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Question(s): 9/15

LIAISON STATEMENT

Source: ITU-T Study Group 15

Title: Definition of etherwire encapsulation

LIAISON STATEMENT

For action to: IEEE 802.1

For comment to:

For information to:

Approval: Agreed to at Question 9/15 meeting (Darmstadt, 1-5 March 2010)

Deadline: 31 May 2010

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Introduction

Work is underway in Question 9 of ITU-T Study Group 15 (Q9/15) on a new draft recommendation G.ptneq (Packet Transport Network Equipment) which may result in addition or amendments to G.8021 (Ethernet Equipment Functionality). Several of the envisaged client signals encapsulations of non-Ethernet clients in [1] involve the introduction of additional encapsulations. This liaison asks IEEE 802.1 for clarification on the capability to transport these client signals over a 802.1Q VLAN bridged network.

Background

ITU-T Q.9/15 is developing a new recommendation in which packet transport network equipment examples are described. A packet transport network is defined to contain four layers: Virtual Channel (VC), Virtual Path (VP), Virtual Section (VS) and Physical Media (PHY). A Virtual Channel layer connection carries an individual, bundled or port based customer service, a Virtual Path layer connection carries an aggregate of Virtual Channel layer connections, a Virtual Section layer connection carries either an aggregate of Virtual Channel layer connections or an aggregate of Virtual Path layer connections and a Physical Media layer connection carries one Virtual Section layer connection.

One of the identified VC layer technologies is an Ethernet based VC layer. This Ethernet based VC layer will support the transport of all customer service signal types, including Ethernet, PDH, ATM, FR, HDLC, PPP and future customer service signals.

Discussion

In absence of standardized mappings for ATM, FR, HDLC, PPP over an Ethernet based VC layer, Q.10/15 is studying the definition of such mappings on the basis of a generic 'EtherWire' based encapsulation. It is following a similar approach as specified in MEF8 [2] for PDH over Ethernet. The IETF PWE3 encapsulation of those client signals is complemented by an Emulated Circuit ID header and then preceded by a 16-bit SubType field and a Type field; <TYPE, SUBTYPE, ECID, PWE3 encapsulated client>. When in future other client signals are identified it is possible to encapsulate those other client signals for transport over an Ethernet based VC layer in a similar manner using <TYPE, SUBTYPE, ECID, encapsulated client>.

The Type field indicates that an 'EtherWire' encapsulation will follow. The SubType field indicates which client layer signal is encapsulated and which encapsulation method is used (if more than one such encapsulation is defined). The SubType field provides functionality which is similar to the functionality of the SDH Signal Label, OTN Payload Type and GFP User Payload Indication; it allows verifying if the two endpoints of an Ethernet based VC layer connection are configured to support the same client signal and same encapsulation type. SubType field values for ATM, FR, HDLC, PPP follow the PW Type values specified in RFC4446 (and registered as the IANA PWE3 'PW type').

Question

ITU-T Q.9/15 and Q.10/15 assume that such EtherWire encapsulated client signals are transportable also through 802.1Q PB, PBB, PBB-TE networks, when applied at an S-Tagged or I-Tagged LAN input port of those networks. ITU-T Q.9/15 and Q.10/15 would appreciate feedback from IEEE 802.1 if such transport would not be possible.

We would appreciate a response in time for our next meeting on this topic to be held May 31 – June 11, 2010.

We look forward to your reply and continued assistance.

References

[1] wd13, *Non-Ethernet service mapping into Ethernet VC frame format*s, Q9/15 Darmstadt interim March 1-5, 2010 (attached below)

[2] MEF 8 , *Implementation Agreement for the Emulation of PDH Circuits over Metro Ethernet Networks*, Oct 2004