IEEE P802.11  
Wireless LANs

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| CR on EIFS and TXOP\_DURATION (10.3.2.3.7 and 27.11.5) | | | | |
| Date: 2017-01-26 | | | | |
| Author(s): | | | | |
| Name | Affiliation | Address | Phone | email |
| Jeongki Kim | LG Electronics | Seocho, Seoul, Korea |  | [jeongki.kim@lge.com](mailto:jeongki.kim@lge.com) |
| Suhwook Kim | LG Electronics | Seocho, Seoul, Korea |  | [suhwook.kim@lge.com](mailto:suhwook.kim@lge.com) |
| Kiseon Ryu | LG Electronics | Seocho, Seoul, Korea |  | [kiseon.ryu@lge.com](mailto:kiseon.ryu@lge.com) |
|  |  |  |  |  |
|  |  |  |  |  |

Abstract

This submission proposes resolutions for multiple comments related to TGax D1.0 with the following CIDs:

* 5 CIDs: 3089, 6057, 7527, 9599, 9385

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 TGax Draft. This introduction is not part of the adopted material.

***Editing instructions formatted like this are intended to be copied into the TGax Draft (i.e. they are instructions to the 802.11 editor on how to merge the text with the baseline documents).***

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

# EIFS and TXOP\_DURATION

| **CID** | **Page** | **Clause** | **Comment** | **Proposed Change** | **Resolution** |
| --- | --- | --- | --- | --- | --- |
| 3089 | 197.39 | 27.11.5 | HE AP continues to advertise BSS Color even when it has disabled the use of BSS Color. There should be mechanism which requires STAs to use the DURATION/ID value instead of BSS COLOR and TXOP\_DURATION field | Add sentence to this section: "An HE AP that has set the BSS Color Disabled value to 1 in HE Operation element shall set the TXOP\_DURATION to all 1s." | Revised-  Agree in principal with the commenter.  When the BSS Color is disabled, using TXOP\_DURATION to update the NAV may increase the ambiguity in NAV setting rule because the NAV can’t be distinguished (Intra-NAV or not). In this case, setting TXOP\_DURATION to all 1s can avoid this ambiguity.  And, note that to indicate that the TXOP\_DURATION is not specified(i.e., no duration information), we use ‘UNSPECIFIED’ value instead of ‘all 1s’ in TX/RXVECTOR parameter TXOP\_DURATION.  And, in BSS Color disabled case, if Trigger frame is sent using non-HT PPDU, the TXOP\_DURATION of HE TB PPDU will be set to the value calculated with Duration field of Trigger frame. To avoid it, in this case, proposes to send a Trigger frame using HE PPDU.  TGax editor makes changes as shown in the as specified in 11-17/0344r0. |
| 6057 | 114.32 | 10.3.2.3.7 | When BSS Color is diabled, EIFS can be invoked if BSS Color is disabled although a valid TXOP\_DURARION is present in the received Intra-BSS PPDU because Intra-BSS NAV is not updated by TXOP\_DURATION. Therefore, the EIFS related text should be updated. | Change the related text in 10.3.2.3.7 as follows:  EIFS shall not be invoked if a valid TXOP\_DURATION parameter is present in the RXVECTOR of a received HE PPDU and the most recently received HE Operation element from the AP to which it is associated contained a value of 0 in the BSS Color Disabled subfield | Revised-  Agree in principal with the commenter.  But, according to the resolution of CID 3098 (Setting TXOP\_DURATION to UNSPECIFIED when BSS Color is disabled), we don’t need to describe additional texts in the BSS color disabled case. But, the indicated text needs to be updated as the below suggested text.  TGax editor makes changes as shown in the as specified in 11-17/0344r0. |
| 7527 | 114.32 | 10.3.2.3.7 | HE PPDU with 'all 1' in TXOP\_DURATION should still have EIFS protection if only preamble is decoded by 3rd party STA. Clause 27.11.5 specifies conditions that it can be set to 'all 1' so it is a valid parameter | changed 'if a valid TXOP\_DURATION parameter' to 'if there is duration information for NAV setting indicated in the TXOP\_DURATION parameter' | Revised-  Agree in principal with the commenter.  To avoid the ambiguity of ‘a valid TXOP\_DURATION’, we use the explicit sentence as the resolution of CID 6057.  TGax editor makes changes as shown in the as specified in 11-17/0344r0. |
| 9599 | 114.27 | 10.3.2.3.7 | "Reception of an error-free frame during the EIFS or EIFS-DIFS+AIFS[AC] resynchronizes the STA to the actual busy/idle state of the medium, so the EIFS or EIFS-DIFS+AIFS[AC] is terminated..."  On the above EIFS termination, a receptation of an HE PPDU containing a valid TXOP\_DURATION parameter shall be also included. | As per comment. | Revised-  Agree in principal with the commenter.  TGax editor makes changes as shown in the as specified in 11-17/0344r0. |
| 9385 | 114.33 | 10.3.2.4 | What is a valid TXOP\_DURATION? Setting to all 1s is valid or not? | Please Clarify it. | Revised.  In principle, a valid TXOP\_DURATION means that it’s not set all 1s (for indicating no duration information). But, to avoid the ambiguity of it, instead of a valid TXOP\_DURATION, the TXOP\_DURATION set to UNSPECIFIED is used for the purpose.  Wrong subclause (10.3.2.4 ->10.3.2.3.7).  TGax editor makes changes as shown in the as specified in 11-17/0344r0. |

**10.3.2.3.7 EIFS**

***TGax editor: change the sub-clause 10.3.2.3.7 as the following:***

A DCF shall use EIFS before transmission, when it determines that the medium is idle following reception of a frame for which the PHY-RXEND.indication primitive contained an error or a frame for which the FCS value was not correct. Similarly, a STA’s EDCA mechanism under HCF shall use the EIFS-DIFS+AIFS[AC] interval. The duration of an EIFS is defined in 10.3.7 (DCF timing relations). The EIFS or EIFS–DIFS+AIFS[AC] interval shall begin following indication by the PHY that the medium is idle after detection of the erroneous frame, without regard to the virtual CS mechanism. The STA shall not begin a transmission until the expiration of the later of the NAV and EIFS or EIFS–DIFS+AIFS[AC]. The EIFS and EIFS–DIFS+AIFS[AC] are defined to provide enough time for another STA to acknowledge what was, to this STA, an incorrectly received frame before this STA commences transmission. Reception of an error-free frame or an HE PPDU containing the RXVECTOR parameter TXOP\_DURATION which is not set to UNSPECIFIED (#9599) during the EIFS or EIFS–DIFS+AIFS[AC] resynchronizes the STA to the actual busy/idle state of the medium, so the EIFS or EIFS–DIFS+AIFS[AC] is terminated and medium access (using DIFS or AIFS as appropriate and, if necessary, backoff) continues following reception of ~~that~~ the error-free frame or following an expected end of the received HE PPDU (#9599). At the expiration or termination of the EIFS or EIFS–DIFS+AIFS[AC], the STA reverts to the NAV and physical CS to control access to the medium.

EIFS shall not be invoked if the NAV is updated by the frame that would have caused an EIFS. EIFS shall not be invoked for an A-MPDU if one or more of its frames are received correctly. EIFS shall not be invoked if ~~a~~ ~~valid~~ the RXVECTOR parameter TXOP\_DURATION ~~parameter is present in the RXVECTOR~~ of a received HE PPDU is not set to UNSPECIFIED.(#6057, 7527)

***TGax editor: Add the the following texts at the end of subclause 25.11.4***

An HE AP that has set the BSS Color Disabled field to 1 in HE Operation element it transmits shall set the TXVECTOR parameter FORMAT to HE for PPDUs that carry one or more Trigger frames. (#3089)

***TGax editor: Add the the following texts after the fourth paragraph in sub-clause 25.11.5***

An HE AP that has set the BSS Color Disabled value to 1 in HE Operation element shall set the TXVECTOR parameter TXOP\_DURATION to UNSPECIFIED in HE PPDUs that it transmits to non-AP STAs associated to it. (#3089)

An HE non-AP STA should set the TXVECTOR parameter TXOP\_DURATION to UNSPECIFIED in HE PPDUs that it transmits to the AP when the BSS Color Disabled field is 1 in the most recently received HE Operation element from the AP to which it is associated.(#3089)