IEEE P802.15
Wireless Personal Area Networks

Project	IEEE P802.15 Working Group for Wireless Personal Area Networks (WPANs)	
Title		
Date Submitted	May 19, 2010	
Source	[Mark Wilbur (Aclara), Chin-Sean Sum (NICT)]	Voice: [+81-46-847-5092] Fax: [+81-46-847-5440] E-mail: [sum@nict.go.jp]
Re:		
Abstract	IEEE 802.15 Task Group TG4g Comment Resolution	
Purpose		
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The document provides resolution for the following comments:
79-102, 104-122, 126-127, 140-141, 146-152 (clarification and improvement of text for device classes), 258, 688, 693, 746, 1707-1713 (CSM index 0), 687 (cross reference), 697, 699, 706, 711-715, 723-727, (bandwidth to channel spacing), 710 (channel spacing in Japan), 1670 (CSM for device classes), 1767, 1768 (clarification of the CSM usage)

Editorial note: Modify 5.2a as below

5.2a SUN Device Classes

Several device classes have been established to logically group PHY modes capable of the supporting the basic communications necessary to support coordinated coexistence.

Device Class 1 (OFDM) is defined as a class of devices forming a network primarily utilizing OFDM modulation format

Device Class 2 (**FSK, O-QPSK)** is defined as a class of devices forming a network primarily utilizing FSK or O-QPSK modulation format

Device Class 3 (NB-FSK) is defined as a class of devices forming a network primarily utilizing Narrow Band FSK modulation format

Device Class 0 (Multi-PHY-Mode) is defined as a class of devices forming a network that includes a coexistence-network-coordinator (CNC) capable of coordinating communications between device classes 1, 2 and 3.

Common signaling modes (CSM) have been defined to ensure all devices within each device class are able to efficiently establish communications that could be used to coordinate coexistence and other network operational information.
The individual CSM mode details are defined in table 6a.

Editorial note: Modify 5.2b as below

5.2b Multi-PHY mode (MPM) Management of the SUN WPAN

A device shall implement at least one or more than one of the following PHY modes: the MR-FSK PHY, the OFDM PHY and the MR-O-QPSK PHY. Given the fact that the specified PHYs may be overlapped in the same frequency band, coexistence mechanism is essential. In order to mitigate interference due to networks with different PHY modes operating in the same location, a Multi-PHY-Mode (MPM) management scheme is

specified to enable inter-PHY-mode coexistence. For this purpose, the MPM management scheme facilitates negotiation among potential network coordinators with different PHY modes before starting respective networks by employing a common communication bridge known as the Common Signaling Mode, appropriate to the band being used.

Editorial note: Modify 6.1a as below

6.1a Common Mode Signaling (CSM)

To facilitate the MPM management scheme described in 7.5.8c, CSM index 0 is specified. A compliant device acting as a coexistence network coordinator (*i.e.* CNC) shall be able to transmit and receive CSM index 0. The modulation and channel specification of CSM index 0 is given in Table 1a while the details of the PHY design are specified in 6.12a.

All SUN devices shall be capable of communications utilizing at least one of the CSM PHY modes defined in Table 6a in order to support coexistence with other device operating in the same device class. The CSM PHY mode could be used to communicate the RTJ and RTJR commands defined in 7.3.9 and 7.3.9a.

Table 6a PHY Specification of the CSM

Device Class Index	**Band (MHz)**	**Modulation**	**BT**	**Modulation Index / Rate****	**Channel Spacing (kHz)**	**Data Rate (kbps)**	***Channel****
0	2400 902-928 863-870 470-510	(G)FSK	0.5 for GFSK, N/A for FSK and QPSK	1	200	50	Center Band Channel
	950-956				400	100	
1	All	QPSK		1/2**	200	100	
2	All	FSK		0.5		50	
3	All	FSK		1	12.5	4.8	

* *Channel* refers to the common channel in the band where CSM is transmitted and detected. Should the band have an odd number of channels, the channel directly below the center channel shall be used.

Editorial Note: Delete 7.5.8a

7.5.8a Common signaling mode (CSM)

The CSM is defined as the mandatory mode for a given band defined in 6.1.1, 6.12a, 6.12b, 6.12c. The CSM mode will be used to communicate the RTJ and RTJR commands defined in 7.3.9a and 7.3.9b