IEEE P802.11
Wireless LANs

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Abstract

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| 6448 | Mark RISON | 188 | 3 | Steps should be taken to ensure that a BFee does not violate a non-zero TXOP Limit | One of more of the following options, among other options, might be suitable:Option 1: a BFee shall not transmit any response if it would not fit in the remaining TXNAV duration (from the Duration field(s) of the frame(s) transmitted by the BFer), suitably selecting the grouping, codebook and (for SU) Nc. If no combination will fit, then the BFee shall send a "null" beamforming report. If this won't fit, then the BFee shall not transmit any responseOption 2: same as option 1 but just a "should use grouping etc. to make it fit"Option 3: the BFer shall use the BFee's BF response history to determine what request is likely to result in a response which fits (a bit wooly!)Option 4: the BFer shall, unless the duration estimate is such that the TXOP Limit cannot be violated, only do BF frame exchanges (NDPA NDP VCB [BRP VCB]\*) at the start of a TXOP and shall not transmit a frame if the TXOP Limit has been violated (e.g. need to do the [BRP VCB] in a subsequent TXOP)Option 5: the BFee shall not choose MCS/grouping/codebook/Nc which would result in a duration greater than that which the BFee would estimate (based on the 8.2.5.2 rules) | Reject.Existing baseline indicates that responder is not responsible for correctness of TXOP limits; baseline also enables transmitter to do smart adaptation of the NAV settings based on the expected response; baseline also allows BFer to set a conservative NAV and cancel it. Implementation should choose the preferred approach.  | MU |

**Discussion**

*Option 1: a BFee shall not transmit any response if it would not fit in the remaining TXNAV duration (from the Duration field(s) of the frame(s) transmitted by the BFer), suitably selecting the grouping, codebook and (for SU) Nc. If no combination will fit, then the BFee shall send a "null" beamforming report. If this won't fit, then the BFee shall not transmit any response*

*Option 2: same as option 1 but just a "should use grouping etc. to make it fit"*

*Option 5: the BFee shall not choose MCS/grouping/codebook/Nc which would result in a duration greater than that which the BFee would estimate (based on the 8.2.5.2 rules)*

This is against current rules for immediate responses; Responder is not responsible for the correct NAV setting; note that a recipient of a packet is not even supposed to set its NAV, so in practice it may not even know the NAV. In subclause 9.19.2.2 EDCA TXOPs, there is a rule saying: “When a STA receives a frame addressed to it that requires an immediate response, except in the case of an RTS, it shall transmit the response independent of its NAV.” See also resolution of CID 6097. In addition, TXNAV is a timer that is defined at a transmitter, not at a receiver. The NAV at a recipient is not updated by the received frame, and the NAV may have been set to a longer value that the TXOP limit by a prior receiver frame.

*Option 3: the BFer shall use the BFee's BF response history to determine what request is likely to result in a response which fits (a bit wooly!)*

Although this is a good suggestion, and a BFer is encouraged to avoid that a solicited VCB exceeds the TXOP Limit, this is out of the scope of the standard and would be very difficult to define what ‘history’ means.

*Option 4: the BFer shall, unless the duration estimate is such that the TXOP Limit cannot be violated, only do BF frame exchanges (NDPA NDP VCB [BRP VCB]\*) at the start of a TXOP and shall not transmit a frame if the TXOP Limit has been violated (e.g. need to do the [BRP VCB] in a subsequent TXOP)*

This is actually already implied by the existing text (definition of TXOP limit). If the BFee response ends at or after the TXOP Limit, TXOP holder has no rights to keep control of the medium. Note there is an exception for retries.

Concluding, existing baseline indicates that responder is not responsible for correctness of TXOP limits; baseline also enables transmitter to do smart adaptation of the NAV settings based on the expected response; baseline also allows BFer to set a conservative NAV and cancel it. Implementation should choose the preferred approach.