IEEE P802.11  
Wireless LANs

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| |  |  |  |  |  | | --- | --- | --- | --- | --- | | Fragment Flushing | | | | | | Date: 2019-05-15 | | | | | | 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 for a transmitter to command a flush of incomplete MSDUs within the RX Buffer of a receiver using DELBA. The motivation for this feature is to allow simplified implementation of transmitter side fragmentation.

Changes are referenced to TGax D4.1.

**REVISION NOTES:**

**R0**:

Initial

**R1**:

Add CIDs 20176 20177

**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 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.***

**CIDs**

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| --- | --- | --- | --- | --- | --- | --- |
| 21587 | Zhou Lan | 310 | 26.3.3.3 | W.r.t. dynamic defragmentation, it is mentioned that a recipient STA shall discard incomplete fragments when receiving a BlockAckReq to move the BA window. When the STA receives a DELBA to tear down the BA agreement, the STA should/shall do the same. Furthermore, an explicit mechanism to request the recipient STA to discard all pending fragments in current BA window should be introduced for various benefits. | 1) add texts to state: the recipient STA shall discard incomplete fragments when receiving a DELBA request. 2) Add explicit 'discard' request. E.g. using the proposal described in doc 11-18-0218-03-00ax-fragment-flushing-blockackreq. | Revise - TGax editor to make changes as shown in 11-18/0915r1 that are marked with CID 21587 which create a mechanism to request a flush of fragments at the transmitter. |
| 21588 | Zhou Lan | 311 | 26.3.3.4 | Same as above | Same as above | Revise - TGax editor to make changes as shown in 11-18/0915r1 that are marked with CID 21587 which create a mechanism to request a flush of fragments at the transmitter. Noting that CID21588 is resolved in a manner identical to CID21587 and therefore, the changes identified for CID21587 are also used for the resolution of CID 21588. |
| 21050 | Matthew Fischer | 305.47 | 26.3.1 | Need a mechanism to allow the transmitter of fragments to re-partition an MSDU for which some fragments have been transmitted. This requires a fragment flush command. | Add a mechanism to allow the transmitter of fragments to re-partition an MSDU by creating the ability to signal a fragment flush command to its recipient STA. | Revise - TGax editor to make changes as shown in 11-18/0915r1 that are marked with CID 21050 which create a mechanism to request a flush of fragments at the transmitter. |
| 20176 | Chunyu Hu | 310.00 | 26.3.3.3 | W.r.t. dynamic defragmentation, it is mentioned that a recipient STA shall discard incomplete fragments when receiving a BlockAckReq to move the BA window. When the STA receives a DELBA to tear down the BA agreement, the STA should/shall do the same. Furthermore, an explicit mechanism to request the recipient STA to discard all pending fragments in current BA window should be introduced for various benefits. | 1) add texts to state: the recipient STA shall discard incomplete fragments when receiving a DELBA request. 2) Add explicit 'discard' request. E.g. using the proposal described in doc 11-18-0218-03-00ax-fragment-flushing-blockackreq. | Revise - TGax editor to make changes as shown in 11-18/0915r1 that are marked with CID 20176 which create a mechanism to request a flush of fragments at the transmitter. |
| 20177 | Chunyu Hu | 311.00 | 26.3.3.4 | Same as above | Same as above | Revise - TGax editor to make changes as shown in 11-18/0915r1 that are marked with CID 20177 which create a mechanism to request a flush of fragments at the transmitter. |

**Discussion:**

This document proposes a mechanism for transmitter-commanded RX BUFFER Flush of incomplete MSDUs by making this activity a receiver action that occurs upon receipt of a DELBA or successful transmission of a DELBA.

**Proposed Changes to TGax D4.1:**

**9.4.2.26 Extended Capabilities element**

***TGax editor: within TGax D4.1, add another row to Table 9-153 – Extended Capabilities field as shown:***

**Table 9-153—Extended Capabilities field**

|  |  |  |
| --- | --- | --- |
| **Bit** | **Information** | **Notes** |
| 77 | TWT Requester Support | A STA sets the TWT Requester Support field to 1 when dot11TWTOptionActivated is true, dot11HEOptionImplemented is true and TWT requester functionality is supported. Otherwise, the STA sets the TWT Requester Support field to 0. See 10.48 (Target wake time (TWT)). |
| 78 | TWT Responder Support | A STA sets the TWT Responder Support field to 1 when dot11TWTOptionActivated is true, dot11HEOptionImplemented is true and TWT responder functionality is supported. Otherwise, the STA sets the TWT Responder Support field to 0. See 10.48 (Target wake time (TWT)). |
| 79 | OBSS Narrow Bandwidth RU In OFDMA Tolerance Support | An AP STA sets the OBSS Narrow Bandwidth RU In OFDMA Toler-ance Support field to 1 if dot11OBSSNarrowBWRUinOFDMAToler-ated is true, and sets it to 0 otherwise.  A non-AP STA sets the OBSS Narrow Bandwidth RU In OFDMA Tolerance Support field to 0. |
| 83 | Enhanced Multi- BSSID Adver-tisement Support | This field is reserved for a non-AP STA or when the AP has dot11Mul-tiBSSIDActivated set to false.  Set to 1 to indicate that the AP supports enhancements related to dis-covery and advertisement of nontransmitted BSSIDs.  Set to 0, other-wise. Also see 11.1.3.8 (Multiple BSSID procedure). |
| <ANA> | RX DELBA Flush Support | A STA sets the RX DELBA Flush Support field to 1 when dot11RXDELBAFlushOptionActivated is true and sets it to 0 otherwise. **(#21587)(#21588)(#20176)(#20177)(#21050)** |

***TGax editor: insert the following new subclause to follow existing subclause 26.3.2.4 Level 3 dynamic fragmentation:***

**26.3.2.4a DELBA originator fragment flushing**

The terms originator and recipient used in this subclause are defined in 10.26.1 (Introduction).

If the RX DELBA Flush Support subfield was set to 1 in the most recently successfully transmitted Extended Capabilities element sent from the originator to the recipient and the RX DELBA Flush Support subfield was set to 1 in the most recently successfully transmitted Extended Capabilities element sent from the recipient to the originator, then upon successful transmission of a DELBA to the recipient, an originator shall assume that all incomplete MSDUs and A-MSDUs are flushed from the recipient’s receive buffer. **(#21587)(# 21588)(#20176)(#20177)(#21050)**

***TGax editor: insert the following new subclause to follow existing subclause 26.3.3.4 Level 3 dynamic defragmentation:***

**26.3.3.4a DELBA recipient fragment flushing**

The terms originator and recipient used in this subclause are defined in 10.26.1 (Introduction).

If the RX DELBA Flush Support subfield was set to 1 in the most recently successfully transmitted Extended Capabilities element sent from the originator to the recipient and the RX DELBA Flush Support subfield was set to 1 in the most recently successfully transmitted Extended Capabilities element sent from the recipient to the originator, then upon reception of a DELBA from the originator, a recipient shall flush all incomplete MSDUs and A-MSDUs from its receive buffer. **(#21587)(# 21588)(#20176)(#20177)(#21050)**

**TGax Editor: *Add a new MIB variable in C.3 MIB detail within the dot11StationConfigEntry group as shown:***

**C.3 MIB Detail**

dot11RXDELBAFlushOptionActivated OBJECT-TYPE **(#21587)(# 21588)(#20176)(#20177)(#21050)**

SYNTAX TruthValue

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"This is a capability variable. Its value is determined by device capabilities.

This attribute, when true, indicates that the STA implementation acting as a recipient for a BA agreement flushes incomplete MSDUs and A-MSDUs from its receive buffer if it receives a DELBA from its originator and has received an indication that the originator has a value of true for its dot11RXDELBAFlushOptionActivated MIB. The capability is disabled, otherwise."

DEFVAL { false }

::= { dot11StationConfigEntry <XX>}

**End of proposed changes.**