



Question(s): 12, 13/15

Geneva, 31 May - 11 June 2010

LIAISON STATEMENT**Source:** ITU-T Study Group 15**Title:** ESMC frames in Synchronous Ethernet links

LIAISON STATEMENT**For action to:** IETF PWE3 and TICTOC**For comment to:****For information to:****Approval:** Agreed to at Question 13/15 meeting (San Jose, 1-5 March, 2010)**Deadline:** 31 May 2010

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Q13/15 is responsible for network synchronization within ITU-T SG15. During the interim meeting held on March 1-5 2010, it has been agreed to send the following information on ESMC frames of Synchronous Ethernet to IETF.

ESMC frames in Synchronous Ethernet links

ITU-T Recommendation G.8264 defines an Ethernet Synchronization Messaging Channel (ESMC) for Synchronous Ethernet links, in which Synchronization Status Messages (SSM) are exchanged. The format for ESMC messages was chosen to be an Ethernet slow protocol (i.e., the messages are sent to multicast Ethernet destination address 01-80-C2-00-00-02 and use EtherType 88-09) in order to prevent the messages from leaking from a synchronized link to another link. This format was chosen under the assumption that slow protocol PDUs are never forwarded by an Ethernet switch, and thus are always relevant to the physical link over which they are forwarded.

After specifying the ESMC message format we discovered a case where the assumption may not hold. When Ethernet frames are forwarded over an Ethernet Pseudowire as defined in RFC 4448 [1], the PW encapsulation function is agnostic to the frame type. If the Ethernet PW is part of VPLS service, the standard 802.3 bridging function precedes the encapsulation, and will correctly block ESMC messages.

However, in other cases, as for RFC4448 Ethernet raw mode for Ethernet PWs may potentially forward ESMC messages over non-synchronized physical layers. This behavior would also apply to MPLS-TP Client Adaptation [2].

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ITU SG15 requests that the IETF PWE3 WG specify if Synchronous Ethernet links may be present, then a Native Service Processing (NSP) function MUST be supplied that forwards, peers or discard slow protocol frames. In case of ESMC messages, the NSP function MUST peer or discard the frames and MUST not forward such frames over the pseudowires.

If the PW device supports Synchronous Ethernet, the NSP function MUST peer the ESMC frames and leave the ESMC process handling the ESMC messages appropriately.

Furthermore, in order to support interoperability with old Ethernet PW equipment that may tunnel the ESMC frames, it is suggested that the NSP function MUST always discard ESMC frames at the tail end of a PW.

References:

[1] RFC4448: Encapsulation Methods for Transport of Ethernet over MPLS Networks

<https://datatracker.ietf.org/doc/rfc4448/>

[2] draft-fbb-mpls-tp-data-plane: MPLS-TP Data Plane Architecture

<https://datatracker.ietf.org/doc/draft-fbb-mpls-tp-data-plane/>