IEEE P802.11
Wireless LANs

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| LB202 Assigned comments |
| Date: 2014-09-05 |
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|  |  |  |  |  |

Abstract

This submission contains proposed comment resolutions for CIDs

R1 – 2014-09-05 telecon agreed: 3741, (3740, 3742, 3743), 3665, 3647, 3612, (3613, 3614), 3568

3554, 3555, (3517, 3518), 3516

R1, page 16: 2014-09-05 telecon discussed: 3496

Resolutions to be added:

CIDs 3057, 3058, 3141, 3281, 3282, 3292, 3334, 3346, 3353, 3394, 3493, 3512

# CID 3741 (MAC)

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| --- | --- | --- | --- | --- | --- | --- |
| 3741 | 1623.40 | 10.9.3 |  |  | The first sentence of the paragraph that begins at 1623.40 is about the AP and mesh STA transmissions. Then the second sentence begins:"Only the most recently received Beacon frame or Probe Responseframe defines all future quiet intervals;"The subject of this paragraph is not receptions but transmissions. | Replace "most recently received" with "most recently transmitted". |

**Discussion:**

The cited text is below:



The commenter’s proposed change is shown below:

The AP or mesh STA may stop scheduling quiet intervals or change the value of the Quiet Period field, the

Quiet Duration field, and the Quiet Offset field in Quiet elements as required or Quiet Channel elements

with the AP Quiet Mode field equal to 1. Only the most recently transmitted Beacon frame or Probe Response frame defines all future quiet intervals; therefore, all schedules for quiet intervals based on older Beacon

frames or Probe Response frames shall be discarded.

Observation: It’s true that the text changes from “transmitted” to “received”. The cited sentence is describing the behavior from the receiver’s perspective, and stating a requirement that prior schedules be discarded. No change is required.

**Proposed resolution: Rejected**

Itis true that the text changes from “transmitted” to “received”. The cited sentence is describing the behavior from the receiver’s perspective, and stating a requirement that prior schedules be discarded. No change is required.

**CID 3740, 3742, 3743 (MAC)**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 3740 | 1623.30 | 10.9.3 |  |  | Adding various variants of "Quiet Channel elements with the AP Quiet Mode field equal to 1" to the sentences in 10.9.3 has fouled up the meaning of several of them. For instance, look at lines : "by including multiple Quiet elements or Quiet Channel elements with the AP Quiet Mode field equal to 1 in any transmitted Beacon Frames or Probe Response frames." Does "multiple" apply to both types of elements? Does "with the Quiet Mode field equal to 1" apply to both types of elements? Does "in any transmitted Beacon Frames or Probe Response frames apply only to Quiet Channel elements? The answers to none of these questions are clear. | Insert a new first paragraph into 10.9.3:"When the AP Quiet Mode field of a Quiet Channel element has the value 1, the Quiet Channel element is called a "mode set Quiet Channel element.".Then on line 29 replace:"by transmitting one or more Quiet elements and/or one or more Quiet Channel elements with the AP Quiet Mode field equal to 1 in Beacon frames and Probe Response frames."with:"by transmitting in Beacon and Probe Respose frames either one or more mode set Quiet Channel elements or one or more Quiet elements."On line 36 replace:"with the AP Quiet Mode equal to 0."with:"with the value of its AP Quiet Mode field equal to 0.".On line 40 replace:"may stop scheduling quiet intervals or change the value of the Quiet Period field, the Quiet Duration field, and the Quiet Offset field in Quiet elements as required or Quiet Channel elements with the AP Quiet Mode field equal to 1."with:"may stop scheduling quiet periods, or may transmit Quiet elements with changes in their Quiet Period, Quiet Duration and Quiet Offset fields, or may transmit mode set Quiet Channel elements." |

**CID 3742 addresses the rest of the text in 10.9.3, at 1623.54**

**Comment:**

Another confusion related to "Quiet Channel elements with the AP Quiet Mode field set to 1" (see the comment about 1623.30).Confusing: "transmits one or more Quiet elements or Quiet Channel elements with the AP Quiet Mode field equal to 1 in the first Beacon frame establishing the IBSS." Need to invert the order and simplify the text.Also the text on line 56 is confusing: "by including appropriate Quiet elements or Quiet Channel elements with the AP Quiet Mode field equal to 1 in any transmitted Beacon frames or Probe Response frames."

 **And proposed resolution:**

Insert the same first paragraph as specified in the proposed resolution to the 1623.30 comment. Then replace:"transmits one or more Quiet elements or Quiet Channel elements with the AP Quiet Mode field equal to 1 in the first Beacon frame establishing the IBSS."with:"transmits in the first Beacon frame establishing the IBSS on or more Quiet elements or mode set Quiet Channel elements."Also replace text beginning on line 56:"by including appropriate Quiet elements or Quiet Channel elements with the AP Quiet Mode field equal to 1 in any transmitted Beacon frames or Probe Response frames."with:"by including in all transmitted Beacon or Probe Response frames the appropriate Quiet elements or mode set Quiet Channel elements."

**CID 3743 addresses the rest of the text in 10.9.3, at 1623.61**

**Comment:**

Another confusion related to "Quiet Channel elements with the AP Quiet Mode field set to 1" (see the comment about 1623.30).Confusing: "by including multiple Quiet elements or Quiet Channel elements with the AP Quiet Mode field equal to 1 in Beacon frames or Probe Response frames."

 **And proposed resolution:**

Insert the same first paragraph as specified in the proposed resolution to the 1623.30 comment. Then replace:"by including multiple Quiet elements or Quiet Channel elements with the AP Quiet Mode field equal to 1 in Beacon frames or Probe Response frames."with:"by including in Beacon or Probe Response frames either multiple Quiet elements or mode set Quiet Channel elements."

**Discussion:**

The cited text is below:



The commenter’s proposed changes are shown below:

**10.9.3 Quieting channels for testing**

When the AP Quiet Mode field of a Quiet Channel element has the value 1, the Quiet Channel element is called a "mode set Quiet Channel element”.

An AP in a BSS or a mesh STA in an MBSS may schedule quiet intervals by transmitting in Beacon and Probe Respose frames either one or more mode set Quiet Channel elements or one or more Quiet elements in Beacon

frames and Probe Response frames.

A non-VHT AP shall not transmit a Quiet Channel element. An AP shall not transmit a Quiet Channel

element with the value of its AP Quiet Mode field equal to 0 in frames that do not include at least one Quiet element. An AP

shall not transmit more than one Quiet Channel element with the AP Quiet Mode equal to 0. An AP shall not

transmit a Quiet Channel element if the BSS operating channel width is neither 160 MHz nor 80+80 MHz.

The AP or mesh STA may stop scheduling quiet periods, or may transmit Quiet elements with changes in their Quiet Period, Quiet Duration and Quiet Offset fields, or may transmit mode set Quiet Channel elements.. Only the most recently received Beacon frame or Probe Response

frame defines all future quiet intervals; therefore, all schedules for quiet intervals based on older Beacon

frames or Probe Response frames shall be discarded.

An AP or PCP in a DMG BSS may measure one or more channels itself, or the AP or PCP may request

associated non-AP and non-PCP STAs in the same BSS to measure one or more channels, either in a

dedicated measurement interval or during normal operation. The AP or PCP in a DMG BSS may schedule a

service period allocated to itself to quiet the associated STAs and use the self-allocated SP for measurement.

A STA in an IBSS may schedule quiet intervals only if it is the DFS owner. In order to set a quiet interval

schedule, the STA transmits transmits in the first Beacon frame establishing the IBSS on or more Quiet elements or mode set Quiet Channel elements.. All STAs in an IBSS shall continue

these quiet interval schedules by including in all transmitted Beacon or Probe Response frames the appropriate Quiet elements or mode set Quiet Channel elements..

Multiple independent quiet intervals may be scheduled, so that not all quiet intervals have the same timing

relationship to TBTT, by including in Beacon or Probe Response frames either multiple Quiet elements or mode set Quiet Channel elements.".

Discussion: There is a text duplication issues with the the second paragraph change as proposed. Also, “quiet interval” is used, not “quiet period”.

**Proposed resolution: Revised, incorporate the text changes as shown below:**

**10.9.3 Quieting channels for testing**

When the AP Quiet Mode field of a Quiet Channel element has the value 1, the Quiet Channel element is called a "mode set Quiet Channel element”.

An AP in a BSS or a mesh STA in an MBSS may schedule quiet intervals by transmitting one or more mode set Quiet Channel elements or one or more Quiet elements in Beacon

frames and Probe Response frames.

A non-VHT AP shall not transmit a Quiet Channel element. An AP shall not transmit a Quiet Channel

element with the AP Quiet Mode field value equal to 0 in frames that do not include at least one Quiet element. An AP

shall not transmit more than one Quiet Channel element with the AP Quiet Mode equal to 0. An AP shall not

transmit a Quiet Channel element if the BSS operating channel width is neither 160 MHz nor 80+80 MHz.

An AP or mesh STA may stop scheduling quiet intervals, or may transmit Quiet elements with changes in the Quiet Period, Quiet Duration and Quiet Offset fields, or may transmit mode set Quiet Channel elements.. Only the most recently received Beacon frame or Probe Response

frame defines all future quiet intervals; therefore, all schedules for quiet intervals based on older Beacon

frames or Probe Response frames shall be discarded.

An AP or PCP in a DMG BSS may measure one or more channels itself, or the AP or PCP may request

associated non-AP and non-PCP STAs in the same BSS to measure one or more channels, either in a

dedicated measurement interval or during normal operation. The AP or PCP in a DMG BSS may schedule a

service period allocated to itself to quiet the associated STAs and use the self-allocated SP for measurement.

A STA in an IBSS may schedule quiet intervals only if it is the DFS owner. In order to set a quiet interval

schedule, the STA transmits one or more Quiet elements or mode set Quiet Channel elements in the first Beacon frame establishing the IBSS. All STAs in an IBSS shall continue

these quiet interval schedules by including appropriate Quiet elements or mode set Quiet Channel elements in any transmitted Beacon frames or Probe Response frames.

Multiple independent quiet intervals may be scheduled, so that not all quiet intervals have the same timing

relationship to TBTT, by including multiple Quiet elements or mode set Quiet Channel elements in Beacon frames or Probe Response frames.

**CID 3665 (MAC)**

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| --- | --- | --- | --- | --- | --- | --- |
| 3665 | 1290.57 | 9.7.11 |  |  | "may be included only in non-HT and non-HT duplicate PPDUs": "may only" is a usage that has caused problems in the past; replacing this with "shall only" also eliminates the need for the final sublause to this sentence. | Replace "may be included only in non-HT and non-HT duplicate PPDUs and shall not be included otherwise." with "shall be included only in non-HT and non-HT duplicate PPDUs.". |

**Discussion:**

**The cited text is below:**

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The editor comments:

The proposed change is counter to recent REVmc changes that consider "shall <x> only if <y>" to be ambiguous.

**Proposed resolution: Revised**

A bandwidth signaling TA may be included in non-HT and non-HT duplicate PPDUs and shall not be

included in other PPDUs. If the TXVECTOR parameter CH\_BANDWIDTH\_IN\_NON\_HT is present and a

control MPDU other than a CTS is being transmitted, then the TA field shall be set to a bandwidth signaling

TA; otherwise, the TA field shall be set to an individual address.

**CID 3647 (MAC)**

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| --- | --- | --- | --- | --- | --- | --- |
| 3647 | 1039.28 | 8.4.2.164 |  |  | Line 31: "may" in a definition. But, more generally, on line 28: What does it mean to say: "is to be quieted during a quiet interval indicated by either a Quiet element (see 8.4.2.22 (Quiet element)) or the Quiet Channel element if its AP Quiet Mode field is equal to 1."? Exactly \_how\_ does either a Quiet element or a Quiet Channel element indicate which quiet interval? What does the Quiet element have to do with the meaning conveyed by the Quiet Channel element? Something is confused about this writing, and it is not clear what. | Replace this paragraph (lines 27-33) with text that either spells out exactly how the quiet interval is indicated, or, if that is not the goal, then what is really intended. Delete the reference to the Quiet element (or explain separately how the Quiet Channel element depends on the Quiet element), and then write:"The Quiet Channel element is used to indicate that the secondary 80 MHz channel of a VHT BSS is to be quieted during a quiet interval. When the Quiet Channel element is transmitted and its AP Quiet Mode field has the value 1, then the secondary 80 MHz channel is to be quieted. The value of this field, described below, also indicates how the quieted channel can be used." |

**Discussion:**

**The cited text is below:**

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**The commenter’s issue is with the first paragraph. The commenter describes requested changes and asks for this specific change:**

**8.4.2.164 Quiet Channel element**

 [new text]"The Quiet Channel element is used to indicate that the secondary 80 MHz channel of a VHT BSS is to be quieted during a quiet interval. When the Quiet Channel element is transmitted and its AP Quiet Mode field has the value 1, then the secondary 80 MHz channel is to be quieted. The value of this field, described below, also indicates how the quieted channel can be used."

**Proposed resolution: Revised. At 1039.28, change the text as shown below:**

The Quiet Channel element is used to indicate that the secondary 80 MHz channel of a VHT BSS is to be

quieted during a quiet interval, and to indicate if the primary 80 MHz channel of a VHT BSS can be used during the quiet interval. A quiet interval is established using either a Quiet element (see 8.4.2.22 (Quiet element)) or a

Quiet Channel element with the AP Quiet Mode field set to 1.

**CID 3612 (GEN)**

**Page 76.50, Clause 4.3.12**

**Comment:**” For a number of years 802.11 members have worked to remove all statements of mandatory requirements from the informative clause 4. Yes, there remain a few instances of the word "mandatory", but these are limited to cases that describe situations when something was made mandatory by the normative text. For instance: "An HT STA operating in the 5 GHz band supports transmission and reception of frames that are compliant with mandatory PHY specifications". This is not a statement about a feature being mandatory, but about support of features that were made mandatory in the normative text.

Unfortunately, now there is proposed long series of direct statements about specific features being mandatory or optional. These normative statements need to be removed from this clause.

 If anyone wants to keep this material in the draft, then it should be moved to a normative clause -- and, of course, for clarity the statements that contain "mandatory" need to be changed to "shall" statements and statements that contain "optional" changed to "may" statements.”

**Proposed Resolution:**

Delete the paragraph that begins: “The main PHY features in a VHT STA that are not present in an HT STA are the following:" -- that is, delete page 76 lines 50 through 60.Delete the paragraph that begins:"The main MAC features in a VHT STA that are not present in an HT STA are the following:" -- that is delete page 76 line 61 through page 77 line 10.

**The cited text is below:**

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**Proposed Resolution: Rejected. The statements are descriptive; the normative “shall” statements are in clause 22.1.1 (for PHY) and in clauses 9, 10 (MAC)**

**CID 3613, 3614 (GEN)**

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| --- | --- | --- | --- | --- | --- | --- |
| 3613 | 77.38 | 4.3.13 |  |  | "A TVHT STA supports all mandatory features of a VHT STA as mandatory features": Again a normative statement in an informative clause. However, without the "as mandatory features" this statement is similar to other informative statements in clause 4. | Delete "as mandatory features". |
| 3614 | 77.42 | 4.3.13 |  |  | The "are not permitted for STAs operating as TVHT STAs." is a normative statement in an informative clause. | Replace "are not permitted for" with "are not used in". |

**Discussion:**

The cited text is below:



The commenter proposes:

A TVHT STA supports all mandatory features of a VHT STA except for 20 MHz,

40 MHz, and 80 MHz channel widths. A TVHT STA supports all optional features of a VHT STA as

optional features except for 160 MHz or 80+80 MHz channel widths and more than 4 spatial streams. The

20 MHz, 40 MHz, 80 MHz, 160 MHz, or 80+80 MHz channel widths and more than 4 spatial streams are

not used in STAs operating as TVHT STAs. The features and behaviors of VHT STAs specified in

Clause 6 (Layer management), Clause 7 (PHY service specification), Clause 8 (Frame formats), Clause 9

(MAC sublayer functional description), Clause 10 (MLME), Clause 13 (MLME mesh procedures), and

Annex G apply to TVHT STAs as well, unless stated otherwise.

**Proposed resolution: Accepted**

**CID 3568 (GEN)**

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| --- | --- | --- | --- | --- | --- | --- |
| 3568 | 40.11 | 3.2 |  |  | "ratio ... as measured on the channel and at the antenna": so the ratio is actually something other than what is measured on the channel and antenna -- we just take the measurements on channel and antenna to be 'good enough' estimates of the ratio? Wouldn't it be clearer to define the ratio directly as what is measured? | Replace "as measured on" with "measured on". |

**Discussion:**

The cited text is below:



Discussion: The RSNI is a ratio that is calculated, not measured. The power value compnents are measured.

Commenter’s proposed change:

**received signal to noise indicator (RSNI):** An indication of the signal to noise plus interference ratio of a

received frame. RSNI is defined by the ratio of the received signal power (RCPI-ANPI) to the noise plus

interference power (ANPI) measured on the channel and at the antenna connector used to receive the

frame.

NOTE 2—RCPI and ANPI might not be measured simultaneously; see 10.11.9.4 (Noise Histogram report) for details

**Proposed resolution: Revised**

**received signal to noise indicator (RSNI):** An indication of the signal to noise plus interference ratio of a

received frame. RSNI is defined as the ratio of the received signal power (RCPI-ANPI) to the noise plus interference power (ANPI) measured on the channel and at the antenna connector used to receive the frame.

NOTE 2—RCPI and ANPI might not be measured simultaneously; see 10.11.9.4 (Noise Histogram report) for details

**CIDs 3554, 3555 (GEN)**

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| --- | --- | --- | --- | --- | --- | --- |
| 3554 | 33.35 | 3.2 |  |  | What does this mean: "The activity level identifier of a mesh station (STA) set per mesh peering or for nonpeer neighbor STAs."? Presumably active mode, light sleep mode and deep sleep mode are mesh power modes -- yet their definitions only mention neighbor mesh STAs, not peering. So shouldn't this definition just say: "The activity level of a mesh station (STA) with respect to a neighbor mesh STA."? | Replace "The activity level identifier of a mesh station (STA) set per mesh peering or for nonpeer neighbor STAs." with "The activity level of a mesh station (STA) with respect to a neighor mesh STA." |
| 3555 | 33.39 | 3.2 |  |  | Definition of mesh power mode tracking: same problem as with the defintion of mesh power mode: the definitions of the apparent power modes (active mode, light sleep mode, deep sleep mode) are in terms only of neighbor mesh STAs. So why are neighbor mesh STAs not mentioned in this definition? | Make all of the mesh power mode definitions consistent with each other. (Can't make a suggestion, since text is insufficient to determinine what is intended.) |

Discussion:

The cited text is below:



Proposed resolution for CID 3554: Rejected. The cited definition is correct, see clause 13.14. Neighbor STAs are either peered or non-peered.

Proposed resolution for CID 3555: Rejected. The comment fails to identify changes in sufficient detail so that the specific wording of the changes that will satisfy the commenter can be determined.

**CID 3517, 3518 (GEN)**

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| 3517 | 9.20 | 3.1 |  |  | "A quality-ofservice (QoS) BSS has one DCF and one HCF", no a QoS STA has one ... | Change "BSS" to "STA" |
| 3518 | 9.21 | 3.1 |  |  | Why the long winded blather at P9.21 about the details of a DMG beacon interval? | End the NOTE at "has a DMG channel access function." |

**Discussion:**

**The cited text is below:**

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**The proposed to change as follows:**

**coordination function:** The logical function that determines when a station (STA) operating within a basic

service set (BSS) is permitted to transmit protocol data units (PDUs) via the wireless medium (WM).

NOTE—The coordination function within a BSS might have one hybrid coordination function (HCF), or it might have one HCF and one point coordination function (PCF) and has one distributed coordination function (DCF). A quality-ofservice (QoS) STA has one DCF and one HCF. In addition, a directional multi-gigabit (DMG) STA has a DMG channel access function.

**Proposed resolution: Revised, make the changes shown below:**

**coordination function:** The logical function that determines when a station (STA) operating within a basic

service set (BSS) is permitted to transmit protocol data units (PDUs) via the wireless medium (WM).

**CID 3516 (GEN)**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 3516 | 42.49 | 3.2 |  |  | STSL definition includes: The only example of this procedure currently specified is direct link established by thedirect-link setup (DLS). I don't think this is true anymore. Aren't TDLS and PBSS all STSLs? | Delete the last setence of the STSL definition. |

**The cited text is below:**

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**Proposed resolution: Accepted**

Note to commenter: TDLS is an STSL, but PBSS is not.

**CID 3496**

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| --- | --- | --- | --- | --- | --- | --- |
| 3496 | 713.40 | 8.4.2.6 |  |  | What does "prepared to deliver" mean? This occurs in 5 places. | Perhaps it needs to "stand" first? |

**The cited text is below:**

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The text occurs ar 713.40, 713.41, 713, 46,

1534.8,



2143.48:



Discussion: “prepared to deliver” means that the traffic is buffered and available upon request for delivery to the peer/STA. How an AP/Mesh STA determines the traffic that it is “prepared to deliver” is implementation dependent.

Proposed resolution: Revised.

At 1534.8 and 2143.48, insert the following footnote after “prepared to deliver”

“How the AP or mesh STA determines the traffic it is prepared to deliver is outside the scope of this standard.”

At 713.40, change the text as shown below:

Each bit in the traffic indication virtual bitmap corresponds to traffic buffered for a specific neighbor peer mesh STA within the MBSS that the mesh STA is prepared to deliver or for a STA within the BSS that the AP is prepared to deliver…