IEEE P802.11
Wireless LANs

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| Resolution to CID 1195 |
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Abstract

This document introduces normative text based on discussions during a TGmd teleconference reviewing 11-18/810. This submission also intends resolving CID 1195.

*Modify [1] as shown in the following:*

10.24.2.7 Sharing an EDCA TXOP

The AC associated with the EDCAF that gains an EDCA TXOP is referred to as the primary AC. Frames from ACs other than the primary AC shall not be included in the TXOP, with the following exceptions (TXOP sharing):

* Frames from a higher priority AC may be included when the primary AC is non-empty at the start of the TXOP and after all frames from the primary AC have been transmitted.
* Frames from a higher or lower priority AC may be included at any time in a VHT or S1G MU-PPDU with TXVECTOR parameter NUM\_USERS > 1 when these frames do not increase the duration of the VHT or S1G MU-PPDU beyond that required for the transmissions of the frames of the primary AC.

The TXOP limit of the primary AC shall apply to a shared TXOP.

NOTE—Transmited frames from a higher priority AC are included in the used\_time of the primary AC when admission control is required for the primary AC. See 10.24.4.2 (Contention based admission control procedures).

NOTE—An AP can protect an immediate response by preceding the VHT (11ah)or S1G MU PPDU (which might have TXVECTOR parameter NUM\_USERS > 1) with an RTS/CTS exchange or a CTS-to-self transmission.

***Delete Figure 10-27 (Illustration of TXOP sharing and PPDU construction.***

10.24.2.8 Multiple frame transmission in an EDCA TXOP

A frame exchange, in the context of multiple frame transmission in an EDCA TXOP, may be one of the following:

— A frame not requiring immediate acknowledgment (such as a group addressed frame or a frame transmitted with an acknowledgment policy that does not require immediate acknowledgment) or an A-MPDU containing only such frames

— A frame requiring acknowledgment (such as an individually addressed frame transmitted with an acknowledgment policy that requires immediate acknowledgment) or an A-MPDU containing at least one such frame, followed after SIFS by a corresponding acknowledgment frame

— Either

— a VHT NDP Announcement frame followed after SIFS by a VHT NDP followed after SIFS by a PPDU containing one or more VHT Compressed Beamforming frames, or

— a Beamforming Report Poll frame followed after SIFS by a PPDU containing one or more VHT Compressed Beamforming frames

Multiple frames may be transmitted in an EDCA TXOP that was acquired following the rules in 10.24.2.4 (Obtaining an EDCA TXOP) if there is at least one frame pending in the primary AC for which the channel has been acquired. Frames that are pending in other ACs shall not be transmitted in this EDCA TXOP except permitted by the rules in 10.24.2.7 (Sharing an EDCA TXOP).

If a TXOP holder has in its transmit queue an additional frame of the primary AC and the duration of transmission of that frame plus any expected acknowledgment for that frame is less than the remaining TXNAV timer value and, if dot11MCCAActivated is true, the remaining RAV timer value, then the TXOP holder may commence transmission of that frame a SIFS (or RIFS, if the conditions defined in 10.3.2.3.2 (RIFS) are met) after the completion of the immediately preceding frame exchange sequence, subject to the TXOP limit restriction as described in 10.24.2.9 (TXOP limits). A STA shall not commence the transmission of an RTS with a bandwidth signaling TA until at least a PIFS after the immediately preceding frame exchange sequence. (11aj)A CMMG STA shall not commence the transmission of an RTS frame until at least PIFS time after the immediately preceding frame exchange sequence. An HT STA that is a TXOP holder may transmit multiple MPDUs of the same AC within an A-MPDU as long as the duration of transmission of the A-MPDU plus any expected BlockAck frame response is less than the remaining TXNAV timer value and, if dot11MCCAActivated is true, the remaining RAV timer value. (11ah)An S1G STA that is a TXOP holder may transmit multiple MPDUs of the same AC within an A-MPDU as long as the duration of transmission of the A-MPDU plus any expected (NDP) BlockAck frame response is less than the remaining TXNAV timer value.

# References

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| [1]  | IEEE 802.11 TGmd, “IEEE P802.11-REVmd/D1.2,” 2018. |