**IEEE P802.19**

**Wireless Coexistence**

|  |  |  |
| --- | --- | --- |
| Project | IEEE P802.19 Wireless Coexistence WG | |
| Title | **Coexistence in Unlicensed frequency Bands CSD** | |
| Date Submitted | May 14, 2015 | |
| Source | Naotaka Sato (Sony)  Chen Sun (Sony China) Sho Furuichi (Sony) Hyunduk Kang (ETRI) | E-mail: [naotaka.sato@ieee.org](mailto:naotaka.sato@ieee.org)  E-mail: [Chen.Sun@sony.com.cn](mailto:Chen.Sun@sony.com.cn)  E-mail: [Sho.Furuichi@jp.sony.com](mailto:Sho.Furuichi@jp.sony.com)  E-mail: [henry@etri.re.kr](mailto:henry@etri.re.kr) |
| Re: | [] | |
| Abstract | [] | |
| Purpose | [] | |
| Notice | This document has been prepared to assist the IEEE P802.19. It is offered as a basis for discussion and is not binding on the contributing individual(s) or organization(s). The material in this document is subject to change in form and content after further study. The contributor(s) reserve(s) the right to add, amend or withdraw material contained herein. | |
| Release | The contributor acknowledges and accepts that this contribution becomes the property of IEEE and may be made publicly available by IEEE P802.19. | |

**IEEE 802 LAN/MAN STANDARDS COMMITTEE (LMSC)**

**CRITERIA FOR STANDARDS DEVELOPMENT (CSD)**

Based on IEEE 802 LMSC Operations Manuals approved 7 November 2014

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. ***Project process requirements***
     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.

**Intended plan for developing a definition of managed objects:**

* Understand the common capabilities associated with coexistence information exchange among networks and devices to enable network-based coexistence management currently defined in the IEEE 802.19.1-2014 plus complementary amendments. Also identify and record specific unique capabilities as needed.
* Define procedures and protocols for collecting and exchanging coexistence information of heterogeneous networks.
* Information elements and data structures to capture coexistence information.
  + 1. Coexistence

A WG proposing a wireless project shall demonstrate coexistence through the preparation of a Coexistence Assurance (CA) document unless it is not applicable.

1. Will the WG create a CA document as part of the WG balloting process as described in Clause 13? (yes/no) No
2. If not, explain why the CA document is not applicable.

This amendment will enhance coexistence for geo-location capable operating under general authorization such as the TV band White Spaces, the 5GHz licensed-exempt bands and the general authorized access in 3.5GHz bands. Evaluation of the effectiveness of coexistence will be done during standard development. Since this is not a standard that defines a MAC/PHY, a CA document will not be produced by the group

* 1. ***5C requirements***
     1. Broad market potential

Each proposed IEEE 802 LMSC standard shall have broad market potential. At a minimum, address the following areas:

1. Broad sets of applicability.

The need for a coexistence standard is demonstrated by the past and ongoing work in IEEE 802.11, IEEE 802.15, IEEE 802.22 on the TV band White Spaces, 5GHz licensed-exempt bands and the general authorized access in 3.5GHz bands.

1. Multiple vendors and numerous users.

Current wireless ISP services use the TV, 900MHz, 2.45 GHz and 5GHz bands, operating under part 15 rules using multiple and dissimilar MAC/PHY standards or air interfaces. There are many vendors of IEEE 802 wireless equipment for indoor and outdoor operation, and it is expected that there will be several offering equipment operating under part 96 rules for the general authorized access in 3.5GHz bands.

* + 1. 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. 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 amendment defines coexistence methods for systems operating in additional frequency bands unique to IEEE 802.19.1.

* + 1. 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:

1. Demonstrated system feasibility.

No new ground is being broken here. This amendment is merely adding the additional methods for systems operating in new frequency bands.

1. Proven similar technology via testing, modeling, simulation, etc.

Same as 1.2.4 a) and extensive existing knowledge of coexistence techniques will be applied to develop the coexistence standard.

* + 1. 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:

1. Balanced costs (infrastructure versus attached stations).

Since there are no added hardware costs, the balance remains unchanged

1. Known cost factors.

By providing a toolset of components to be used to enable coexistence in communication systems, this amendment will enable system designers to select an appropriate cost/performance trade-off. Additionally, because the amendment defines methods above the MAC layer, cost of supporting this amendment is expected to be minimal and incremental. Finally, network-based coexistence solution costs are amortized over millions of users further reducing per-user cost.

1. Consideration of installation costs.

This amendment will not introduce additional installation cost.

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

This amendment will not introduce additional operational costs

1. Other areas, as appropriate.

None.

Reference:

19-09/0081r2: 5 Criteria Document for 802.19 TVWS