### IEEE P802.11Wireless LANs

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| PHY Comment resolution for Clause 31.2 |
| Date: 2019-04-24 |
| Author(s): |
| Name | Affiliation | Address | Phone | email |
| Vinod Kristem | Intel Corporation | 2200 Mission College Blvd, Santa Clara, CA 950542200  |  | vinod.kristem@intel.com |
| Minyoung Park | Intel Corporation |  |  |  |
| Po-Kai Huang | Intel Corporation |  |  |  |

Abstract

This submission proposes resolutions for comments of TGba Draft D2.0 with the following CIDs: 2020, , 2501, , 2630, and 2791.

Revision History:

Rev 0: Initial Draft

Rev 1: CIDs 2108, 2274, 2275, 2489, and 2631 are deferred.

Note: All the cross-reference is with respect to TGba Draft 2.1

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| **CID** | **P.L** | **Clause** | **Comment** | **Proposed Change** | **Resolution** |
| 2020 | 108.29 | 31.2.14 | Fix ALL tables and figures in D2.0 for D3.0: the title (not the number) of the figures and tables need to be in parenthesis (....). Without the (....) it makes the text and sentences hard to read. | Figure 31-11 Change: "(PHY transmit.....WUR PPDU)"... | Revised. In the reference for tables and figures, the title is now in parenthesis. Note to editor: This change is already incorporated in Draft 2.1  |
| 2501 | 98.30 | 31.2.8 | The range of t should be specified | add 0<= t <= T\_(WUR\_PPDU) | Revised. Agree in principle. Added the range of t over which the equation is valid and defined the related parameters. TGba Editor to make changes as shown in 802.11-19/0682r1 with CID #2501. |
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| 2630 | 96.47 | 31.2.7 | Subcarrier spacing, IDFT/DFT period and Guard interval are not necessary constants for WUR PPDU. | Delete the first three rows of Table 31-3. They can be defined where they are used, e.g., Equation (31-3). | Revised.These parameter need to be defined, as they are being used in 31.2.4.1 and 31.2.4.2. Guard interval is different for Sync-field and LDR-Data. This is now fixed.TGba Editor to make changes as shown in 802.11-19/0682r1f with CID #2630. |
| 2791 | 90.64 | 31.2.4.1 | Having no energy at all in the middle of a packet may cause confusion to other devices in the network. | Change Off-Waveform to a waveform which has certain amount of energy. | Reject. The commenter fails to identify a clear technical problem and the proposed change is not clear.The maximum Off duration within the packet is 8 µs (corresponding to two consecutive LDR MC-OOK Off symbols), which is samller than the SIFS and DIFS duration. Hence, Off waveform with zero energy is not an issue. |

***TGba editor: Change the following paragraphs in 31.2.8 Mathematical description of signals: (Track change on) (#2501)***

…………………………………….(several lines of text)…………………………………………..

The baseband signal is constructed by the concatenation of several fields as shown in Figure 31-10 (Timing boundaries for the WUR PPDU Fields). It shall be as shown in Equation (31-2):

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The timing offset values for various fields are given below:

*tL-LTF* = *TL-STF*

*tL-SIG* = *tL-LTF* + *TL-LTF*

*tBSPK-Mark* = *tL-SIG* + *TL-SIG*

*tWUR-Sync* = *tBSPK-Mark* + *TBSPK-Mark*

*tWUR-Data* = *tWUR-Sync* + *TWUR-Sync*

*TWUR-PPDU* = *tWUR-Data* + *TWUR-Data*

where *TField* is the duration of the field, *TWUR-Sync* is the duration of WUR-Sync field, *TWUR-Sync*=*TWUR-sync-LDR* if low data rate is used to transmit the WUR-Data field of a WUR PPDU, and *TWUR-Sync*=*TWUR-sync-HDR* if high data rate is used to transmit the WUR-Data field of a WUR PPDU. *TWUR-Data* is the duration of WUR-Data field, with *TWUR-Data = NSym* x *TSym,* where *NSym* is the number of MC-OOK symbols in the WUR-Data field, as given in Equation (31-12). The duration of different fields of the WUR PPDU are provided in Table 31-3 (Timing-related constants).

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***TGba editor: Change the Table 31-3—Timing-realted constants: (Track change on) (#2630)***

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| * **Timing-related constants**
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| **Parameter** | **Value** | **Description** |
|  | 312.5 kHz | Subcarrier frequency spacing for WUR PPDU |
| *TDFT,WUR* | 3.2 µs | IDFT/DFT period for the WUR PPDU |
| *TGI,WUR* | 0.8 µs for 4 µs MC-OOK symbols; 0.4 µs for 2 µs MC-OOK symbols  | Guard interval duration for the WUR PPDU |
| *TGI,L-LTF* | 1.6 µs | Guard interval duration for the L-LTF field |
| *TSym-LDR* | 4 µs | Duration of WUR LDR MC-OOK symbol in WUR-Data field |
| *TSym-HDR* | 2 µs | Duration of WUR HDR MC-OOK symbol in WUR-Data field |
| *TSym* | *TSym-LDR* or *TSym-HDR* depending on WUR data rate | Duration of MC-OOK symbol in WUR-Data field |
| *TSync* | 2 µs | Duration of MC-OOK symbol in WUR-Sync field |
| *TL-STF* | 8 µs = 10 × *TDFT,*WUR /4 | Non-HT Short Training field duration |
| *TL-LTF* | 8 µs = 2 × *TDFT,*WUR + *TGI,*L-LTF | Non-HT Long Training field duration |
| *TL-SIG* | 4 µs | Non-HT SIGNAL field duration |
| *TBPSK-Mark* | 4 µs | BPSK-Mark field duration |
| *TWUR-Sync-LDR* | 128 µs | WUR-Sync field duration for WUR LDR |
| *TWUR-Sync-HDR* | 64 µs | WUR-Sync field duration for WUR HDR |
| *TWUR-Sync* | *T*WUR-Sync-LDR or *T*WUR-Sync-HDR depending on WUR data rate | WUR-Sync field duration for WUR PPDU |