

IEEE 802 LAN/MAN STANDARDS COMMITTEE (LMSC)

CRITERIA FOR STANDARDS DEVELOPMENT (CSD)

Based on IEEE 802 LMSC Operations Manuals approved 15 November 2013

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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)

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 Multiple Registration Protocol (MRP) has proven to be a successfully and widely deployed protocol and this standard provides additional capabilities and performance requested by existing MRP users. New applications, including industrial automation or audio/video for large venues, require much larger databases than MRP can support.

Multiple vendors will participate in the development of the project. More vendors are participating in the Time-Sensitive Networking Task Group than participated in the development of MRP.

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.

This standard is being developed for use with 802.1Q applications. 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.

No IEEE 802 standards support registration databases of the required scale.

This project differs from existing and ongoing 802.1Q mechanisms because 802.1Q-2014 MRP, formerly 802.1Qak, does not fulfill scalability and performance requirements needed by some use cases.

Link-local Registration Protocol (LRP) is based on link-local operation similar to the Link Layer Discovery Protocol (LLDP, IEEE 802.1AB), which is also a stand-alone specification. However, LLDP is for discovery whereas LRP provides registrations.

Since LRP is a link-local protocol, it requires no changes to 802.1Q. LRP is independent of bridging functions specified within 802.1Q. LRP is not dependent on the managed objects defined in 802.1Q. LRP does not mandate adding new or changing existing features in 802.1Q. Furthermore, LRP may be used outside of IEEE 802.1, e.g. by the IETF.

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.

Mechanisms needed for this project are widely used by other protocols already, e.g. the information propagation based on link-local data exchange.

The feasibility of link-local data exchange techniques needed for this project have been proven by the link state principles of the Intermediate System to Intermediate System (IS-IS, ISO/IEC 10589:2002) routing protocol.

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 hardware costs beyond the minimal and well-known resources consumed by a link-local protocol which are firmly bounded.

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

The cost factors, including installation and operational factors are well-known from MRP. This new standard will support a larger database with fewer message exchanges and thus will provide better economic feasibility than MRP.