IEEE P802.15
Wireless Personal Area Networks

Project	IEEE P802.15 Working Group for Wireless Personal Area Networks (WPANs)
Title	**IEEE 802.15 SG L2R Working Draft 5c**
Date Submitted	[18 July, 2013]
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Re:	[Draft 5c for new recommended practice in IEEE 802.15]
Abstract	[Draft 5c for new recommended practice in IEEE 802.15 for preliminary review]
Purpose	[Working draft for preliminary review]
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IEEE P802.15 Low Rate Wireless Personal Area Networks Study Group Functional Requirements Standards Development Criteria

The IEEE P802.15.4 Study Group for Wireless Personal Area Networks (WPANs) reviewed and completed the required IEEE Project 802 Functional Requirements, Standards Development Criteria (a.k.a. the Five Criteria). The IEEE 802.15 WPAN Five Criteria response is in Italics below.

1. BROAD MARKET POTENTIAL

a) Broad sets of applicability

The increasing use of WPAN networks, where the network is dynamically changing, such as in Field Area Networks and Neighborhood Area Networks and even Home Area Networks requires route handling for changes on the order of a minute time frame.

b) Multiple vendors and numerous users

The membership of IEEE 802.15 demonstrates the interest in WPANs. Members include international wireless industry leaders, academic researchers, semiconductor manufacturers, communication equipment manufacturers, system integrators and end users.

There are at least 14 semiconductor manufacturers that are already providing chipsets for IEEE 802.15.4. The 802.15.4 based solutions have been used and are being used in a wide range of applications.

2. COMPATIBILITY

IEEE 802 LMSC defines a family of standards. All standards should be in conformance : IEEE Std 802, IEEE 802.1D, and IEEE 802.1Q. If any variances in conformance emerge, they shall be thoroughly disclosed and reviewed with IEEE 802.1 WG. In order to demonstrate compatibility with this criterion, the Five Criteria statement must answer the following questions.

    a) **Does the PAR mandate that the standard shall comply with IEEE Std 802, IEEE Std 802.1D and IEEE Std 802.1Q?**

    b) **If not, how will the WG ensure that the resulting draft standard is compliant, or if not, receives appropriate review from the IEEE 802.1 WG?**

The PAR does not mandate compliance with IEEE Std. 802, IEEE Std. 802.1D or IEEE Std. 802.1Q. 802.15.10 will schedule regular joint meetings with 802.1 to facilitate review of the Recommended Practice draft as it is developed.

3. DISTINCT IDENTITY

a) Substantially different from other IEEE 802 standards.

This new IEEE 802.15 recommended practice will enable networking for WPANs and minimizes the route handling overhead for dynamically changing mesh networks.

b) One unique solution per problem (not two solutions to a problem).

The proposed new recommended practice in IEEE 802.15 will provide a unique solution for dynamically changing mesh networks.

c) Easy for the document reader to select the relevant specification.

The proposed new recommended practice in IEEE 802.15 will include a recommended specification for the route handling of dynamically changing mesh networks.

4. TECHNICAL FEASIBILITY

a)   Demonstrated system feasibility

Approaches to route handling of dynamically changing networks are in use today in pilot programs and in operational networks.

b) Proven technology, reasonable testing

Many examples of route handling of dynamically changing networks have not only been published in the literature and demonstrated in laboratories worldwide, but have deployed in operational networks.

c) Confidence in reliability

Confidence in reliability has been consistently demonstrated in currently deployed non IEEE based solutions.

Coexistence of 802 wireless standards specifying devices for unlicensed operation

An appropriate coexistence assurance document will be created.

5. ECONOMIC FEASIBILITY

a) Known cost factors, reliable data

IEEE 802.15.4 devices, implementing meshed network protocols, will make use of the existing high volume applications in the targeted frequency bands. The incremental cost for implementation is expected to be minimal.

b) Reasonable cost for performance

Performance and costs associated with route handling solutions for meshed network protocols have been shown to be minimal.

c) Consideration of installation costs

One of the IEEE 802.15 standard objectives includes low cost installation with minimal or no operator intervention.