myProject™ - P802.1Qaz PAR Detail

Submitter Email: pthaler@broadcom.com

Type of Project: Amendment to IEEE Standard

PAR Request Date: 16-Nov-2007

PAR Approval Date:

PAR Expiration Date:

PAR Signature Page on File: No

Status: Unapproved PAR, Amendment to an Existing IEEE Standard, Std 802.1Q-2005

Project:

Root Project: 802.1Q-2005

1.1 Project Number: P802.1Qaz

1.2 Type of Document: Standard

1.3 Life Cycle: Full Use

1.4 Is this project in ballot now? No

2.1 Title: IEEE Standard for Local and Metropolitan Area Networks---Virtual Bridged Local Area Networks - Amendment: Enhanced Transmission Selection for Bandwidth Sharing Between Traffic Classes

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/Local and Metropolitan Area Networks (C/LM)

Contact Information for Sponsor Chair

Paul Nikolich
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Contact Information for Standards Representative

None

4.1 Type of Ballot: Individual

4.2 Expected Date of Submission for Initial Sponsor Ballot: 01/2009

4.3 Projected Completion Date for Submittal to RevCom: 05/2009

5.1 Approximate number of people expected to work on this project: 80

5.2 Scope: This standard specifies enhancement of transmission selection to support allocation of bandwidth amongst traffic classes. When the offered load in a traffic class doesn t use its allocated bandwidth, enhanced transmission selection will allow other

traffic classes to use the available bandwidth. The bandwidth-allocation priorities will share bandwidth between bursty traffic loads while coexisting with the strict priority mechanisms already defined in Std 802.1Q, carrying traffic requiring minimum latency. It will include managed objects to support bandwidth allocation.

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

5.4 Purpose: Networks prioritize traffic to provide different service characteristics to traffic classes. It is desirable to be able to share bandwidth between priorities carrying bursty high offered loads rather than servicing them with strict priority while allowing strict priority for time-sensitive and management traffic requiring minimum latency. Also, when traffic at a priority level doesn t use its allocation, it is desirable to allow other priorities to use that bandwidth. For example, IEEE P802.1Qau will specify congestion management. Congestion managed traffic classes can share a network with traditional best effort LAN classes. Enhanced transmission selection will provide uniform management for the sharing of bandwidth between congestion managed classes and traditional classes on a single bridged network. Priorities using enhanced transmission selection will coexist with priorities using 802.1Qav queuing for time-sensitive streams.

5.5 Need for the Project: There is significant customer interest and market opportunity for Ethernet as a consolidated Layer 2 solution in high-speed networks such as data centers, backplane fabrics, single and multi-chassis interconnects, computing clusters and storage networks. The differing service needs of applications supported on a consolidated Ethernet are supported by separate traffic classes. These applications often provide bursty loads for large transfers. Support of these classes on the same links requires the ability to allocate a guaranteed share of bandwidth to each class and to allow classes with offered load to fully utilize bandwidth when offered load for another class doesn t require its full share of bandwidth. Use of a consolidated network will realize operation and equipment cost benefits. This project allows a uniform management of bandwidth allocation between classes.

5.6 Stakeholders for the Standard: Developers and users of networking for data center environments including networking IC developers, switch and NIC vendors, and users.

Intellectual Property

6.1.a. Has the IEEE-SA policy on intellectual property been presented to those responsible for preparing/submitting this PAR prior to the PAR submittal to the IEEE-SA Standards Board? Yes
If yes, state date: 07/16/2007
6.1.b. Is the Sponsor aware of any copyright permissions needed for this project? No
6.1.c. 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? Yes
If yes, please explain:IEEE P802.1Qav is adding a transmission selection mechanism for traffic shaping of bandwidth limited streams that have a reserved bandwidth allocation. Its traffic shaping constrains the managed class to use only its allocation regardless of the bandwidth use by other classes and spaces intervals between packets in the class. The transmission selection in this PAR is intended to allow bandwidth allocation amongst traffic types while allowing traffic in one class to use bandwidth unused by the offered load in other classes without traffic shaping constraints. This is suitable for carrying bursty traffic at high data rates.

and answer the following:
Sponsor Organization: IEEE 802
Project/Standard Number: IEEE P802.1Qav
Project/Standard Date: 02/27/2007
Project/Standard Title: Forwarding and Queuing Enhancements for Time-Sensitive Streams

7.2 Future Adoptions
Is there potential for this standard (in part or in whole) to be adopted by another national, regional, or international organization? No

7.3 Will this project result in any health, safety, security, or environmental guidance that affects or applies to human health or safety? No

7.4 Additional Explanatory Notes: (Item Number and Explanation) IEEE P802.1Qau - Standard for Local and Metropolitan Area Networks-Virtual Bridged Local Area Networks Amendment 10: Congestion Notification

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