IEEE P802.11  
Wireless LANs

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| **Resolution to CID 4043** |
| **Date:** 2020-03-13 |

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| Tomoko Adachi | Toshiba | 1, Komukai Toshiba-cho, Saiwai-ku, Kawasaki, Japan | +81 44 549 2283 | tomo.adachi@toshiba.co.jp |

Abstract

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

* 4043

Interpretation of a Motion to Adopt

A motion to approve this submission means that the editing instructions and any changed or added material are actioned in the TGmd Draft. This introduction is not part of the adopted material.

***TGmd Editor: Editing instructions preceded by “TGmd Editor” are instructions to the TGmd editor to modify existing material in the TGmd draft. As a result of adopting the changes, the TGmd editor will execute the instructions rather than copy them to the TGax Draft.***

# 10.3.7

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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. | Agree in principle.  See the instructions to the TGax editor in doc. 11-20/0458r0. |
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**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 2.4 GHz and 5 GHz bands. Note that in 6 GHz band, 802.11a/b/g/n/ac modulations are not 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. It is understood that Table 10-8 will never be updated from 802.11ax.

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. So, the actual time to cover the response time may become far off the estimated time. It’s a matter of time when the table becomes obsolete.

And how can one confirm that a PPDU contains a single MPDU and further its length when the PPDU contained somekind of error and caused the EIFS? :-0

TGax Editor: Change the \*\* paragraph in 10.3.7 of P802.11REVmd D3.0 as follows:

##### 10.3.7 DCF timing relations

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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.

In a non-S1G STA operating in a 2.4 GHz or 5 GHz band, when dot11DynamicEIFSActivated is true, if the PPDU that causes the EIFS is determined not to 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).

However, if the EstimatedAckTxTime is determined not to be proper, then EIFS should be derived from Equation (10-7). How to determine the EstimatedAckTxTime is proper is out of scope of this standard.

When dot11DynamicEIFSActivated is true and the PPDU that causes the EIFS is determined to contain 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(M101) MPDU is very likely an Ack or a BlockAck frame, which does not cause a response PPDU to be transmitted.

How to determine whether the PPDU causing the EIFS contains a single MPDU with a length equal to 14 or 32 octets is out of scope of this standard.

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).

NOTE —No further update planned for Table 10-8 (Determination of the EstimatedAckTxTime based on properties of the PPDU causing the EIFS) to add modulations of PPDUs and response frame variations.

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