IEEE P802.11  
Wireless LANs

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| |  |  |  |  |  | | --- | --- | --- | --- | --- | | TLC Signaling | | | | | | Date: 2019-03-01 | | | | | | Author(s): | | | | | | Name | Affiliation | Address | Phone | email | | Matthew Fischer | Broadcom |  |  | [Matthew.fischer@broadcom.com](mailto:Matthew.fischer@broadcom.com) | |  |  |  |  |  | |  |  |  |  |  | |  |  |  |  |  | |  |  |  |  |  | |  |  |  |  |  | |  |  |  |  |  | |

Abstract

Proposed language to create a mechanism in the BlockAck to signal a request by a receiver to Temporarily Limit the Connection.

The proposed changes address CID 2656 of LB236 on TGmd D2.0.

Changes are referenced to TGmd D2.2.

**REVISION NOTES:**

**R0**:

initial

**R1**:

Update to D2.2

**R2**:

Add second bit and encoding for two values one for TLC and one for Interference Mitigation Request

Modify behavioural language to reflect new bit addition and new signalled indication (IMR)

**END OF REVISION NOTES**

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.

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

***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 TGmd Draft.***

**CIDs**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 2656 | Matthew Fischer | 9.3.1.8.1 | 825 | It would be nice to have the ability to inform the transmitter of an AMPDU that missing acknowledgements for some MPDUs are not due to a poor MCS choice, but instead, to local interference that occurred during the AMPDU reception. An indication of such occurence should be signaled in the BA. | Add a mechanism in the BA frame to allow a recipient transmitting the BA to indicate to the originator that missing acknolwedgements within the BA frame are due to local interference or buffer constraints and not a poor MCS choice. | Revise - TGmd editor to make changes as shown in 11-19/0306r2 that are marked with CID 2656 which create a new bit in the BA control field to indicate that there is a temporary receive resource constraint at the transmitter of the BA. |

**Discussion:**

**Proposed Changes to TGmd D2.2:**

**9.3.1.8.1 Overview**

***TGmd editor: within TGmd D2.2, in Figure 9-42 – BA Control field, change bits B5 and B6 from reserved to LAR as shown, adjusting the reserved field size and bit locations as appropriate:***

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | B0 | B1 | B2 | B3 B4 | B5 B6 | B7 B11 | B12 B15 |
|  | BA Ack Policy | Multi TID | Compressed Bitmap | GCR Mode | LAR **(#2656)** | Reserved | TID\_INFO |
| Bits: | 1 | 1 | 1 | 2 | 2 | 5 | 4 |

**Figure 9-42—BA Control field**

***TGmd editor: within TGmd D2.2, in an appropriate location within 9.3.1.8.1 Overview, insert the following text and table:***

The LAR subfield is used to communicate requests for link activity modification. The encoding of the LAR field is as shown in Table 9-28a LAR subfield encoding. **(#2656)**

**Table 9-28a LAR subfield encoding**

|  |  |
| --- | --- |
| LAR subfield value | Intepretation |
| 0 | No link action requested. |
| 1 | Temporary Limited Connection, indicates that the BA recipient is requesting the BA originator to reduce the rate of transmission of octets to the recipient |
| 2 | Interference Mitigation Request, indicates that the BA recipient is requesting the BA originator to perform interference mitigation for TXOPs that address the recipient |
| 3 | Reserved |

***TGmd editor: within TGmd D2.2, insert the following new subclause in an appropriate location (suggested to be immediately following 10.26.10 (DMG block ack with flow control)):***

**10.26.10a Link Actiton Request Signaling (#2656)**

A STA may set the LAR subfield to 1 in a BlockAck to indicate a request to the receiving STA that it should temporarily limit the rate of transmission of octets of MMPDUs and MSDUs of the TID indicated in the BlockAck to the transmitting STA. If the BlockAck containing the LAR subfield equal to 1 is transmitted in response to the receipt of an A-MPDU, the lack of indication of acknowledgement of some of the MPDUs from that A-MPDU should not be assumed to have been due to bit errors but as more likely due to a limited resource availability at the recipient.

A STA may set the LAR subfield to 2 in a BlockAck to indicate a request to the receiving STA that it should perform mitigation for TXOPs that address the recipient. If the BlockAck containing the LAR subfield equal to 2 is transmitted in response to the receipt of an A-MPDU, the lack of indication of acknowledgement of some of the MPDUs from that A-MPDU should not be assumed to have been due to random bit errors but as more likely due to errors induced by interference at the recipient.

A STA that receives a BlockAck with the LAR subfield equal to 1 should temporarily limit the rate of transmission of octets of MMPDUs and MSDUs to the STA that transmitted the BlockAck. The determination of the meaning of temporarily is beyond the scope of the standard. The amount of reduction in the rate of transmission is beyond the scope of the standard.

A STA that receives a BlockAck with the LAR subfield equal to 2 should invoke interference mitigation procedures for TXOPs that address the STA that transmitted the BlockAck. Interference mitigation includes, but is not limited to an RTS CTS exchange with the STA that transmitted the BlockAck.

A STA should set the LAR subfield to 0 in a BlockAck to indicate a request to the receiving STA that it should not limit the rate of transmission of octets of MMPDUs and MSDUs to the transmitting STA and that no interference mitigation procedures are requested for TXOPs that address the STA.

**End of proposed changes.**