IEEE 802 LAN/MAN STANDARDS COMMITTEE (LMSC)

CRITERIA FOR STANDARDS DEVELOPMENT (CSD)

Based on IEEE 802 LMSC Operations Manuals approved 4 August 2020
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P802.1DU Standard for Local and Metropolitan Area Networks – Cut-Through Forwarding Bridges and Bridged Networks

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, 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).

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.

This project is not a wireless project; therefore, the CA document is not applicable.

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) Proprietary implementations of CTF are already widely used in industrial automation installations and data center networks. Standardizing CTF can be an enabling technology for a wide range of professional audio-video applications.

  g) Existing proprietary implementations by bridge vendors support CTF, but interoperability is limited. Standardizing CTF is an opportunity for deployment of IEEE 802 technology in existing and new use cases in industrial automation systems, data centers, and professional audio-video applications in venues such as concert halls, theatres, conference centers, corporate buildings, casinos, hotels, theme parks, cruise ships, sport arenas and beyond.
      Additional material: https://mentor.ieee.org/802.1/dcn/21/1-21-0037-00-ICne-ieee-802-tutorial-cut-through-forwarding-ctf-among-ethernet-networks.pdf

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.

  h) No, a CTF Bridge will not be compliant with the published standards in question (i.e., IEEE Std 802.1AC and IEEE Std 802.1Q); however, CTF Bridges will be interoperable with Bridges compliant to these standards. Further, CTF can be disabled to comply with the published standards in question.

  i) The conformance variances between the proposed new IEEE 802.1 standard and the published standards in question, in terms of externally visible behavior, were reviewed and discussed with the IEEE 802.1 WG. While the proposed new standard will not be compliant with the published standards in question, no interoperability issues between the proposed CTF Bridges and Bridges compliant to the published standards in question could be identified. The proposed new standard will include requirements and recommendations for the use of CTF Bridges in IEEE 802.1Q bridged networks to allow interconnection of CTF Bridges and Bridges compliant to the published standards in question on a network level.

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.

No other IEEE 802 standard or project defines CTF Bridges.

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)   System feasibility is demonstrated by existing industrial automation and data center network installations.

    k) CTF Bridging technology is proven by the existence of such installations.

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 cost factors are known from existing data center network and industrial automation installations. There is no reason to expect any significant change.
    m) The changes, relative to the well-known cost balance between infrastructure and end stations from existing IEEE 802.1 standards without support for CTF, are negligible.
    n) There are no incremental installation costs, compared to applications based on existing IEEE 802.1 standards without support for CTF.
    o) There are no incremental operational costs, compared to applications based on existing IEEE 802.1 standards without support for CTF.
    p) CTF bridging will allow greater operational efficiency of the networks in industrial automation installations, and therefore, greater productivity.