IEEE P802.11
Wireless LANs

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| **Resolution to CID 4043** |
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Abstract

This submission proposes resolution for the following CID submitted to 1st SB for P802.11REVmd (1 CID):

* 4043

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| **CID** | **PP.LL** | **Comment** | **Proposed Change** | **Resolution** |
| 4043 | 1768.31 | The behaviour according to dot11DynamicEIFSActivated is true will be obsolete other than when the MPDU contained therein is 14 or 32 octets. HE PPDU has TXOP\_DURATION and if it has a valid value, then it will not cause EIFS. When the TXOP\_DURATION is set to UNSPECIFIED, then eq. (10-7) will be applied anyway. So, Table 10-8 will never be updated from 802.11ax. And BlockAck frame length will no further be limited to 32 octets from 802.11ax, as HE STAs use Multi-STA BlockAck and Compressed BlockAck with variable length. | Revert to the original EIFS description by deleting dot11DynamicEIFSActivated MIB variable and its related descriptions. Or, delete Table 10-8, eq. (10-8) and descriptions according to when dot11DynamicEIFSActivated is set to true except the paragraph starting with "When dot11DynamicEIFSActivated is true and the PPDU that causes the EIFS contains a single MPDU with a length equal to 14 or 32 octets, ...". Add "When dot11DynamicEIFSActivated is true, if the PPDU that causes the EIFS does not contain a single MPDU with a length equal to 14 or 32 octets, then EIFS is determined as shown in Equation (10-7)." at the end of that paragraph. | Revised. See the instructions to the TGax editor in doc. 11-20/0458r1. |

**Discussion**

Table 10-8 covers the modulations for 802.11a/b/g/n/ac, but not for 802.11ad/ah/aj. So the table is limited to a non-DMG and non-S1G STA operating in 2.4 GHz, 5 GHz, and 6 GHz bands. Note that in the 6 GHz band, 802.11b/g/n/ac modulations are not allowed, but an 802.11a modulation as non-HT (duplicate) is still allowed. (See 26.17.2.1 in P802.11ax D6.0.)

In TGax, a comment requesting to update Table 10-8 was submitted. As the commenter of CID 4043 stated, a BlockAck frame is no longer fixed length. So, Table 10-8 needed to incorporate not only modulations of HE PPDU but also variable-length BlockAck frame types for presumed response. But the table remained unchanged. There is a discussion to add the 56-octet length compressed BlockAck. At this moment, it is still premature to determine whether a frame of this length will be frequently used as a regular Data frame, but we may think of adding it in the future after further investigation. For now, Table 10-8 is kept as is.

It is currently true that most of the WLAN devices use 2.4 GHz or 5 GHz band and response frames that they transmit are Ack and fixed BlockAck frames sent in legacy ((HR-)DSSS and (ERP-)OFDM)) modulations. It is preferable to use legacy modulations for response frames from protection point of view. However, a variable-length BlockAck can be sent in response to a legacy PPDU. In this case, the actual time to cover the response time may differ from the static EIFS or the estimated time for the dynamic EIFS.

Change 10.3.7 of P802.11REVmd D3.0 as follows:

##### 10.3.7 DCF timing relations

1768.31

When dot11DynamicEIFSActivated is true, EIFS is based on an estimated duration of the PPDU that is the possible response to the PPDU that causes the EIFS. The estimation is based on properties of the PHY header of the PPDU that causes the EIFS, such as modulation, rate/MCS, or length.

NOTE—If the L-SIG field is used, as it does not have CRC protection, this information might not always be correct.

In a non-DMG and non-S1G STA, when dot11DynamicEIFSActivated is true, if the PPDU that causes the EIFS does not contain a single MPDU with a length equal to 14 or 32 octets, and the modulation of the PPDU that causes the EIFS is included in Table 10-8 (Determination of the EstimatedAckTxTime based on properties of the PPDU causing the EIFS), then EIFS is determined as shown in Equation (10-8).

EIFS = aSIFSTime + EstimatedAckTxTime + DIFS (10-8)

where

EstimatedAckTxTime is based on an estimated duration of the PPDU that is the possible response to the PPDU that causes the EIFS, as specified in Table 10-8 (Determination of the EstimatedAckTx-Time based on properties of the PPDU causing the EIFS).

When dot11DynamicEIFSActivated is true and the PPDU that causes the EIFS contains a single MPDU with a length equal to 14 or 32 octets, EIFS is equal to DIFS. This reflects the fact that a 14-octet or 32-octet MPDU is very likely an Ack or a BlockAck frame, which does not cause a response PPDU to be transmitted.

When dot11DynamicEIFSActivated is true and the modulation of the PPDU that causes the EIFS does not occur in Table 10-8 (Determination of the EstimatedAckTxTime based on properties of the PPDU causing the EIFS), then EIFS is determined as shown in Equation (10-7).