CSD for P802.1XY:
Quality of Service Provision for Non-Bridges

IEEE 802 LAN/MAN STANDARDS COMMITTEE (LMSC) CRITERIA FOR STANDARDS DEVELOPMENT (CSD)

Based on IEEE 802 LMSC Operations Manuals approved 15 November 2013 Last edited 9 November 2016

1. IEEE 802 criteria for standards development (CSD)

The CSD documents an agreement between the WG and the Sponsor that provides a description of the project and the Sponsor's requirements more detailed than required in the PAR. The CSD consists of the project process requirements, 1.1, and the 5C requirements, 0.

1.1 Project process requirements

1.1.1 Managed objects

Describe the plan for developing a definition of managed objects. The plan shall specify one of the following:

a) The definitions will be part of this project.

b) The definitions will be part of a different project and provide the plan for that project or anticipated future project.

c) The definitions will not be developed and explain why such definitions are not needed.

This project will use method a). The managed object definitions will be part of the project.

1.1.2 Coexistence

A WG proposing a wireless project shall demonstrate coexistence through the preparation of a Coexistence Assurance (CA) document unless it is not applicable.

a) Will the WG create a CA document as part of the WG balloting process as described in Clause 13? (yes/no)

b) If not, explain why the CA document is not applicable.

This project is not a wireless project.

1.2 5C requirements

1.2.1 Broad market potential

Each proposed IEEE 802 LMSC standard shall have broad market potential. At a minimum, address the following areas:

a) Broad sets of applicability.

b) Multiple vendors and numerous users.

802.1Q Time-Sensitive Networking (TSN) features have been steadily gaining market acceptance. Work in other Standards Development Organizations (SDOs), for example, the Deterministic Networking Working Group of the Internet Engineering Task Force (IETF), has shown the need for devices such as routers, hosts, or network address translation appliances to employ the same Quality of Service (QoS) functions as 802.1Q Bridges, including queuing, shaping, transmission selection, and policing functions. In order to achieve the goals of TSN, now realized in standard bridge products, for low latency and zero congestion loss, exact conformance to specifications of QoS mechanisms are required. This standard will make possible a path of normative references to IEEE 802.1Q for a large class of devices that cannot now use its QoS capabilities.

Multiple vendors will participate in the development of the project. Additional vendors are participating in the IETF Deterministic Networking Working Group that will be referencing this document.

1.2.2 Compatibility

Each proposed IEEE 802 LMSC standard should be in conformance with IEEE Std 802, IEEE 802.1AC, and IEEE 802.1Q. If any variances in conformance emerge, they shall be thoroughly disclosed and reviewed with IEEE 802.1 WG prior to submitting a PAR to the Sponsor.

a) Will the proposed standard comply with IEEE Std 802, IEEE Std 802.1AC and IEEE Std 802.1Q?

b) If the answer to a) is no, supply the response from the IEEE 802.1 WG.

Compatibility with IEEE Std 802, IEEE Std 802.1AC and IEEE Std 802.1Q will be assured, because the Time-Sensitive Networking Task Group that is developing this new standard also has primary responsibility for 802, 802.1AC, and 802.1Q.

The review and response is not required if the proposed standard is an amendment or revision to an existing standard for which it has been previously determined that compliance with the above IEEE 802 standards is not possible. In this case, the CSD statement shall state that this is the case.

1.2.3 Distinct Identity

Each proposed IEEE 802 LMSC standard shall provide evidence of a distinct identity. Identify standards and standards projects with similar scopes and for each one describe why the proposed project is substantially different.

IEEE Std 802.1Q is the location for IEEE 802.1 QoS technology and for bridges, and will remain so. No other document specifies these mechanisms. The present document will provide points of reference so that, when IEEE 802.1 and/or other SDOs create documents defining devices that are not 802.1Q bridges, those documents can make normative references, through this new document, to 802.1Q QoS technologies.

1.2.4 Technical Feasibility

Each proposed IEEE 802 LMSC standard shall provide evidence that the project is technically feasible within the time frame of the project. At a minimum, address the following items to demonstrate technical feasibility:

a) Demonstrated system feasibility.

b) Proven similar technology via testing, modeling, simulation, etc.

No new QoS mechanisms are being defined in this document. The feasibility of deploying these technologies in devices that are not 802.1Q Bridges, or that have much more functionality than defined in 802.1Q, has been proven by the implementation of these mechanisms in millions of devices over the past 10 years.

1.2.5 Economic Feasibility

Each proposed IEEE 802 LMSC standard shall provide evidence of economic feasibility. Demonstrate, as far as can reasonably be estimated, the economic feasibility of the proposed project for its intended applications. Among the areas that may be addressed in the cost for performance analysis are the following:

a) Balanced costs (infrastructure versus attached stations).

b) Known cost factors.

c) Consideration of installation costs.

d) Consideration of operational costs (e.g., energy consumption).

e) Other areas, as appropriate.

This standard will add no new hardware costs to current devices. The hardware costs incurred by new (non-Bridge) device employing the standard will be similar to its implementation in a Bridge, already proven.

The well-established balance between infrastructure and attached stations will not be affected by this standard.

The cost factors, including installation and operational factors are well-known from existing implementations. This new standard will provide reference points for other standards, not new functionality.