
  - New changes (see following slides)

Changes in the revision

- Changes, about which this presentation does not talk, include
  - Rooted multipoint
  - 1SL: known as Dual-ended ETH-SLM
  - CSF clarification
  - throughput testing
  - frame loss measurement clarification
  - single-ended ETH-LM clarification
  - ETH-DM renaming:
    - one-way ETH-DM renamed to dual-ended ETH-DM
    - two-way ETH-DM renamed to single-ended ETH-DM
  - Allowed addresses in loss/delay-measurement frames
  - ICC-based MEG_ID format
  - New annex on ETH-LM and Link Aggregation
- Changes discouraging use of VSM/VSR/EXM/EXR by other SDOs
  - Relates to MEF's request for code points

CFM op-codes and types

- Four op-codes from the ITU-T range have been reserved for MEF.
- Two TLV-types from the ITU-T range have been reserved for MEF.
- The relevance of different CFM op-codes to MEPs and MIPs used to be specified in G.8013/Y.1731 but some of them have now been delegated to other ITU-T recommendations
  - Linear APS (39) refers to G.8031 – used to specify “MEPs”
  - Ring APS (40) refers to G.8032 – used to specify “MEPs”

CFM PDU definitions

- ETH-LM PDU PDU has changed
  - Flags field has a newly defined bit (“Type”) to indicate pro-active or on-demand operation
  - PDU version field updated from 0 to 1.
- EXM/EXR/VSM/VSR PDU wording has changed
  - Old text said these were used “by a MEP”
  - New text omits this
  - This change was made in contravention of the decision made in drafting.
- 1SL PDU format defined

CFM PDU addressing

- Choice of DA for CFM PDUs has been made application-specific.
- Multicast Address Classes:
  - Class 1: Peer MEPs
  - Class 2: All MIPs and peer MEPs (this was more constrained before)
  - Multicast addresses for Ring APS (G.8032) added, using a range of addresses derived from the ITU-T OUI.

Compatibility between 802.1Q and Y.1731

- Some of these changes may be because G.8032 wants MIPs to originate frames
  - G.8032 introduced Ring APS conceptually in its first version (2008)
  - G.8032 uses Ring APS CFM messages to do this
  - G.8021 describes a combination of the ETHDi/ETH_A and ETHDi_FT to do this (Figure 9-4/G.8032 and Figure 9-11/G.8021)
  - It's not clear whether this thing is really a MIP or a MEP or a MP at all
- 802.1Q: **3.106 MIP Half Function (MHF):** A CFM entity, associated with a single Maintenance Domain, and thus with a single MD Level and a set of VIDs, that can generate CFM PDUs, but only in response to received CFM PDUs.
- Does it matter if Y.1731 specifies MIPs as initiating frames?
- How close do we want the architecture of Y.1731 and 802.1Q CFM to remain?

Options

- We could liaise to Q12/15 (Architecture) to request that they align their MP architecture more closely with 802.1Q.
- We could liaise to Q10/15 and Q9/15 and request that they continue to work closely with 802.1 to retain architectural compatibility.
- As the latest revision of Y.1731 introduced this change (against my advice) we could comment on this document and request changes to Y.1731.
  - IEEE SA is a sector member of ITU-T and we can submit an AAP comment if we want to – requires 802.1 and EC vote this week.