P802.1Qcr

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Type of Project: Modify Existing Approved PAR
PAR Request Date: 21-May-2018
PAR Approval Date:
PAR Expiration Date:
Status: Unapproved PAR, Modification to a Previously Approved PAR for an Amendment
Root PAR: P802.1Qcr **Approved on:** 30-Jun-2016

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

2.1 Title: Standard for Local and metropolitan area networks--Bridges and Bridged Networks
Amendment: Asynchronous Traffic Shaping

Changes in title: Standard for Local and ~~Metropolitan~~metropolitan ~~Area~~area ~~Networks~~networks--Bridges and Bridged Networks
Amendment: Asynchronous Traffic Shaping

3.1 Working Group: Higher Layer LAN Protocols Working Group (C/LM/WG802.1)
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3.2 Sponsoring Society and Committee: IEEE Computer Society/LAN/MAN Standards Committee (C/LM)
Contact Information for Sponsor Chair
Name: Paul Nikolich
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4.1 Type of Ballot: Individual
4.2 Expected Date of submission of draft to the IEEE-SA for Initial Sponsor Ballot: 01/2020
4.3 Projected Completion Date for Submittal to RevCom
Note: Usual minimum time between initial sponsor ballot and submission to Revcom is 6 months.: 10/2020

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

5.2.b. Scope of the project: This project specifies procedures and managed objects for bridges and end stations to perform asynchronous traffic shaping over full-duplex links with constant data rates.

Asynchronous traffic shaping can be modeled as an additional layer of shaped egress queues to merge flows into the existing queue structure. The required minimum number of independent queues at an egress port is adjustable and is at least the number of ingress ports of the particular bridge that require merging.

Changes in scope of the project: This project specifies procedures and managed objects for ~~a~~bridges ~~bridge~~and end stations to perform asynchronous traffic shaping over full-duplex links with constant ~~bit~~ data rates. Asynchronous traffic shaping ~~provides~~can be modeled as an additional layer of shaped egress queues to merge flows into the existing queue structure. The required minimum number of independent queues at an egress port is adjustable and is at least the number of ingress ports of the particular bridge that require merging. The ~~project~~amendment specifies an information model for the

The amendment specifies an information model for the capabilities of asynchronous traffic shaping. It further specifies a YANG data model and Management Information Base (MIB) modules both based on that information model to support configuration and status reporting. It further defines the relationship between the models introduced by this amendment, and the models in the base standard.

Additionally, this amendment provides an informative framework for worst case delay analysis in static networks with static configurations. This amendment also addresses errors and omissions in the description of existing functionality.

capabilities of asynchronous traffic shaping. It further specifies a YANG data model and Management Information Base (MIB) modules both based on that information model to support configuration and status reporting. It further defines the relationship between the models introduced by this amendment, and the models in the base standard. Additionally, this amendment provides an informative framework for worst case delay analysis in static networks with static configurations. This amendment also addresses errors and omissions in the description of existing functionality.

5.3 Is the completion of this standard dependent upon the completion of another standard: No
5.4 Purpose: 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: There is well defined traffic that requires zero congestion loss and deterministic latency. Current bridging standards do not provide a sufficiently fine grained asynchronous traffic mechanism to meet these requirements without using network topology information.

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.

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 integrated circuit developers, bridge and network interface controller vendors, and users.

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?: Yes
If yes please explain: The YANG Data Model will be assigned a Uniform Resource Name (URN) based on the Registration Authority (RA) URN tutorial and IEEE Std 802d. The Simple Network Management Protocol (SNMP) MIB will be assigned an Object Identifier (OID) based on the RA OID tutorial and IEEE Std 802.

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: #5.2b: 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.
While 'YANG' (developed by the Internet Engineering Task Force) appears to be an acronym its expansion 'Yet Another Next Generation' is not meaningful. It is vital that 'YANG' appear in the project title to inform potential participants and the target readership of the amendment.

#6.1b: IEEE Std 802 IEEE Standard for Local and Metropolitan Area Networks: Overview and Architecture
IEEE Std 802d IEEE Standard for Local and Metropolitan Area Networks: Overview and Architecture Amendment 1: Allocation of Uniform Resource Name (URN) Values in IEEE 802 Standards
RA URN tutorial: http://standards.ieee.org/develop/regauth/tut/ieeeurn.pdf
RA OID tutorial: http: //standards.ieee.org/develop/regauth/tut/oid.pdf

A modification of this PAR was requested in order to (a) allow the specification of asynchronous traffic shaping in end stations, and (b) clarify that "managed objects" in the original PAR scope includes an informational model for the capabilities of asynchronous traffic shaping, a YANG data model and MIB module based on that informational model.