IEEE P802.11
Wireless LANs

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| 802.11 TGac WG Letter Ballot LB187Proposed resolutions to comment 4691 |
| Date: 2012-02-23 |
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Abstract

This submission contains proposed comment resolutions to comments received during WG letter ballot 187.

The comments included are non-editorial comment 4691 on Subclause 9.19.2.5.

There are 1 such comments: 4691.

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| **CID** | **By** | **Page** | **Clause** | **Comment** | **Proposed Change** | **Proposed Resolution** |
| --- | --- | --- | --- | --- | --- | --- |
| 4691 | Liwen Chu | 109.45 | 9.17a | "The MU backoff procedure introduce the folowing issues:1, P117, L39 ""In addition, at the end of the transmissions, depending on the transmission results, a secondary AC shall invoke different backoff rocedures defined for either event b) or event c)."" Matching end of transmission to initial transmission C) is bad.2, It is not clear what to do when there are different acknowledge requirements of A-MPDUs in the first MU PPDU and acknowledge is not received.3, It is not clear how to do backoff during a MU TXOP." | Fix the problem. | REVISE. |

Note: comment indicates clause 9.17a, but that is not correct; comment refers to clause 9.19.2.5

The conditions for the backoff procedure of the primary AC for a ‘MU-MIMO TXOP’ are clearly defined; a minor clarification is proposed below

The conditions for the backoff procedure of secondary AC are not clearly stated and the proposal is to re move some text

Here is a walkthough of the related text and proposed changes:

Defintion of a successful MPDU transmission:

*For the purposes of this subclause, successful transmission and transmission failure of an MPDU are defined as follows:*

*— After transmitting an MPDU (regardless of whether even if it is carried in an A-MPDU or as part of*

*an MU PPDU) that requires an immediate frame as a response, the STA shall wait for a timeout*

*interval of duration of aSIFSTime + aSlotTime + aPHY-RX-START-Delay, starting at the PHYTXEND.*

*confirm. If a PHYRXSTART.indication does not occur during the timeout interval, the*

*STA concludes that the transmission of the MPDU has failed.*

*A The transmission of an MPDU that does not require an immediate frame as a response is defined*

*as a successful transmission, unless it is one of the non-final (re)transmissions of an MPDU that is*

*delivered using the GCR unsolicited retry retransmission policy (9.19.2.6.2)*

Backoff procedure (9.19.2.5):

*The backoff procedure shall be invoked for an EDCAF when any of the following events occurs:*

*a) bla bla*

*b) The final transmission by the TXOP holder initiated during the TXOP for that AC was successful*

*and the TXNAV timer has expired.*

Note: This condition seamlessly applies to MU also; based on above definition of successful transmission

* either all the MPDUs have no-ACK/delayed BA policy: they are successful by definition because no response is expected
* one of the A-MPDUs includes MPDUs with immediate BA policy and is successful if there is an immediate BA

*----*

***Instruction to the editor: modify P117L20***

 *“The final transmission of all the MPDUs by the TXOPholder …”*

*----*

*c) The expected immediate response to the initial frame of a TXOP of that AC is not received,*

Note: This condition seamlessly applies to MU also; in a MU PPDU

* either all the MPDUS have no-ACK/delayed BA policy: they are successful by definition because no response is expected and hence they are not included in this list
* one of the A-MPDUs includes MPDUs with immediate BA policy: in this case bullet C) applies because the initial frameof the TXOP is the A-MPDU that solicits the immediate BA.

*d) The transmission attempt collides internally with another EDCAF of an AC that has higher priority,*

*that is, two or more EDCAFs in the same STA are granted a TXOP at the same time and the*

*EDCAF of the lower priority AC is not sharing the TXOP with the winning AC through TXOP sharing*

*mode.*

*e) bla bla*

*In event d) above, if an internal collision can be resolved by one or more secondary ACs sharing the MU*

*TXOP for downlink transmission, the one or more secondary ACs shall keep their CW[AC]s and backoff timer values unchanged before transmitting in a MU TXOP.*

The text highlighted in yellow changes the rules for an internal collision. However, an internal collision should feed back to all non-winning ACs irrespective of whether these ACs obtain a piggybacked TXOP. This avoids that piggybacked ACs gain unfair statistical advantage over the same ACs at other STAs that were not able to piggyback.

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***Instruction to the editor: remove the text highlighted in yellow*** (at P117, L37).

*----*

*In addition, at the end of the transmissions, depending on the transmission results, a secondary AC shall invoke different backoff procedures defined for either event b) or event c).*

All the frames sent in a same TXOP are to be considered belongin to the primary AC, because that is how the medium access was acquaired, hence the secondary AC backoff shall never be invoked.

Also, it is not clear what “at the end of the transmission” means; presumably it refers tot the end of the TXOP. Also it is not clear how the success/failure could be determined per each secondary AC .

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***Instructions to the Editor: delete the paragraph highlighter in cyan (at P117, L39).***

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*In addition, the backoff procedure may be invoked for an EDCAF when the transmission of one or more MPDUs in a non-initial PPDU or MU PPDU by the TXOP holder fails.*

Note: This condition seamlessly applies to MU also; in a MU PPDU

* either all the MPDUS have no-ACK/delayed BA policy: they are successful by definition because no response is expected and hence they are not included in this list
* one of the A-MPDUs includes MPDUs with immediate BA policy: in this case bullet C) applies because the initial frameof the TXOP is the A-MPDU that solicits the immediate BA.