**IEEE P802.15**

**Wireless Personal Area Networks**

|  |  |  |
| --- | --- | --- |
| Project | IEEE P802.15 Working Group for Wireless Personal Area Networks (WPANs) | |
| Title |  | |
| Date Submitted | [21 January 2016] | |
| Source | [Kunal Shah] [] [address] | Voice: [ ] Fax: [ ]  E-mail:[kshah @ silverspringnet.com ] |
| Re: |  | |
| Abstract | [CSD for 802.15.4v Regional Sub-GHz] | |
| Purpose | [CSD for 802.15.4v Regional Sub-GHz] | |
| Notice | This document has been prepared to assist the IEEE P802.15. 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 P802.15. | |

# CRITERIA FOR STANDARDS DEVELOPMENT (CSD)

Based on IEEE 802 LMSC Operations Manuals approved 13 November 2015

Last edited 3 December 2015

**Amendment to IEEE Std 802.15.4:**

**Amendment for usage of Regional Sub-GHz bands**

# 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.

## Project process requirements

### 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.

While no new managed objects are anticipated, any managed objects that are required will be defined as part of the project.

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

### 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) Yes
2. If not, explain why the CA document is not applicable.

## 5C requirements

### 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 base standard was originally developed to service the needs of wireless sensor networks on available spectrum by regions. However, with the rapid growth in applications for Short Range Devices (SRDs) in Europe, Conference of Postal and Telecommunications Administrations (CEPT) Electronic Communications Committee (ECC) has announced to open up a new spectrum, 870-876 MHz and 915-921 MHz spectrum for SRDs. The new spectrum also opened in various other regions, including the 902-928 MHz band in Mexico, the 902-907.5 MHz & 915-928 MHz band in Brazil, the 915-928 MHz band in Australia/ New Zealand and Asian regional frequency bands. The availability of this additional spectrum brings considerable benefits of the standard in new regions and will provide an opportunity to some important applications such as smart metering and new uses in the automotive industry.

Also in some regions, including 470-510 MHz band in China and 863-870 MHz band in Europe, the regional requirements have been updated, which makes channel parameters in the standard conflict with regional requirements.

To make use of the existing regional frequency bands in the approved standard, the channel parameters need to be aligned with the regional requirements.

1. Multiple vendors and numerous users.

There are many silicon and system vendors already producing devices and systems based on IEEE 802.15.4 for use in Internet of Things (IoT) applications which includes things like consumer electronics, mobile devices, building automation, medical applications, SmartGrid, and industrial control and therefore has a very large end user community.

### 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? While the standard shall comply with IEEE Std 802, it cannot comply with IEEE Std 802.1Q and IEEE Std 802.1AC because IEEE Std 802.15.4 uses 64-bit MAC addresses.

b) If the answer to a) is no, supply the response from the IEEE 802.1 WG. Compliance with IEEE Std 802.1Q and IEEE Std 802.1AC is not possible due to IEEE Std 802.15.4 using 64-bit MAC addresses

* + 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 uniquely addresses IEEE 802.15.4 operation in 870-876 MHz and 915-921 MHz spectrum, as well as new spectrum in various other regions, including 902-928 MHz band in Mexico, 902-907.5 MHz & 915-928 MHz band in Brazil, 915-928 MHz band in Australia/ New Zealand and Asian regional frequency bands.

### 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.

This project does not require any new technical innovation to implement.

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

See a)

### 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).

This project can be implemented with no change to the existing device cost basis which has been demonstrated, through millions of shipped devices, to be suitable to effectively address IoT networking needs.

1. Known cost factors.

See a)

1. Consideration of installation costs.

Installation costs are not affected by this amendment

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

There are already IEEE 802.15.4 devices in volume shipment operating in nearby frequency bands. Complying with the regulatory requirements of this band has zero impact on these well-known operational costs.

1. Other areas, as appropriate.