

## 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 Scheduling for Real-Time Communication

## 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 scheduling. 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 scheduling will use shaped FIFO queues at egress. The required minimum number of queues for an implementation to transport an arbitrary number of flows is equal to the number of ports. The required number of state vectors required for shaping will be adjustable based on market-specific profiles. These profiles are not defined within the scope of this project.

Different link speeds at different physical links are permitted. Support of the changing link speeds for the individual links during runtime is not in the scope of the project.

**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 scheduling 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 possible with existing asynchronous mechanisms.

**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 scheduling algorithm on the data plane is described in <http://www.ieee802.org/1/files/public/docs2015/new-tsn-specht-ubs-queues-0521-v0.pdf>.