IEEE P802.11
Wireless LANs

|  |
| --- |
| Resolution for CIDs in 11-21/0724r3 Comments on P802.11bb/D0.4 |
| Date: 2021-05-24 |
| Author(s): |
| Name | Affiliation | Address | Phone | email |
| Nancy Lee | Signify |  |  | nancy.lee@signify.com |
|  |  |  |  |  |

Abstract

This submission proposes resolutions for CIDs 16 and 28 in 11-21/0724r3 Comments on P802.11bb/D0.4.

***Discussion: Highlighted text preceded by “Discussion” are not to be copied into the TGbb Draft. Such text provides rationale for the proposed changes.***

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| CCI | Comment | Page | Subclause | Line | Proposed Change |
| 16 | Unnecessary restriction to BPSK and code rate 1/2. This might be acceptable if CM PHY was restricted to the initial association phase, but there's no such restriction. This restriction could lead to excessive occupation of the medium. Better to allow all modulation and coding supported by the OFDM PHY and let implementations decide on the best tradeoff between reliability and speed. | 15 | 32.3.2 | 27 | Refer LC Common mode to Clause 17 (OFDM) to enable other modulation and coding; a basic LC implementing LC CM should be similar to a Wi-Fi device implementing OFDM PHY (802.11a) |
| 28 |  Having a single PHY dot11PHYType for 3 different modes will not work.  | 23 | 32.3.5.3 | 1 | have separate dot11PHYType values for each LC PHY mode. |
|  |  |  |  |  |  |

***Discussion: The resolution of CCI 16 is based on the first paragraph of 17.1.1 General, which reads:***

***“This clause specifies the PHY entity for an orthogonal frequency division multiplexing (OFDM) system. The OFDM system provides a WLAN with data payload communication capabilities of 6, 9, 12, 18, 24, 36, 48, and 54 Mb/s. The support of transmitting and receiving at data rates of 6, 12, and 24 Mb/s is mandatory. The system uses 52 subcarriers that are modulated using binary or quadrature phase shift keying (BPSK or QPSK) or using 16- or 64-quadrature amplitude modulation (16-QAM or 64-QAM). Forward error correction coding (convolutional coding) is used with a coding rate of 1/2, 2/3, or 3/4.”***

**32.3.2 LC PHY modes**

The LC PHY can be operated in three principal modes, referred to as LC Common mode, LC HE mode and LC Optimized mode.

The **LC Common mode (CM)** is transmitted in the wavelength range between 800 and 1000 nm in single-input single-output (SISO) operation. In the LC Common mode, data subcarriers are modulated using BPSK, QPSK, 16-QAM, or 64-QAM. Forward error correction (FEC) is based on convolutional coding with code rate of ½, 2/3, or 3/4. The LC Common mode provides support for 20 MHz bandwidth only.

The **LC High Efficiency (HE) mode** is transmitted in the wavelength range between 800 and 1000 nm. In the LC HE mode, data subcarriers are modulated using BPSK, BPSK DCM, QPSK, QPSK DCM, 16-QAM, 16- QAM DCM, 64-QAM and 256-QAM. Forward error correction (FEC) coding (convolutional or LDPC coding) is used with coding rates of 1/2, 2/3, 3/4 and 5/6. The LC HE mode provides support for 20 MHz and 40 MHz, 80 MHz and 160 MHz contiguous channel widths, 80+80 MHz non-contiguous channel width.

***Discussion: For CCI 28, LC HE mode can reuse the dot11PHYType value for HE PHY because the LC HE mode PHY is largely the same as 27 HE PHY. The value dot11PHYType = he is specified in Table 27-53 (HE PHY MIB attributes) in 27.4.2 (PHY MIB).***

32.3.5.3 LC HE PLME

The LC HE PMLE shall be the same as 27.4 (HE PLME).