Date: 22 August 2014

<div align="center">IEEE P1588 Working Group Liaison</div>

To: Michael Johas Teener

From: IEEE P1588 Working Group

Subject: Liaison request to IEEE 802.1 Time-Sensitive Networking Task Group from IEEE P1588 Working Group on the future accuracy requirements and the link asymmetry compensation

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Dear Mr. Michael Johas Teener and members of Time-Sensitive Networking Task Group,

IEEE 802.1 Time Sensitive Networking (TSN) currently uses 802.1AS-2011, which includes a profile of the IEEE1588-2008, and which specifies an end-to-end time-synchronization performance of 500 ns maximum absolute value time error over 7 hops. The P1588 WG is considering adding specialized solutions to the next edition of IEEE1588 to enable enhanced synchronization accuracy, including sub-ns accuracy of synchronization under specific conditions (e.g. L1 frequency distribution with appropriately stringent noise transfer/generation characteristics, and hardware support for precise phase measurement).

The IEEE P1588 Working Group is aware that the TSN Task Group (TG) is focusing on a new range of industrial applications. It would be advantageous for the work of the P1588 WG to know whether the TSN TG is considering more stringent time-synchronization requirements, which could benefit from the new developments in P1588. These could include network-level and/or equipment requirements, for example:

1. Achievement of end-to-end time-synchronization performance that is better than what is currently achievable, and possibly in the ns to sub-ns range,
2. Extension of the number of hops for the end-to-end time-synchronization performance requirement (e.g., so that the per-hop time-synchronization performance would be better than what is currently achievable, for similar end-to-end performance).

We would appreciate being informed if any of the above is considered/discussed/foreseen/anticipated/of interest (e.g. tentative numbers, work timetable).

The work of P1588 WG is also expected to cover link asymmetry compensation. In particular, it will possibly provide a model for measurement and/or calibration of ingress and egress delays introduced by the reception and transmission paths. A model and/or protocol tools for automatic medium asymmetry compensation are also considered. It seems that some of this work might overlap with the work of TSN WG. Therefore, it is mutually beneficial to keep up-to-date with the developments and possibly cooperate on the overlapping parts.

On behalf of IEEE P1588 Working Group,

Sincerely,

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