IEEE P802.11  
Wireless LANs

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| Comment resolutions for clause 22.3.20 | | | | |
| Date: 5/2/2012 | | | | |
| Author(s): | | | | |
| Name | Affiliation | Address | Phone | email |
| Sigurd Schelstraete | Quantenna Communications | 3450 W. Warren Ave  Fremont, CA 94538  USA | +1 510 743 2288 | Sigurd@quantenna.com |
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Abstract

This document proposes a resolution for CIDS 5207, 5209 and 5218.

## CID 5207 and 5209:

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| **CID** | **Page** | **Clause** | **Comment** | **Proposed Change** |
| 5207 | 260.41 | 22.3.20 | Description of exchange with PMD needs corrections | The text states that "At the PMD layer, the data octets are sent in 0-7 order and presented to the PHY through PMD\_DATA.request primitives." There seem to be a couple of things wrong with this sentence: - replace "presented to the PHY" with "presented to the PMD" - The sentence suggests byte-based exchange with the PMD layer. In fact PMD\_DATA.request exchanges bits per OFDM symbol (see 22.6.5.2). After encoding and scrambling, there is no notion of bytes anymore. |

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| 5209 | 260.27 | 22.3.20 | Description of PLCP transmit procedure needs improvement | The description of the PLCP transmit procedure in lines 27-59 needs general improvement. MAC/PHY and PLCP/PMD interactions are not clearly separated. |

Proposed resolution: Revised. Modify the text in section 22.3.20 as shown in section “Proposed resolution for CIDs 5207 and 5209” in 802.11-12/0533R01.

### Proposed resolution for CIDs 5207 and 5209

**22.3.20 PLCP transmit procedure**

(…)

The PHY indicates the state of the primary channel and other channels (if any) via PHY-CCA.indication (see

22.3.19.5 (CCA sensitivity) and 7.3.5.11 (PHY-CCA.indication)). Note that under some circumstances, the MAC uses the value of PHY-CCA.indication before (and if) issuing the PHY-TXSTART.request. Transmission of the PPDU shall be initiated by the PLCP after receiving the PHY-TXSTART.request(TXVECTOR) primitive. The TXVECTOR elements for the PHY-TXSTART.request are specified in Table 22-1 (TXVECTOR and RXVECTOR parameters).

The PLCP shall issue the parameters in the following PMD primitives to configure the PMD:

— PMD\_TXPWRLVL

— PMD\_TX\_PARAMETERS

The PLCP shall then issue a PMD\_TXSTART.request, and transmission of the PLCP preamble may start, based on the parameters passed in the PHY-TXSTART.request primitive. After the PLCP preamble transmission is started, the PHY entity immediately initiates data scrambling and data encoding. The encoding method for the Data field is based on the FEC\_CODING, CH\_BANDWIDTH, NUM\_STS, STBC, MCS, and NUM\_USERS parameter of the TXVECTOR, as described in 22.3.2 (VHT PPDU format). The SERVICE field and PSDU are encoded as described in 22.3.3 (Transmitter block diagram).

PHY padding bits are appended to the PSDUthe number of bits in -number of sAt the PMD layer, the data is passed from PLCP to PMD one symbol at a time through PMD\_DATA.request primitives.

Transmission can be prematurely terminated by the MAC through the primitive PHY-TXEND.request. PSDU transmission is terminated by receiving a PHY-TXEND.request. In single user transmission, normal termination occurs after the transmission of the final bit of the last PSDU octet, according to the number of OFDM symbols indicated supplied in the N\_SYM field. When PPDU transmission is completed, the PHY entity enters the receive state.

In the PMD, the GI or short GI is inserted in every OFDM symbol as a countermeasure against delay spread. A typical state machine implementation of the transmit PLCP for single user is provided in Figure 22-26. Requests (.request) and confirmations (.confirm) are issued once per state as shown.

This state machine does not describe the operation of optional features, such as multi-user, LDPC or STBC.

## CID 5218

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| **CID** | **Page** | **Clause** | **Comment** | **Proposed Change** |
| 5218 | 262.46 | 22.3.20 | Inconsistency in PLCP state machine | The box labeled "TX PLCP Data" states: "16 bit service field prepended, padding and tail bits appended to PSDU". This implies that all data is available at this stage.  Immediately following, the diagram describes a byte-by-byte exchange between MAC and PHY to get the PSDU octets. This is inconsistent. |

Proposed resolution: Revised. Replace Figure 22-26 with the modified Figure in the section “Proposed Resolution for CID 5218” of document 802.11-12/0533R00.

### Discussion

This CID was partially resolved by submission 802.11-12/0372r1, which modified the diagram to more correctly reflect the flow of bytes from MAC to PLCP to PHY. Specifically, this moved the addition of padding and tail bits to a more logical place in the diagram. What remains to be done is to accommodate the bits of the service field.

Figure 22-26 as modified by 802.11-12/0372r1 is shown below:



### Proposed resolution for CID 5218

Further modify Figure 22-26 as shown below:

