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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P802.1CBec IEEE Standard for Local and metropolitan area networks – Frame Replication and Elimination for Reliability - Amendment: ~~Guidance for~~ Sequence Recovery Function Refinements and Parameter Configuration

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, and the 5C requirements, 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 c). The definitions will not be developed, since this amendment will only add an informative annex to the base standard.

1.1.2 Coexistence

A WG proposing a wireless project shall prepare a Coexistence Assessment (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.

Item b) is 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:

a) Broad sets of applicability.
b) Multiple vendors and numerous users.

a) The proposed amendment is applicable in the various use cases where Frame Replication and Elimination for Reliability is used to improve reliability and availability.
b) All vendors and users of Frame Replication and Elimination for Reliability can benefit from the~~e~~is amendment~~informative annex~~.

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.

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 ~~informative annex~~ amendment will be in conformance with IEEE Std 802, IEEE Std 802.1AC, and 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 the recently identified operation aspects and the recommended setting of parameters for the sequence recovery function of Frame Replication and Elimination for Reliability.

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.

The informative annex provides formulas to determine a recommended set of values to use for existing parameters. All addressed parameters are already defined by IEEE Std 802.1CB; therefore, setting these parameters is feasible.

The informative annex relies on the proven technology provided by the base standard. Additionally, the proposed parameter values have been modeled, proven, and simulated. See https://ieeexplore.ieee.org/document/9838905 (http://arxiv.org/abs/2306.13469).

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) Known cost factors.
b) Balanced costs.
c) Consideration of installation costs.
d) Consideration of operational costs (e.g., energy consumption).
e) Other areas, as appropriate.

The~~is project~~ informative annex does~~will~~ not add new functionality, hence no impact on cost or complexity. The ~~amendment~~ informative annex does not imply additional hardware cost as it only provides formulas to determine a recommended set of values for setting existing parameters. The provided recommended set of values to use for the existing parameters and the provided guidelines could potentially lower implementation costs by reducing over-provisioning for memory (required for the sequence recovery function and buffering).
The refinements to the sequence recovery function are not expected to have a significant impact on the balance of cost factors, installation costs, nor the operational costs. The costs factors related to the sequence recovery function are well-known from existing implementations of the specifications in the base standard.