P802.1ASyz

Submitter Email:
Type of Project: Amendment to IEEE Standard 802.1AS-2020
Project Request Type: Initiation / Amendment
PAR Request Date:
PAR Approval Date:
PAR Expiration Date:
PAR Status: Draft
Root Project: 802.1AS-2020

1.1 Project Number: P802.1ASyz
1.2 Type of Document: Standard
1.3 Life Cycle: Full Use

2.1 Project Title: IEEE Standard for Local and Metropolitan Area Networks--Timing and Synchronization for Time-Sensitive Applications Amendment: Support for IEEE 802.3 links using the Clause 4 MAC in half-duplex.

3.1 Working Group: Higher Layer LAN Protocols Working Group(C/LM/802.1 WG)
3.1.1 Contact Information for Working Group Chair:
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3.2.1 Contact Information for Standards Committee Chair:
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4.1 Type of Ballot: Individual
4.2 Expected Date of submission of draft to the IEEE SA for Initial Standards Committee Ballot: Mar 2025
4.3 Projected Completion Date for Submittal to RevCom: Oct 2025

5.1 Approximate number of people expected to be actively involved in the development of this project: 30
5.2.a Scope of the complete standard: This standard specifies protocols, procedures, and managed objects used to ensure that the synchronization requirements are met for time-sensitive applications, such as audio, video, and time-sensitive control, across
networks, for example, IEEE 802 and similar media. This includes the maintenance of synchronized time during normal operation and following addition, removal, or failure of network components and network reconfiguration. It specifies the use of IEEE 1588(TM) specifications where applicable in the context of IEEE Std 802.1Q(TM)-2018. Synchronization to an externally provided timing signal [e.g., a recognized timing standard such as Coordinated Universal Time (UTC) or International Atomic Time (TAI)] is not part of this standard but is not precluded.
5.2.b Scope of the project: This amendment specifies protocols, procedures, and managed objects to add support for the IEEE 802.3 Clause 4 MAC operating in half-duplex, including IEEE 802.3cg (10BASE-T1S).
The operation and functionality of the base standard for its currently supported media types will not change as well as its compatibility to being a profile of IEEE 1588™-2019.
This amendment also addresses errors and omissions in the description of existing functionality.

5.3 Is the completion of this standard contingent upon the completion of another standard? No

5.4 Purpose: This standard enables systems to meet the respective jitter, wander, and time synchronization requirements for time sensitive applications using the IEEE 802.3 10BASE-T1S PHY with the IEEE 802.3 Clause 4 MAC operating in half-duplex.
This includes applications that involve multiple streams delivered to multiple endpoints. To facilitate the widespread use of packet networks for these applications, synchronization information is one of the components needed at each network element where time-sensitive application data are mapped or demapped or a time-sensitive function is performed.
Change to Purpose: This standard enables systems to meet the respective jitter, wander, and time~~-~~synchronization requirements for time~~-~~sensitive applications~~,~~ using the IEEE 802.3 10BASE-T1S PHY with the IEEE 802.3 Clause 4 MAC operating in half-duplex. This ~~including~~ includes ~~those~~ applications that involve multiple streams delivered to multiple~~-end~~ endpoints. ~~stations.~~ To facilitate the widespread use of packet networks for these applications, synchronization information is one of the components needed at each network element where time-sensitive application data are mapped or demapped or a time-sensitive function is performed. ~~This standard leverages the work of the IEEE 1588 Working Group by developing the additional specifications needed to address these requirements.~~
5.5 Need for the Project: Support is needed in some applications that use time synchronization along with the IEEE 802.3 Clause 4 MAC operating in half-duplex (e.g., automotive in-vehicle networks and industrial automation networks).
5.6 Stakeholders for the Standard: Developers, manufacturers, distributors, or users of time-sensitive applications, components, and equipment.

6.1 Intellectual Property

6.1.1 Is the Standards Committee aware of any copyright permissions needed for this project?
No

6.1.2 Is the Standards Committee aware of possible registration activity related to this project?
No

7.1 Are there other standards or projects with a similar scope? No
7.2 Is it the intent to develop this document jointly with another organization? No

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8.1 Additional Explanatory Notes: #5.2:
"managed objects" has been added
IEEE Std 802.1Q, IEEE Standard for Local and metropolitan area networks - Bridges and Bridged Networks
IEEE Std 1588, IEEE Standard for a Precision Clock Synchronization Protocol for Network Measurement and Control Systems
UTC - Coordinated Universal Time
TAI - International Atomic Time

#6.1.b: Changed to "yes" and explanation added