

Timing and Synchronization for Time-Sensitive Applications in Bridged Local Area Networks

Gen 2

Revision 1

Draft PAR

March 9, 2011

**This revision incorporates comments from the
January, 2011 and March, 2011 IEEE 802.1 AVB
meetings**

Title (4)

Draft: IEEE Standard for Local and Metropolitan Area Networks –
Timing and Synchronization for Time-Sensitive Applications in
Bridged Local Area Networks

PAR Scope (13)

- This amendment to IEEE Std 802.1AS – 2011 specifies enhancements
- Objective of backward compatibility with gen1 (could include a means of discovering if a link partner is gen1 or gen2)
- The enhancements to be considered include:
 - Support for link aggregation (IEEE 802.1AX, 802.1AXbk (link aggregation amendment), and 802.1AXbq (link aggregation amendment: Distributed Resilient Network Interconnect))
 - Support for new media types, with corresponding media-dependent layers, e.g., IEEE 1901 and WiFi Direct
 - Interoperability with one-step clocks on receive (but no requirement to generate one-step Sync messages)
 - Support of redundant paths

PAR Scope (13)

- Enhancements (cont.):
 - enhance the determination of asCapable (e.g., longer cable lengths, new media types)
 - Incorporation of interfaces specified in IEEE 802.3bf into the IEEE 802.3 full-duplex media-dependent layer model
 - Improved performance
 - Carrying information on alternate time scales (e.g., local time for a respective time zone)
 - Automatic measurement of link delay asymmetry
 - Different parameter set for other applications, e.g., industrial

PAR Scope (13)

Is the completion of this document contingent upon the completion of another document?

- This standard is not contingent on the completion of any other documents

PAR Purpose (14)

This amendment allows IEEE 802.1AS to be used:

- with a greater number of network media types and a greater variety of network configurations, and
- more effectively with existing and new media types and network configurations

PAR Reason (15)

- When development of IEEE 802.1AS – 2011 began, the main focus was on audio/video (A/V) applications
 - The initial focus was on full-duplex IEEE 802.3 media, and IEEE 802.11, IEEE 802.3 EPON, and Coordinated Shared Network media were added.
- While IEEE 802.1AS – 2011 allows effective transport of synchronization over gPTP networks that contain the above media to support A/V applications, the enhancements described in the scope will allow it to be used more effectively for a greater variety of applications (e.g., embedded), and with a greater variety of network media and configurations.