IEEE P802.11  
Wireless LANs

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| CR for CID 21501, 21502 | | | | |
| Date: 2019-07-15 | | | | |
| Author(s): | | | | |
| Name | Affiliation | Address | Phone | email |
| Xiaogang Chen | Intel | 2111 NE 25th Ave, Hillsboro, OR, 97124 |  | Xiaogang.c.chen@Intel.com |
| Laurent Cariou | Intel |  |  |  |
| Ehud Reshef | Intel |  |  |  |
| Ziv Avital | Intel |  |  |  |
| Ilan Sutskover | Intel |  |  |  |

Abstract

This submission proposes text changes of TGax Draft 4.1 for CID 21501, 21502

Revisions:

* Rev 0: Initial version of the document.
* Rev 1: update the CR of 21497, 21501.
* Rev 2: editorial update for CID 21501.
* Rev 3: updated resolution for CID 21502, 21501.
* Rev 4: page number updates
* Rev 5: add capability to support trigger dependent user info field.
* Rev 6: editorial.

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.***

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **CID** | **Commenter** | **Clause** | **Page** | **Line** | **Comment** | **Proposed change** | **Resolution** |
| 21501 | Xiaogang Chen | 9.4.2.242.3 | 172 | 20 | When a client joining DL MUMIMO, it could significantly degrade the performance of this client due to some reasons, e.g. AP scheduling issue, feedback issue, etc. From our observation, the degradation has more impact on the 160MHz capable STAs. Given the cost to support 160MHz and the limited number of 160MHz capable clients, it doesn't worth the performance compromise to support DLMUMIMO for 160MHz client. We propose to add capability bit to disallow the 160MHz capable client to join DLMUMIMO. | add a capability bit of "Rx 160MHz DLMUMIMO support" | Rejected |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **CID** | **Commenter** | **Clause** | **Page** | **Line** | **Comment** | **Proposed change** | **Resolution** |
| 21502 | Xiaogang Chen | 27.3.17 | 612 | 01 | The TB NDP feedback doesn't work well for the case of very high dynamic range. AP should have the flexibility to mute the STAs that cannot meet the target RSSI after power control. | The commentor will have a contribution to solve this issue. | Revised  -TGax editor to make the changes shown in 11-19/0422r4 under all headings that include CID 21502. |

**Discussions:** The dynamic range of the power from non-AP STAs could be very large, e.g. 50dB. The current TB NDP feedback has the following issues give extreamly large power dynamic range.

1. AGC dynamic range issue at the AP;
2. Detection performance will be impacted if STAs are spatial multiplexed;
3. EVM is not defined for NDP packet. The EVM leakage could jeopardize neighbor tones.

To solve these issues, a quick pach is to allow the AP to block a non-AP STA from responding to the NFRP trigger frame. The blocked STA may have much higher or much lower RSSI measured by the AP.

**Proposed changes for CID 21502:**

*To the TGax Editor: add the follow paragraph and figure after P.L. 119.65 (after subclause 9.3.1.22.9)*

The presence of the Trigger Dependent User Info subfield for the NFRP trigger frame is determined by the value of the Feedback Type subfield of the NFRP Trigger frame as defined in table 9-31i. If the Feedback Type subfield is set to 1, the Trigger Dependent User Info subfield is present and is defined in Figure 9-64Ix (Trigger Dependent User Info subfield for the NFRP variant). A non-AP STA shall set the OM Control UL MU Data Disable RX Support to 1 if the non-AP STA supports the receiption of NFRP trigger frame with the presence of the Trigger Dependent User Info subfield. Otherwise set to 0.



Figure 9-64Ix (Trigger Dependent User Info subfield for the NFRP variant)

|  |  |
| --- | --- |
| * Feedback Type subfield encoding | |
| Value | Description |
| 0 | Resource request |
| 1 | Resource request with the presence of Trigger Dependent User Info subfield |
| 2-15 | Reserved |

The size of the NFRP Feedback Blocking Bit Map is determined by the UL BW subfield indicated in the Common Info field of the NFRP Trigger frame and is defined in table 9-31xx.

Table 9-31xx Relation between the UL BW subfield value and the size of the NFRP Feedback Blocking Bit Map

|  |  |
| --- | --- |
| UL BW subfield value | Number of Octets of the NFRP Feedback Blocking Bit Map |
| 0 | 5 |
| 1 | 9 |
| 2 | 18 |
| 3 | 36 |
| Note - If the value of UL BW subfield equal to 0, the last 4 bits of the NFRP Feedback Blocking Bit Map are reserved. | |

The NFRP Feedback Blocking Bit Map subfield indicates the non-AP STAs that are blocked from responding the NFRP trigger frame. Bit B*AIDn – Starting AID* is set to 1 to indicate the non-AP STA with AID equal to *AIDn* shall not response to the NFRP trigger frame. Bit B*AIDn – Starting AID* is set to 0 to indicate the non-AP STA with AID equal to *AIDn* may response to the NFRP trigger frame.

*To the TGax Editor: add the follow bullet in P.L. 351.65*

A non-AP STA with AID equal to *AIDn* is scheduled to respond to the NFRP Trigger frame if all the following conditions are met:

— The non-AP STA is associated with the BSSID indicated in the TA field of the NFRP Trigger frame  
or the non-AP STA is associated with a nontransmitted BSSID of a multiple BSSID set and the TA  
field of the NFRP Trigger frame is set to the transmitted BSSID of that multiple BSSID set.

— ~~The non-AP STA’s AID~~ *AIDn* is greater than or equal to the starting AID and less than starting AID +  
*NSTA*, using the Starting AID subfield in the eliciting Trigger frame, and with *NSTA* the total number  
of non-AP STAs that are scheduled to respond to the NFRP Trigger frame. *NSTA* is calculated by the  
following equation, with UL BW subfield and Multiplexing Flag subfield from the eliciting Trigger  
frame:   
*NSTA* = 18 × 2*BW* × (*Multiplexing Flag + 1*)

* Bit B*AIDn – Starting AID* in the NFRP Feedback Blocking Bit Map subfield, if present, is set to 0.

*To the TGax Editor: modify the following entry in P.L. 176.40*

|  |  |  |
| --- | --- | --- |
| OM Control UL MU Data Disable RX Support | Indicates whether an AP supports interpretation of the UL MU Data Disable subfield of the OM Con trol subfield as described in 26.5.2 (UL MU operation). | For an AP: Set to 1 if supported. Set to 0 otherwise.  ~~Reserved for a non-AP STA~~  For a non-AP STA:  Set to 1 if the STA supports the receiption of NFRP trigger frame with the presence of the Trigger Dependent User Info subfield.  Set to 0 if the STA does not support the receiption of NFRP trigger frame with the presence of the Trigger Dependent User Info subfield. |

**-----------------------Proposed changes for CID 21502 end--------------**