

Section 1

1.1 Amendment letter(s):

1.2 Type of Document: Standard

1.3 Life Cycle: Full Use

Section 2

2.1 Project Title: Standard for Local and metropolitan area networks--Bridges and Bridged Networks

2.2 Amendment title: Asynchronous Traffic Shaping

Section 3

3.1 Working Group: Higher Layer LAN Protocols Working Group (C/LM/WG802.1)

3.2 Sponsoring Society and Committee: IEEE Computer Society/LAN/MAN Standards Committee (C/LM)

3.3 Joint Sponsor: None

Section 4

4.1 Sponsor Balloting Information: Individual

4.2 Expected Date of submission of draft to the IEEE-SA for Initial Sponsor Ballot: Jan 2019

4.3 Projected Completion Date for Submittal to RevCom: Oct 2019

Section 5

5.1 Approximate number of people expected to be actively involved in the development of this project: 40

5.2a Scope of the complete standard:

This standard specifies Bridges that interconnect individual LANs, each supporting the IEEE 802 MAC Service using a different or identical media access control method, to provide Bridged Networks and VLANs.

5.2b Scope of the project:

This project specifies procedures and managed objects for a bridge to perform asynchronous traffic shaping. This allows satisfying divergent hard real-time requirements while providing high link utilization and high robustness of the network due to a higher level of independence between network devices.

Asynchronous traffic shaping will use independent queues at egress. The output flows of these queues are shaped.

The required minimum number of independent queues for an implementation to transport egress port equals the number of ports of the particular bridge. This minimum number allows transportation of an arbitrary number of flows is equal to the number of ports.

The required amount of memory to maintain shaper states for these independent queues is adjustable based on market-specific profiles. These profiles are not defined within the scope of this project.

This project will support links with constant ~~data rates~~ data rates.

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

5.4 Will the complete document (base + Amendment) contain a Purpose clause?: Yes

If Yes, enter the Purpose as it would appear in the complete document: Bridges, as specified by this standard, allow the compatible interconnection of information technology equipment attached to separate individual LANs.

5.5 Need for the Project:

Current 802.1 TSN projects specify synchronous traffic scheduling mechanisms in bridges for Real-Time communication. This project specifies mechanisms that do not rely on synchronous communication, thereby providing independence from clock synchronization mechanisms and higher link utilization than synchronous mechanisms while providing lower latency guarantees than existing asynchronous mechanisms in 802.1.

5.6 Stakeholders for the Standard:

Developers, providers, and users of networking services and equipment for streaming of time-sensitive data. This includes software developers, networking IC developers, bridge and NIC vendors, and users.

Section 6

6.1 Intellectual Property

A. Is the Sponsor aware of any copyright permissions needed for this project?: No

B. Is the Sponsor aware of possible registration activity related to this project?: No

Section 7

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

7.3 International Standards Activities

a. Adoptions - Is there potential for this standard to be adopted by another organization?: No

b. Harmonization - Are you aware of another organization that may be interested in portions of this document in their standardization development efforts?: No

7.4 Does the sponsor foresee a longer term need for testing and/or certification services to assure conformity to the standard?: No

Additionally, is it anticipated that testing methodologies will be specified in the standard to assure consistency in evaluating conformance to the criteria specified in the standard?: No

7.5 Indicate if you would like IEEE-SA staff to submit your project to the American National Standards Institute (ANSI) for approval consideration as an American National Standard: No

Section 8

8.1 Additional Explanatory Notes:

The core operation of the intended mechanism on the data plane is described in <http://www.ieee802.org/1/files/public/docs2015/new-tsn-specht-ubs-queues-0521-v0.pdf>.