IEEE P802.15
Wireless Personal Area Networks

Project	IEEE P802.15 Working Group for Wireless Personal Area Networks (WPANs)		
Title	**TG2 Baseline Recommended Practices**		
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Re:			
Abstract	This contribution presents the first version of the IEEE 802.15.2 Recommended Practices Guide, mostly in outline form		
Purpose	Continue the discussion of the outline provided by Steve Shellhammer and to start providing text for the sections.		
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1 Overview

1.1 Scope

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3 Definitions

Backward Compatible – The ability of one "new" system to interwork with another "old" system. In this case the different set of rules implies that the new set of rules is a modification of the old set of rules. "A subset of interworking.

Coexistence – The ability of one system to perform a task in a given shared environment where other systems may or may not be using the same set of rules. *(99-134r2)*

Collaborative coexistence mechanism - If it is possible for the WPAN and the WLAN to exchange information between one another, then it is possible to develop a Collaborative Coexistence Mechanism where the two wireless networks collaborate to minimize mutual interference. *(00/009r2)*

Conformance - The ability of a system to follow a single set of rules.

Connection-oriented – data transmission in which the information-transfer phase is preceded by a call-establishment phase and followed by a call-termination phase. *(Communications Standard Dictionary 2ed. M. Weik)*

Direct sequence spread spectrum -

Frequency-hopping – It is a technique in which the instantaneous carrier frequency of a signal is periodically changed, according to a predetermined code, to other positions within a frequency spectrum that is much wider that that required for normal message transmission. *(Communications Standard Dictionary 2ed. M. Weik)* *A modulation technique used for multiple access. (IEEE 100-1992)*

Interference – In a communication system, extraneous power entering or induced in a channel from natural or man-made sources that might interfere with reception of desired signals or the disturbance caused by the undesired power. *(Communications Standard Dictionary 2ed. M. Weik)*

In a data transmission path, either extraneous power which tends to interfere with the reception of the desired signals or the disturbance of signals which results. (IEEE 100-1992)

Interoperable - The ability of two systems to perform a given task using a single set of rules.

Interworking - The ability of two systems to perform a task given that each system implements a different set of rules.

Multipath delay –

Multipath fading – fading due to the propagation of an electromagnetic wave over many different paths, dissipating energy and causing distortion, particularly by signal cancellation at the destination because of differences in arrival time due to the different paths. *(Communications Standard Dictionary 2ed. M. Weik)*

Non-collaborative coexistence mechanism- If there is no method to exchange information between the two wireless networks (WLAN and WPAN), then you can use a Non-Collaborative Coexistence Mechanism. *(00/009r2)*

Operable - The ability of a system to perform the functions as expected.

Propagation – The movement or transmission of a wave in a medium or in free space, usually described in terms of phase or group velocity. *(Communications Standard Dictionary 2ed. M. Weik)* *A travel of waves through or along a medium (IEEE 100-1992)*

Spread spectrum – A communication technique in which the information-modulated signal is transmitted in a bandwidth that is considerably greater than the frequency content of the original information. *(Communications Standard Dictionary 2ed. M. Weik)* *A modulation technique for multiple access, or for increasing immunity to noise and interference (IEEE 100-1992)*

Synchronous – Pertaining to events that occur at the same time or at the same rate. *(Communications Standard Dictionary 2ed. M. Weik)* *A device whose speed of operation is related to the rest of the system to which the device is connected (IEEE 100 1992)*

Synchronous connection-oriented link - a point-to-point link between a master and a single slave in the piconet. *(Bluetooth)*

4 Acronyms and abbreviations

DSSS	direct sequence spread spectrum *(IEEE802.11)*
FHSS	frequency-hopping spread spectrum *(IEEE802.11)*
MAC	medium access control *(IEEE802)*
RF	radio frequency *(Bluetooth)*
SCO	synchronous connection-oriented *(Bluetooth Baseband)*

5 General descriptions

5.1 Description of the interference problem

5.2 Overview of the coexistence model

5.3 Overview of the coexistence mechanisms

5.4 Overview of the document

The layout of the remaining document consists of the Physical layer models between IEEE 802.11 and IEEE 802.15.1 and their related RF channel models under various characteristics; the MAC layer models for IEEE 802.11 and IEEE 802.15.1 and their related various data traffic models; the performance metrics used to evaluate the results of simulations; the results of the coexistence modeling; theoretical coexistence models; experimental validation of models; and finally some coexistence mechanisms.

6 Physical layer models

6.1 IEEE802.11 FHSS in the presence of 802.15.1

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6.4 IEEE802.15.1 in the presence of 802.11b

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14.4 Non-collaborative mechanism – IEEE 802.11 data rate selection and transmit power control