IEEE 802 LAN/MAN STANDARDS COMMITTEE (LMSC)

CRITERIA FOR STANDARDS DEVELOPMENT (CSD)

Based on IEEE 802 LMSC Operations Manuals approved 17 March 2022
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P802.1Qee Standard for Local and Metropolitan Area Networks – Bridges and Bridged Networks Amendment: Traffic Engineering for Bridged Networks that include Wireless Technologies

1. IEEE 802 criteria for standards development (CSD)

The CSD documents an agreement between the WG and the LMSC that provides a description of the project and the LMSC's requirements more detailed than required in the PAR. The CSD consists of the project process requirements, 1.1, and the 5C requirements, 1.2.

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 objects definitions will be part of this project.

1.1.2 Coexistence

A WG proposing a wireless project shall prepare a Coexistence Assessment (CA) document unless it is not applicable.

d) Will the WG create a CA document as part of the WG balloting process as described in Clause 13? (yes/no)
e) If not, explain why the CA document is not applicable.

d) No.
e) This project is not a wireless project; therefore, the CA document is not applicable. (The project will only specify control plane extensions, which can be useful for existing wireless LAN technologies.)

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:

f) Broad sets of applicability.
g) Multiple vendors and numerous users.

f) The current bridge attributes are not adequate to describe the characteristics of bridged networks that include wireless technologies, e.g., IEEE 802.11 WLAN and 3GPP technologies, whose delay variance is typically orders of magnitude larger than that of point-to-point wireline MAC technologies. The need for supporting wireless and wireline systems in the same bridged network is increasing in markets and applications that use traffic engineering; including professional audio/video and industrial automation for applications such as flexible factory automation.
g) Multiple vendors and users of industrial automation, professional audio/video, and other application areas requiring traffic engineering with support for wireless systems.

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.

h) Will the proposed standard comply with IEEE Std 802, IEEE Std 802.1AC and IEEE Std 802.1Q?
i) If the answer to a) is no, supply the response from the IEEE 802.1 WG.

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.

The amendment will be in conformance with IEEE Std 802, IEEE Std 802.1AC, and the existing provisions of IEEE Std 802.1Q.

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.

No existing IEEE 802 standard or standard project addresses traffic engineering for bridged networks that include wireless technologies whose delay variance is beyond that of point-to-point full duplex wireline MAC 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:

j) Demonstrated system feasibility.
k) Proven similar technology via testing, modeling, simulation, etc.

j) The basis for the proposed project is bridge attributes and corresponding YANG data models for bridge delay. They have been implemented, deployed, and tested. The proposed amendment would extend the basic bridge attributes by providing refinements to be able to capture wireless characteristics. Thus, system feasibility has been demonstrated.
k) The base bridge attributes have been implemented and tested. Thus, similar technology has been proven via implementations and testing.

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:

l) Known cost factors.
m) Balanced costs.
n) Consideration of installation costs.
o) Consideration of operational costs (e.g., energy consumption).
p) Other areas, as appropriate.

l) The amendment will specify extensions to already existing management attributes and are not expected to add hardware costs to bridges and end stations beyond the resources consumed by management modules required for the existing specification.
m) The well-established balance between infrastructure and attached stations is not expected to be changed by the proposed amendment.
n) The installation cost factors of bridged networks are well-known, and the proposed amendment is not expected to change them.
o) The proposed bridge attribute extensions is expected to improve economic feasibility as they enable more efficient operation of a bridged network, e.g., reduce energy consumption via more efficient traffic engineering.
p) No other areas.