

P802.1Qci

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Type of Project: Modify Existing Approved PAR

PAR Request Date: 24-Jun-2015

PAR Approval Date:

PAR Expiration Date:

Status: Unapproved PAR, Modification to a Previously Approved PAR for an Amendment

Root PAR: P802.1Qci **Approved on:** 11-Jun-2015

1.1 Project Number: P802.1Qci

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: Per-Stream Filtering and Policing, and Cyclic Queuing and Forwarding

Changes in title: Standard for Local and ~~Metropolitan~~metropolitan Areaarea Networks networks--Bridges and Bridged Networks

Amendment: Per-Stream Filtering and Policing, and Cyclic Queuing and Forwarding

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

Contact Information for Working Group Chair

Name: Glenn Parsons

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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: 03/2017

4.3 Projected Completion Date for Submittal to RevCom: 10/2017

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 amendment specifies procedures and managed objects for a bridge to perform frame counting, filtering, policing, and service class selection for a frame based on the particular data stream to which the frame belongs, and a synchronized cyclic time schedule. Policing and filtering functions include the detection and mitigation of disruptive transmissions by other systems in a network, improving the robustness of that network.

This amendment also specifies synchronized cyclic enqueueing and

Changes in scope of the project: This ~~standard~~amendment specifies procedures and managed objects for a bridge to perform frame counting, filtering, policing, and service class selection for a frame based on the particular data stream to which the frame belongs, and a synchronized cyclic time schedule. Policing and filtering functions include the detection and mitigation of disruptive transmissions by other systems in a network, improving the robustness of that network. This amendment also specifies synchronized cyclic enqueueing and queue draining procedures, managed objects, and extensions to

queue draining procedures, managed objects, and extensions to existing protocols that enable bridges and end stations to synchronize their transmission of frames to achieve zero congestion loss and deterministic latency.

existing protocols that enable bridges and end stations to synchronize their transmission of frames to achieve zero congestion loss and deterministic latency.

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: The development of standards for Time-Sensitive Networking (TSN) have shown that there exist no interoperable standards that enable a bridge to detect whether or not some systems in a network are conforming to behaviors agreed by configuration and/or protocol exchanges. For example, devices that exceed the allocated bandwidth for one stream can prevent the network from achieving the benefits of TSN for any or all streams, not just the misbehaving stream.

This amendment also specifies a transmission selection algorithm that allows deterministic delays through a bridged network to be easily calculated regardless of network topology. This is an improvement of the existing techniques that provides much simpler determination of network delays, reduces delivery jitter, and simplifies provision of deterministic services across a bridged LAN.

5.6 Stakeholders for the Standard: Developers, providers, and users of networking services and equipment for IoT (including industrial automation, automotive networking, smart grid) and of operating systems, hypervisors and orchestration systems for virtual machines. This includes software developers, networking IC developers, bridge and NIC 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 (Item Number and Explanation): This PAR modification merges the scope and purpose of P802.1Qch into the scope and purpose of P802.1Qci, as it has become clear that the former can (and should) be achieved by means of the tools that are being developed for the latter. It is the intent that once this PAR modification has been submitted, the P802.1Qch PAR will be withdrawn.