
IEEE P802.19 Wireless Coexistence

Project	IEEE P802.19 Wireless Coexistence WG		
Title	Sub 1-GHz Coexistence Draft CSD		
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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, 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.
The recommended practice will not define new managed objects. It will utilize the managed objects defined in the 802.11 and 802.15 standards.

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)
No.
- b) If not, explain why the CA document is not applicable.
The recommended practice does not add or modify existing physical layer definitions. This recommended practice uses existing features of the referenced standards and provides guidance to implementers and users of IEEE 802® wireless standards.

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.

Many millions of devices based on IEEE Std 802.15.4 are currently operating in Sub-1 GHz frequency bands, and the market is expanding rapidly; products based on IEEE Std 802.11ah-2016 are expected to enter the market in the future. Both standards use technology that is well proven, widely available, and widely used.

- b) Multiple vendors and numerous users.

Numerous vendors currently build many products based on IEEE Std 802.15.4 and IEEE Std 802.11ah-2016. There are numerous semiconductor companies providing chips and chipsets based on 802 wireless standards capable of operating in the Sub-1GHz frequency bands. These vendors provide products to millions of users, and the markets are expanding.

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? **No**

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

The recommended practice uses features and services from the underlying standards IEEE Std 802.11 and IEEE Std 802.15.4; it has been previously determined that compliance with the above IEEE 802 standards is not possible with IEEE Std 802.15.4.

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.

This recommended practice uses existing features of IEEE Std 802.11ah-2016 and IEEE Std 802.15.4 and provides guidance to implementers and users of these standards in Sub-1 GHz

frequency bands; the recommendations are unique to coexistence in the subject frequency bands and with these specific standards.

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.

The performance characteristics of systems based on independently operating IEEE Std 802.11ah-2016 and IEEE Std 802.15.4 is well characterized in many applications. Simulation studies of IEEE Std 802.11ah-2016 and IEEE Std 802.15.4 operating in the same radio sphere of influence were conducted during the Interest Group phase and showed that there are methods possible to improve coexistence performance by for example varying channel access parameters of the systems. This shows the feasibility of discovering and documenting a set of methods which can enhance coexistence of collocated IEEE Std 802.11ah-2016 and IEEE Std 802.15.4 operating in the Sub-1 GHz frequency bands.

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

See (a).

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).

Since there are no added hardware costs, the balance remains unchanged. Implementation and deployment cost impacts would be small. See 1.2.5(c).

- b) Known cost factors.

Same as 1.2.5 a).

- c) Consideration of installation costs.

The incremental costs would be small and are justified by the expected improved performance of coexisting usages.

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

This recommended practice will not result in additional operational costs.

- e) Other areas, as appropriate.