IEEE 802.19

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| Wireless Automotive Coexistence SG Proposed CSD |
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Abstract

This is the wireless automotive coexistence SG proposed CSD.

# 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:

1. The definitions will be part of this project. YES ??
2. The definitions will be part of a different project and provide the plan for that project or anticipated future project.
3. The definitions will not be developed and explain why such definitions are not needed.

### 1.1.2 Coexistence

## **not needed.**

## 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.

Wi-Fi systems have migrated into the automotive domain very fast in the recent years. Car passengers expect to have seamless integration of their consumer electronic devices in their cars. Dirven by passenger demand, OEMs and other stockholdes are giving great importance to the wireless applications in vehicles.

According to research from firm isuppli the Wi-Fi will be integrated in 7.2 million cars by 2017. On the other hand, in car applications and services will be woth more than $1.2 billion by 2017, due to the increasd number of connected vehicles (from the report, Connected Cars: Automotive Telematics & In-Vehicle Infotainment 2013-2017, Juniper research).

These applications will allow mainly full integration of consumer devises into vehicles.

In addition, Bluetooth plays a big role in vehicle informtainment systems, and it has been integrarted in most cars to provide mainly hands free calling and music streaming.

b) Multiple vendors and numerous users.

A wide variety of vendors currently build numerous products for the Wireless Local Area Networks (WLAN) marketplace in the automotive domain. The big stockholders are both the OEMs and other big IT companies, which consider this domain as a new promising market for their products. It is anticipated that the majority of those vendors, and others, will participate in the standards development process and subsequent commercialization activities.

## 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.

1. Will the proposed standard comply with IEEE Std 802, IEEE Std 802.1AC and IEEE Std 802.1Q? YES
2. 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.

## 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.

The scope of this recommended practice is to provide recommendations on the value settings for the various parameters of the IEEE802 unlicensed wireless devices as well as Bluetooth to enhance their performance in the automotive environment. The recommended practice is provided for devices operating in the 2.4GHz and 5GHz unlicensed frequency bands.

There is no other WLAN standard focusing on significantly improving WLAN efficiency and system level performance in dense deployment scenarios other than this amendment.

This amendment will differentiate itself from other IEEE 802 wireless standards via the title which stresses the specification of high efficiency WLAN technology.

## 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.

Until the full extent of the user models referenced in the IEEE 802.11 HEW PAR is understood, the study group cannot completely assess the extent of reasonable testing for those technologies. However, IEEE 802.11 is a mature technology which has a wide variety of legacy devices and a proven track record, with several billions of devices shipping each year. The increased capabilities envisioned for the baseband and RF parts necessary to implement the proposed amendment are in line with the current progress in technology and not expected to impinge testability.

The amendment will use modeling and simulation, based on real world deployment, as a tool for evaluating performance metrics.

**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).

1. b) Known cost factors.

c) Consideration of installation costs.

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

**References:**