IEEE P802.11  
Wireless LANs

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| 802.11 TGac WG Letter Ballot LB188  LB188 MAC comment resolutions | | | | |
| Date: 2012-09-16 | | | | |
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Abstract

The document provides the comment resolution for the CIDs: 6121, 6197, 6854.

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| 6121 | 150.35 | 10.2.1.4a | TXOP power saving with multicast address frame is missing. | Add the following bullet at L10P151:  ----In the received VHT group frame, the STA find that it is not the receiver of the group frame by checking the group MAC address in RA field. |

**Discussion:** The TXOP power saving is defined for a TXOP in which the NAV at the STAs is set using a NAV set sequence. For the group addressed transmissions the NAV is not necessarily set so the TXOP power saving cannot be done in this case.

**Proposed Resolution:** Rejected. See the discussion in 11-12-1135r1.

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| 6854 | 150.38 | 10.2.1.4a | It is not clear from the text whether TXOP Power Save can be used in Mesh STAs or not. It is not explicitly stated in the text | Specify explicitly whether TXOP Power Save is allowed in Mesh STA or not |

**Discussion**: For the TXOP Power save, it is sufficient that the listed conditions in section “**10.2.1.4a Power management during VHT transmissions”** for an STA to enter the Doze state are met and it is not required to mention explicitly about the type of STA as mesh.

**Proposed Resolution**: Rejected. See the discussion in 11-12-1135r1.

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| 6197 | 151.48 | 10.2.1.4a | ProbeDelay in D3.0 became undefined!!! In high density lecture theaters, badly behaved clients optimized narrowly for power save can degrade everybody's experience. | Add recommendations for 11ac STAs for probedelay: e.g. by default, a VHT STA should use max TXOP duration for ProbeDelay, with relaxations only if the STA adds extra technologies: e.g. monitors all TXOP durations in last 5 min and uses the max observed TXOP duration, or 99th percentile max TXOP duration; and/or STAs with HW that can detect any PPDU at any stage S199z even if the preamble is missed) with high sensitivity might be able to use shorter Probe Delays. As well, describe the problems with short ProbeDelays (e.g. failure of virtual carrier sense so excess collisions) especially in high density environments like 500 students with 1500 WiFi devices in a lecture theater (if you hadn't noticed, WiFi is quite popular and pervasive) |

**Discussion**: Since the TXOP power save uses the ProbeDelay in the same way as it is used by the Power Management mode, i.e. a duration to delay transmissions when enters Awake state . The rule for Power management mode in section “**10.2.1.2 STA Power Management modes**” in REVmb states that:

“A STA that is changing from Doze to Awake in order to transmit shall perform CCA until a frame sequence is detected by which it can correctly set its NAV, or until a period of time equal to the ProbeDelay has transpired.”

Station that has entered the Doze state in a TXOP Power Save mode will maintain the NAV timer and enter Awake state only on the expiry of the NAV for transmission.

**Proposed Resolution**: Revised. See the discussion in 11-12-1135r1.

**Editorial Instructions:**

Replace

“If a VHT STA that is in TXOP power save mode and has entered Doze state during a TXOP is changing its state to Awake shall not access the medium until

— it receives a PHY-RXSTART.indication, or

— a period equal to the ProbeDelay has transpired.”

**With**

A VHT STA that is in TXOP power save mode and has entered Doze state shall continue to operate its NAV timer during Doze state and shall transition into Awake state on expiry of the NAV timer.

NOTE- The STA can contend for access to the medium immediately on the expiry of the NAV timer**.**

**References:**

1. IEEE Draft P802.11ac\_D3.0
2. IEEE 11-12-0752-03-00ac-lb188-comments-tgac-d3-0.xls