IEEE P802.11
Wireless LANs

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| Comment resolution for CIDs: 2273, 2287, 2576, 2577, 2578, 2738, 2630 |
| Date: 2011-08-25 |
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Abstract

The document provides the comment resolution for the CIDs: 2273, 2287, 2576, 2577, 2578, 2630 and 2738.

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| **CID** | **Section** | **P** | **L** | **Type** | **Comment** | **Suggestion** | **Status** |
| 2109 | 10.2.1.4a | 94 | 39, 43 | T | In current Draft, a VHT AP shall not transmit frames to a non-AP VHT STA that is allowed to enter Doze state for the remainder of the TXOP. But when AP sends a frame with More Data field set to 0 to a STA while not correctly receive an acknoledgement, the AP can't make sure the destination STA enter Doze state or not. If the standard allow AP to retransmit the last PPDU to the destination STA will greatly improve efficiency. Otherwise, AP has to buffer the last PPDU, and gain another TXOP to transmit the only remain PPDU. | Add a mechanism to enable the AP to ensure the the destination STA has received the last PPDU prior to going to the Doze mode. Refer to contribution "11-11-xxxx-00-00ac-resolution-to-comment-xxx" for details.  | TBD. Commenter to submit contribution |
| 2577 | 10.2.1.4a | 94 | 44 | T | What other STAs than non-AP VHT STAs are ever allowed to enter Doze state for the remainder of a TXOP? | Simplify the sentence a bit by deleting "non-AP VHT". | AGREE.See the Editing Instructions |
| 2578 | 10.2.1.4a | 94 | 47 | T | "shall not transmit frames to … that operate in power save mode": so this includes all of the PS STAs that currently are in Active state? Why not be able to transmit to them? | Replace "operate in TXOP power save mode" with "are in Doze state" | AGREE.See the Editing Instructions |

Discussion:

AP knows the state of the STAs because it has to select the destinations that are awake during the TXOP for frame transmission. It chooses the Group ID and the destination during the MU and SU transmissions respectively based on the state of STAs. At the end of the TXOP during which the power save was allowed, AP is aware of the STAs that are in Doze state. Hence, when such TXOP is truncated, AP will not transmit only to those STAs that are in Doze state till the TXOP duration has expired.

**Editing Instructions:**

*Page 94, Line 47-49:*

If a VHT AP truncates the TXOP in which it allowed the STAs to enter Doze state, then the

VHT AP shall not transmit frames to the STAs that entered the Doze state until the NAV duration of the TXOP has expired.

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| **CID** | **Section** | **P** | **L** | **Type** | **Comment** | **Suggestion** | **Status** |
| 2630 | 10.2.1.4a | 94 | 42 | T | The NOTE hinting to use NAV set sequence is not needed. If the NAV is not set (NAV = 0), the STA may sleep, but sleep duration is 0. The following sentence is not part of the note, it is normative text and it should have own paragraph. | Please delete the line saying: "Note that ..." | AGREE IN PRINCIPLE. |
| 2738 | 10.2.1.4a | 94 | 42 | T | The NOTE hinting to use NAV set sequence is not needed. If the NAV is not set (NAV = 0), the STA may sleep, but sleep duration is 0. The following sentence is not part of the note, it is normative text and it should have own paragraph. | Please delete the line saying: "Note that ..." | AGREE IN PRINCIPLE. |
| 2287 | 10.2.1.4a | 94 | 42 | T | Note that a VHT AP shall include a NAV-set sequence (e.g. RTS/CTS) at the beginning of such a TXOP - but the transmitter is not aware of whether there will be any recipients that will sleep based on a partial AID mismatch. | As written, the rule implies that all TXOP containing a single VHT PPDU must begin with RTS/CTS. If this is true, then make the statement simply and explicitly. If not, then the language here needs to be fixed. | AGREE IN PRINCIPLE. |
| 2576 | 10.2.1.4a | 94 | 42 | T | This line requires a VHT AP to include RTS/CTS at the beginning of every TXOP! This seems to be a huge waste of time. | Delete this requirement. | AGREE IN PRINCIPLE. The TXOP in which power save is allowed, it begins with NAV set sequence. |

Discussion:

In the case of MU transmissions and the beamformed SU transmissions, if there is no NAV-set sequence that precedes the data transmission, the VHT TXOP Power save stations that are not the recipients of the frame will not get to know the duration of the TXOP. The NAV set sequence is not necessarily an RTS-CTS mechanism only. It can be a CTS-to-Self, or any frame with duration field in the MAC header carrying the duration of TXOP that is received by all the stations. The NAV set sequence is necessary only when the AP is allowing STAs to enter Doze state during TXOP.

**Editing Instructions:**

*Page 94, Line 42-44:*

The VHT AP shall include a NAV-set sequence (e.g. RTS/CTS) at the beginning of such a TXOP with the Duration/ID value set to the remainder of the TXOP duration. A VHT AP shall not transmit frames to a non-AP VHT STA that is allowed to enter Doze state for the remainder of the TXOP.

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| **CID** | **Section** | **P** | **L** | **Type** | **Comment** | **Suggestion** | **Status** |
| 2273 | 10.2.1.4a | 94 | 34 | T | "— The STA finds that the PARTIAL\_AID in the RXVECTOR does not match its partial AID or it finds that the frame is not directed to it."The statement does not make sense. If the STA determines that the "PARTIAL\_AID in the RXVECTOR does not match its partial AID", this means that the frame is not directed to it. Hence the statement is tantamount to saying "— The STA finds that the frame is not directed to it using the partial AID, or it finds that the frame is not directed to it." | As a minimum, clarify by what means [other than partial AID] the STA finds that the frame is not directed to it. For example, by inspecting the MAC header address fields, etc. | AGREE IN PRINCIPLE. |

Discussion:

In the case of the beam-formed SU transmissions, there may be stations that have same partial AID. When the station is not an intended recipient, it may not be able to decode the frame beyond VHT-SIG-A even if the partial AID matches. In addition, the TXOP power save is supposed to use the parameters in the VHT-SIG-A to find out if it is an intended recipient. Hence, it does not check the destination in the MAC header.

**Editing Instructions:**

*Page 94, Line 34-35:*

If the VHT non-AP STAs are allowed to enter Doze state during a TXOP, then the VHT non-AP STA that is in VHT TXOP power save mode may enter the Doze state till the end of that TXOP when one of the following conditions exists:

* The STA finds that it is not a member of group indicated by RXVECTOR parameter GROUP\_ID.
* The STA finds that the PARTIAL\_AID in the RXVECTOR does not match its partial AID.
* The STA finds that the PARTIAL\_AID in theRXVECTOR matches with its PARTIAL AID but the RA in the MAC header of the corresponding frame that is received correctly does not match with the MAC address of the STA.
* The STA receives a frame with an RXVECTOR parameter NUM\_STS equal to 0, if it is a member of group indicated by RXVECTOR GROUP\_ID.
* The STA sends an acknowledgement in response to frame received with More Data field set to 0.

Pre-Motion 1:

Do you accept the resolutions provided to the CIDs and the changes to the spec text as presented in editing instructions sections of this document?

Yes:

No:

Abstain:

**References:**

1. IEEE Draft P802.11ac\_D1.0
2. IEEE 11-11-0907-04-00ac-lb178-comments-tgac-d1-0