P802.1Q??

Submitter Email: paul.congdon@tallac.com
Type of Project: Amendment to IEEE Standard 802.1Q-2014
PAR Request Date: 13-Dec-2017
PAR Approval Date:
PAR Expiration Date:
Status: Unapproved PAR, PAR for an Amendment to an existing IEEE Standard

1.1 Project Number: P802.1Q??
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 Congestion Isolation

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)
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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: 03/2021
4.3 Projected Completion Date for Submittal to RevCom
Note: Usual minimum time between initial sponsor ballot and submission to Revcom is 6 months.: 08/2021

5.1 Approximate number of people expected to be actively involved in the development of this project: 20
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 standard specifies protocols, procedures and managed objects
that support the isolation of congested data flows within wired networks
of limited bandwidth delay product. This is achieved by enabling bridges
to individually identify flows creating congestion and adjusting
transmission selection for packets of those flows. When coupled
with congestion notification signaling, this mechanism avoids
head-of-line blocking for uncongested flows sharing a traffic class
in lossless networks. This mechanism provides support for higher
layer protocols that utilize end-to-end congestion control in order to
reduce packet loss and latency.

5.3 Is the completion of this standard dependent upon the completion of another standard: Yes
If yes please explain: This standard will define a new IEEE Std 802.1AB Type-Length-Value (TLV) object and its associated YANG model. Project IEEE 802.1ABcu is currently defining the YANG model for IEEE Std 802.1AB which must be completed in order for this standard to define its extension.

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 significant customer interest and market opportunity for large scale, low latency, lossless Ethernet based data centers to support high-performance computing and distributed storage applications. Congestion is the primary cause of loss and delay in these environments. These applications currently use higher layer end-to-end congestion control coupled with priority-based flow control at Layer 2 to avoid performance degradation from packet loss due to congestion. As the Ethernet data center network scales in size, speed and number of concurrent flows, the current environment creates head-of-line blocking for flows sharing the same traffic class. Isolating flows that cause congestion reduces latency for flows not causing congestion and improves the scale and performance of the Ethernet based data center network. This amendment will support the identification and isolation of the higher layer protocol flows creating congestion and will interoperate with existing IEEE 802 and higher-layer congestion management capabilities. Use of a consolidated Ethernet data center network will realize operational and equipment cost benefits.

5.6 Stakeholders for the Standard: Developers and users of networking for data center environments including integrated circuit developers, switch and end-node adaptor vendors, network operators 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

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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: