P802.1AS

Submitter Email: tony@jeffree.co.uk
Type of Project: Revision to IEEE Standard 802.1AS-2011
PAR Request Date: 16-May-2014
PAR Approval Date:
PAR Expiration Date:
Status: Unapproved PAR, PAR for a Revision to an existing IEEE Standard

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

2.1 Title: Standard for Local and Metropolitan Area Networks - Timing and Synchronization for Time-Sensitive Applications

Changes in title: ~~IEEE~~ Standard for Local and Metropolitan Area Networks - Timing and Synchronization for Time-Sensitive Applications~~in Bridged Local Area Networks~~

3.1 Working Group: Higher Layer LAN Protocols Working Group (C/LM/WG802.1)
Contact Information for Working Group Chair
Name: Glenn Parsons
Email Address: gparsons@ieee.org
Phone: 613-963-8141
Contact Information for Working Group Vice-Chair
Name: John Messenger
Email Address: jmessenger@advaoptical.com
Phone: +441904699309

3.2 Sponsoring Society and Committee: IEEE Computer Society/LAN/MAN Standards Committee (C/LM)
Contact Information for Sponsor Chair
Name: Paul Nikolich
Email Address: p.nikolich@ieee.org
Phone: 857.205.0050
Contact Information for Standards Representative
Name: James Gilb
Email Address: gilb@ieee.org
Phone: 858-229-4822

4.1 Type of Ballot: Individual
4.2 Expected Date of submission of draft to the IEEE-SA for Initial Sponsor Ballot: 07/2016
4.3 Projected Completion Date for Submittal to RevCom: 02/2017

5.1 Approximate number of people expected to be actively involved in the development of this project: 40
5.2 Scope: This standard specifies the protocol and procedures 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 Std 1588 specifications where applicable in the context of IEEE Std 802.1Q. Synchronization to an externally provided timing signal (e.g., a recognized timing standard such as UTC or TAI) is not part of this standard but is not precluded.

Changes in scope: This standard specifies the protocol and procedures used to ensure that the synchronization requirements are met for time-sensitive applications, such as audio, ~~and~~ video, ~~across bridged~~ and ~~virtual~~time-sensitive ~~bridged~~control, ~~local~~across ~~area~~ networks~~consisting of local area network (LAN) media where the transmission delays are fixed and symmetrical~~; for example, IEEE 802~~.3~~ ~~full duplex~~and ~~links~~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 Std 1588 specifications where applicable in the context of IEEE Std 802.~~1D-2004 and IEEE Std 802.~~1Q~~-2005~~.~~1~~ Synchronization to an externally provided timing signal (e.g., a recognized timing standard such as UTC or TAI) is not part of this standard but is not precluded.

5.3 Is the completion of this standard dependent upon the completion of another standard: No
5.4 Purpose: This standard enables stations attached to bridged LANs to meet the respective jitter, wander, and time synchronization

requirements for time-sensitive applications. This includes applications that involve multiple streams delivered to multiple endpoints. To facilitate the widespread use of bridged LANs 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: The use of current IEEE 802 technologies for time-sensitive applications, such as high-quality audio/video streaming or industrial control, does not assure that the applications can present data with acceptable jitter, wander, and deviation in time. This includes applications that involve multiple streams delivered to multiple endpoints. To facilitate the widespread use of bridged LANs 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. The synchronization information provided to each network element will allow the jitter, wander, and time synchronization requirements of demanding applications, such as in a residential environment, to be met. Existing time synchronization standards, IEEE Std 1588-2002 and IETF Request for Comments: 1305 (Network Time Protocol), because they operate at layer 3, impose unacceptable operational complexity and implementation costs on a developer of time-sensitive applications. This standard will leverage the work of the IEEE 1588 WG to develop the additional specifications needed to address these requirements.

5.6 Stakeholders for the Standard: Developers, manufacturers, distributors, or users of time-sensitive applications, components, and equipment.

Intellectual Property
6.1.a. Is the Sponsor aware of any copyright permissions needed for this project?: No
6.1.b. Is the Sponsor aware of possible registration activity related to this project?: No

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

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8.1 Additional Explanatory Notes (Item Number and Explanation): 5.2:
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