IEEE 802.1

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Re: Network-based, application independent assessment of slave timing error

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 to specify a mechanism to convey information related to a slave’s timing error as referenced to network observable events. We would like to use this feature in the revision of IEEE Std 802.1AS, which is currently under development.

It is desired that the revision of 802.1AS leverage a common network-based mechanism to observe and monitor a slave’s timing error in both laboratory and in-field conditions. It is believed that such a mechanism, common to 1588 profiles, will enable broad adoption in both slave-port implementation, and the Test & Measurement ecosystem. As the number of low-cost time-aware systems grows, the need has similarly grown for a common mechanism to define observation mechanisms to validate a slave’s recovered time in the absence of a physical signal locked to that recovered timebase.

Proposals to access slave timing information are known to have been made in both the IEEE 802.1 TSN Task Group as well as the IEEE 1588 Working Group pertaining to this matter. By way of reference, but not recommendation, such proposals include the following individual contribution: http://www.ieee802.org/1/files/public/docs2015/as-ren-probing-slave-te-proposal-1115-v06.pdf. Any solution adopted by IEEE Std 1588 that allows a slave’s timing error to be assessed: with minimal implementation burdens; via purely network-based mechanisms; suitable for laboratory and in-field environments; is anticipated to meet the needs of IEEE Std 802.1AS.

In summary, we are requesting that the next edition of IEEE Std 1588 specify a mechanism to convey slave timing error as observable from network based events. We expect that individuals will make detailed proposals for this feature.

Respectfully submitted,

Glenn Parsons

Chair, IEEE 802.1 WG

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