IEEE 802.1

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Re: Domain-independent peer delay

Dear Mr. Eidson and Mr. Arnold:

The purpose of this letter is to request a new feature in the next edition of IEEE Std 1588 that will allow a PTP profile to specify that the peer delay protocol is invoked independently of any PTP domain. We would like to use this feature in the revision of IEEE Std 802.1AS, which is currently under development.

The revision of 802.1AS will allow the use of multiple domains for the purposes of redundant GMs and redundant paths, and other applications that require the use of multiple domains. The PTP profile included in 802.1AS specifies ordinary clocks and boundary clocks, and measures mean path delay using the peer delay protocol. In the model in 802.1AS, the peer delay event messages are timestamped using the free-running local oscillator, and the resulting mean path delay is converted to the timebase of the GM. This means that the initial computations performed are identical in all of the PTP domains.

As you know, each PTP domain is an independent instance of PTP. This means that in a network with *N* domains, the peer delay computations are replicated *N* times. We believe this is inefficient and unnecessary; it is necessary to perform the peer delay computations once, rather than *N* times. Since any particular domain can fail or be disabled at any given time, it would be advantageous to allow the peer delay mechanism to run independently of any domain.

In summary, we are requesting that the next edition of IEEE Std 1588 allow a PTP profile to specify that the peer delay protocol is invoked independently of any PTP domain. We expect that individuals will make detailed proposals for this feature.

Respectfully submitted,

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CC: John Messenger, Vice-chair, IEEE 802.1 WG;   
Michael Johas-Teener, Chair, IEEE 802.1 TSN Task Group