

P802.1Qcr

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Type of Project: Amendment to IEEE Standard 802.1Q-2014

PAR Request Date: 06-Apr-2016

PAR Approval Date: 30-Jun-2016

PAR Expiration Date: 31-Dec-2020

Status: PAR for an Amendment to an existing IEEE Standard

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 Asynchronous Traffic Shaping

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

Contact Information for Working Group Chair

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

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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: 40

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 **a bridges and end stations** to perform asynchronous traffic shaping over full-duplex links with constant bit data rates.

Asynchronous traffic shaping provides 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 amendment specifies a Unified Modeling Language (UML) based information model for the capabilities of asynchronous traffic shaping. A YANG data model and a Management Information Base (MIB) module both based on that UML model support configuration and status reporting. It further defines the relationship between the information and data model and models for the other management capabilities specified in this standard.

~~The project~~ Additionally, this amendment provides an informative framework for worst case delay analysis in static networks/configurations.

5.3 Is the completion of this standard dependent upon the completion of another standard: No

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?: No

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

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>.