IEEE P802.11
Wireless LANs

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| TGmc selected MAC comment resolutions |
| Date: 2014-08-28 |
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|  |  |  |  |  |

Abstract

This document proposes a resolution for the CIDs indicated below from LB202, the comment on TGm Draft 3.0.

**REVISION NOTES:**

R0: initial

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 TGah Draft. This introduction is not part of the adopted material.

***Editing instructions formatted like this are intended to be copied into the TGah Draft (i.e. they are instructions to the 802.11 editor on how to merge the text with the baseline documents).***

***TGah Editor: Editing instructions preceded by “Instruction to Editor” are instructions to the TGah editor to modify existing material in the TGah draft. As a result of adopting the changes, the TGah editor will execute the instructions rather than copy them to the TGah Draft.***

**CID LIST:**

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# BW Rules

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| **CID** | **Commenter** | **Page** | **Clause** | **Comment** | **Proposed Change** | **Proposed Resolution** |
| 3364 | Mark RISON |  |  | Requirements on BW for anything but RTS/CTS frames and first frame in TXOP re not clear | State that control responses can use any BSS bandwidth, but other frames (from either side) must obey the width set by RTS/CTS, where applicable |  |
| 3474 | Mark RISON | 1241.50 | 9.3.2.7 | "The CTS frame's TXVECTOR parameters CH\_BANDWIDTH and CH\_BANDWIDTH\_IN\_NON\_HT may be set to any channel width for which [...]" -- this is mandatory, not optional, behaviour | Change to "[...] shall be set to a channel width for which [...]" | Accept |

### Discussion:

CID 3364: - commentor did not provide proposed text changes…Commenter has agreed to provide a submission.

CID 3474: - the proposed change looks OK (see below). Propose accept.

“A VHT STA that is addressed by an RTS frame in a non-HT or non-HT duplicate PPDU that has a

bandwidth signaling TA and that has the RXVECTOR parameter DYN\_BANDWIDTH\_IN\_NON\_HT

equal to Dynamic behaves as follows:

— If the NAV indicates idle, then the STA shall respond with a CTS frame in a non-HT or non-HT

duplicate PPDU after a SIFS period. The CTS frame’s TXVECTOR parameters CH\_BANDWIDTH

and CH\_BANDWIDTH\_IN\_NON\_HT ~~may~~ **shal**l be set to ~~any~~ **a** channel width for which CCA on all

secondary channels has been idle for a PIFS prior to the start of the RTS frame and that is equal to or

less than the channel width indicated in the RTS frame’s RXVECTOR parameter

CH\_BANDWIDTH\_IN\_NON\_HT.

— Otherwise, the STA shall not respond with a CTS frame.”

# Frame Formats

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| 3505 | Mark Hamilton | 607.08 | 8.3.2.1 | 8.3.2.1 NOTE 2, is just wrong/limiting. As long as the DA (or SA) maps to be the right RA for a carried MSDU, it doesn't have to have the same DA. | Delete NOTE 2 | Accept |

### Discussion:

The Note does not really provide much clarification.

### Proposed changes:

Accept.

# Management

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| 3133 | Hiroki Nakano | 1578.02 | 10.3.2 | Figure 10-21 and 10-22 are almost the same. | Delete one of them. | Reject. Figure 10-21 shows the flow for MLME primitives for BA setup, while Figure 10-22 shows the flow for MLME primitives for BA tear down. The figures are not the same. |
| 3147 | Mitsuru Iwaoka | 1645.14 | 10.11.9.2 | As specified in 8.4.2.20.8, a frame request always includes MAC Address field. So, the 2nd paragraph of 10.11.9.2 is wrong. | 1) Modify the 1st sentence of the 2nd paragraph as follows;---If the MAC Address field in the frame request is not the broadcast address, ...2) Modify the 2nd sentence of the 2nd paragraph as follows;---If the MAC Address field in the frame request is the broadcast address, ... | Revised. At 1645.14, Change “If the MAC Address field was included in the frame request, a Frame Report Entry where TransmitterAddress (TA) matches the MAC address in the frame request shall be included in the Frame report if at leastone data or Management frame was received with this Transmitter Address during the measurementduration. If the MAC address field was not included in the frame request in response to which this Framereport is being generated, the measuring station shall report all frames received during the measurementduration in one or more Frame Report elements.”To “If the MAC Address field included in the frame request was not set to the Broadcast address, a Frame Report Entry where Transmitter Address (TA) matching the MAC address field value shall be included in the Frame report if at least one data or Management frame was received with this Transmitter Address during the measurement duration. If the MAC address field included in the frame request was set to the Broadcast address, the measuring station shall report all data or management frames received during the measurement duration in one or more Frame Report elements.”At 737.18, Change“If the MAC Address field is the broadcast address, then all frames are counted toward the Frame reportgenerated in response to this frame request.”To “If the MAC Address field is the broadcast address, then all data or management frames are counted toward the Frame report generated in response to this frame request.” |
| 3148 | Mitsuru Iwaoka | 1645.18 | 10.11.9.2 | As specified in 8.4.2.20.8 and 10.11.9.2, the measuring STA shall report all received frames if the MAC Address field in the frame request is the broadcast address. However, some control frames do not include Transmitter Address (e.g. CTS,ACK, Control Wrapper), and control frames other than PS-poll, CF-End, or CF-End+CF-Ack do not include BSSID. It is better to exclude control frames from measurement. | 1) Modify the 2nd sentence of the 2nd paragraph of 10.11.9.2 as follows;---If the MAC address field ..., the measuring station shall report all data or Management frames received during the measurementduration in one or more Frame Report elements.2) Modify the 1st sentence of the 7th paragraph of 8.4.2.20.8 as follows;---If the MAC Address field is the broadcast address, then all data or Management frames are counted toward the Frame report generated in response to this frame request. | Revised. At 1645.14, Change “If the MAC Address field was included in the frame request, a Frame Report Entry where TransmitterAddress (TA) matches the MAC address in the frame request shall be included in the Frame report if at leastone data or Management frame was received with this Transmitter Address during the measurementduration. If the MAC address field was not included in the frame request in response to which this Framereport is being generated, the measuring station shall report all frames received during the measurementduration in one or more Frame Report elements.”To “If the MAC Address field included in the frame request was not set to the Broadcast address, a Frame Report Entry where Transmitter Address (TA) matching the MAC address field value shall be included in the Frame report if at least one data or Management frame was received with this Transmitter Address during the measurement duration. If the MAC address field included in the frame request was set to the Broadcast address, the measuring station shall report all data or management frames received during the measurement duration in one or more Frame Report elements.”At 737.18, Change“If the MAC Address field is the broadcast address, then all frames are counted toward the Frame reportgenerated in response to this frame request.”To “If the MAC Address field is the broadcast address, then all data or management frames are counted toward the Frame report generated in response to this frame request.” |
| 3218 | Qi Wang | 1799.29 | 10.33.2.1 | It is not clear what the parameter n is used for -- There's a "Loop 1,n" reference in the following figure (Figure 10-46), but neither the text nor the figure mandates or recommends a certain value for n. Therefore, this parameter seems to be of no use. | Delete the sentence "In addition, the parameter n corresponds to the number of FST Setup Request and FST Setup Response frame exchanges until both the FST initiator and FST responder successfully move to the Setup Completion state, as described below." and change "Loop 1,n" in Figure 10-46 to "repeat as necessary", | Revised. Replace “"In addition, the parameter n corresponds to the number of FST Setup Request and FST Setup Response frame exchanges until both the FST initiator and FST responder successfully move to the Setup Completion state, as described below." With“The FST Setup Request and FST Setup Response frame exchange is repeated as necessary until both the FST initiator and FST responder successfully move to the Setup Completion state, as described below.”and change "Loop 1,n" in Figure 10-46 to "repeat as necessary”. |
| 3222 | Qi Wang | 1801.56 | 10.33.2.2 | The "Otherwise" in this paragraph relates to the immediately preceding "if", and not to the "If" beginning the paragraph. Also, the "if its MAC address is numerically smaller than the responder's MAC address" is redundant (implied by "otherwise"). Finally, there is a mandatory behavior that is suggested to be described by a "shall". | Continue the first sentence of the paragraph instead of starting a new sentence -- the whole paragraph could read as following,If, after the reception of the acknowledgment to the initiator's FST Setup Request frame, the initiator receives an FST Setup Request frame from the responder, the initiator shall not respond with an FST Setup Response frame if its MAC address is numerically larger (see 10.1.4.3.6 (PCP selection in a PBSS(11ad))) than the responder's MAC address. O; otherwise, if its MAC address is numerically smaller than the responder's MAC address, it becomes the responder and shall responds with the FST Setup Response frame and shall not sendtransmit the FST Setup Request frame during the current FST session transition. | Revised. Change “…it becomes the responder and responds…”with “…it becomes the responder and shall respond…” |
| 3224 | Qi Wang | 1803.64 | 10.33.2.2 | Optional notification is also applicable to FST across channels in the same band. Also a few editorials ("initiator or responder", redundant "as", ...) | Before leaving the Setup Completion state, the initiator andor responder that is performing a full FST session transfer may transmit an FST Setup Response frame in the old band/channel with athe Status Code field set to PERFORMING\_FST\_NOW and with the RA field set to the broadcast address as to notify other STAs in the BSS of thisthe STA's forthcoming full FST session transfer. | Revised.Replace “Before leaving the Setup Completion state, the initiator and responder that is performing a full FST sessiontransfer may transmit an FST Setup Response frame in the old band with a Status Code field set to PERFORMING\_FST\_NOW and with the RA field set to the broadcast address as to notify other STAs inthe BSS of this STA’s forthcoming full FST session transfer.”With“Before leaving the Setup Completion state, the initiator and/or responder that is performing a full FST session transfer may transmit an FST Setup Response frame in the old band/channel with the Status Code field set to PERFORMING\_FST\_NOW and with the RA field set to the broadcast address as to notify other STAs in the BSS of the STA's forthcoming full FST session transfer.” |
| 3225 | Qi Wang | 1805.02 | 10.33.2.2 | STT should be set at transmission of individually addressed MPDUs, MMPDUs or A-MPDUS; use language similar to the one in three paragraphs below in clause c). | Change "... at transmission of any individually addressed MPDU to responder..." to either "... at transmission of any individually addressed MPDU, MMPDU or A-MPDU to the responder..." or more preferably, to "... at transmission of any individually addressed PPDU ..." (or whatever standard term the group has settled on; I think it was PPDU) | Revised.Change "... at transmission of any individually addressed MPDU to responder..." to either "... at transmission of any individually addressed MPDU, MMPDU or A-MPDU to the responder..." |
| 3283 | Guido Hiertz | 1527.22 | 10.1.4.3.5 | Last sentence reads "If no measurement resultis available, the RCPI value shall be set to indicate that a measurement is not available." The reader is left to find out which Integer value represents "Measurement not available." This is documented in Table 16-9--RCPI values. | Change note to hint the reader to Table 16-9--RCPI values. | Revised.Change “…If no measurement resultis available, the RCPI value shall be set to indicate that a measurement is not available."To “…If no measurement resultis available, the RCPI value shall be set to indicate that a measurement is not available (see Table 16-9 RCPI values)." |
| 3308 | Peter Ecclesine | 1570.42 | 10.3.2 | There should be a path leaving the associated state because a client station has not heard its associated master station in a very long time - our maximum sleep time is less than a day. I am concerned when APs go away, and this diagram says clients remain in state 2, 3, or 4. | In Figure 10-12, add a second condition to each of the Deauthentication arrows leading to State 1 - Master STA not heard from. | Revised. At 1571.2 add the following text:“NOTE--- A transition to State 1 may occur for other reasons such as no frames received from a STA for a period of time, or TKIP countermeasures.” |
| 3322 | Mark RISON | 1678.16 | 10.16.4.3 | 10.16.4.3 on 40 MHz AP restrictions appears to allow an AP to transmit a 40 MHz group PPDU even if some STAs are not 40 MHz-capable | Add "and all of the STAs associated with the AP" to the first bullet of the second triplet of bullets. Also fix the fourth para to cover the case where no NCW has been sent (cf. second para) |  |
| 3345 | Mark RISON | 1521.50 | 10.1.3.9 | What is the required TSF accuracy for an AP? The position of the current 0.01% requirement suggests it's only on non-AP STAs | Promote the 0.01% requirement to the top of the subclause so it applies to all STAs |  |
| 3355 | Mark RISON | 1527.16 | 10.1.4.3.5 | If a Request element includes something which would anyway be included in a Probe Response, does the element still get included at the end (i.e. twice)? | Suggest saying may choose not to include at the end, to make text most likely to be compatible with existing devices |  |
| 3374 | Mark RISON | 1521.30 | 10.1.3.9 | Need to specify whether the worst-case TSF drift between two devices is 0.01% or 0.02% | Add a NOTE to confirm it's 0.02% |  |
| 3504 | Mark Hamilton | 1666.42 | 10.12.2.2 | "issue an MLME-ENABLEMENT.confirm primitive with ResultCode set to provide." To provide what? | Finish the sentence | Revised. The Enablement Requester STA never receives a frame. Therefore remove “d)” at 1666.40.  |

### Discussion:

CID 3133 – See above.

CID 3147 and 3148 – These changes should go together.

Revised.

At 1645.14, Change

“If the MAC Address field was included in the frame request, a Frame Report Entry where Transmitter

Address (TA) matches the MAC address in the frame request shall be included in the Frame report if at least

one data or Management frame was received with this Transmitter Address during the measurement

duration. If the MAC address field was not included in the frame request in response to which this Frame

report is being generated, the measuring station shall report all frames received during the measurement

duration in one or more Frame Report elements.”

To

“If the MAC Address field included in the frame request was not set to the Broadcast address, a Frame Report Entry where Transmitter Address (TA) matching the MAC address field value shall be included in the Frame report if at least one data or Management frame was received with this Transmitter Address during the measurement duration. If the MAC address field included in the frame request was set to the Broadcast address, the measuring station shall report all data or management frames received during the measurement duration in one or more Frame Report elements.”

At 737.18, Change

“If the MAC Address field is the broadcast address, then all frames are counted toward the Frame report

generated in response to this frame request.”

To

“If the MAC Address field is the broadcast address, then all data or management frames are counted toward the Frame report generated in response to this frame request.”

CID 3218 – Contacted Carlos Cordeiro – “Qi has a point in her comment. However, I believe her suggestion does not go far enough in clarifying what “repeat as necessary” means in this context. So, would it make sense to, instead of just deleting the noted sentence, replacing it by “The FST Setup Request and FST Setup Response frame exchange is repeated as necessary until both the FST initiator and FST responder successfully move to the Setup Completion state, as described below.”?

CID 3222 – The sentence break looks OK but the shall definitely appears to be missing.

CID 3224 – See resolution.

CID 3225 – The first sentence looks the most reasonable.

CID 3283 – See resolution.

CID 3308 – Not sure how best to state “the master went away.”

Master STA is only used in 2804.30 in B.4.26 and isn’t defined anywhere else.

Mark Rison’s suggestion: “I'm not sure about 3308.  The transitions there are just the auth/assoc

transitions.  If we start putting in other reasons to transition (e.g.

TKIP countermeasures, AP running out of resources and needs to find a

victim, etc.) we'll never end.  How about instead putting some kind of

"NOTE---A transition to State 1 might occur for other reasons, e.g.

inactivity or security concerns."

Proposed resolution:

Revised. At 1571.2 add the following text:

“NOTE--- A transition to State 1 may occur for other reasons such as no frames received from a STA for a period of time, or TKIP countermeasures.”

CID 3504 – After consulation with PeterE, the recommendation is to remove “d)” at the cited location.

Mark Rison’s comments on the proposed resolution:

 “- For 3504, surely you have to issue something, else the SME will just

be sitting there forever (per 281.26).  Isn't the answer to change "set

to provide" to "set to TIMEOUT" and add TIMEOUT to the list at 282.4?

BTW, "ReasResultCode" at 1666.13 should be "ResultCode".

- There are three other "set to provide"s (1603.1, 1609.54, 1617.5)...”

# Power Saving

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| **CID** | **Commenter** | **Page** | **Clause** | **Comment** | **Proposed Change** | **Resolution** |
| 3119 | Graham Smith | 1533.12 | 10.2.2.2 | Table 10-2 has a huge amount of text for the PS mode. I have a few problems with Table 10-2. Firstly there are no headings, and secondly the PS text is long and seems to be very definitive, and thirdly there is no mention of APSD at all. | Table 10-2: Add headings "Mode", "Summary". Replace "PS" with "Power Save or PS". Replace "The AP shall transmit buffered individually addressed BUs to a PS STA only in response to a PS-Poll from that STA,..." with "Unless using APSD (see 10.2.2.5) the AP shall transmit buffered individually addressed BUs to a PS STA in response to a PS-Poll from that STA,...". | Revised.Table 10-2: Add headings "Mode", "Summary". Replace "PS" with "Power Save or PS mode". Replace "The AP shall transmit buffered individually addressed BUs to a PS STA only in response to a PS-Poll from that STA,..." with "Unless using APSD (see 10.2.2.5) the AP shall transmit buffered individually addressed BUs to a PS STA in response to a PS-Poll from that STA,...". |
| 3120 | Graham Smith | 1535.44 | 10.2.2.5.1 | "NOTE--Bufferable MMPDUs are transmitted using AC\_VO. Thus the AC of an MMPDU is, by definition, AC\_VO." Is this true now after 11ae? Maybe best to remove Note? | Remove Note | Reject. P802.11ae does not change medium access rules for buffered MMPDUs. |

CID 3119 – See resolution.

Mark Rison’s comment “For 3319, I think that for consistency with the row above it should be

"Power save mode or PS".  However I've spotted a wrinkle, which is

that "active mode" is defined at 24.34 only as a mesh power mode...

Note also that the capitalisation of "Active mode" is inconsistent

(I can't remember what is the preferred style -- Adrian would).”

CID 3120 – See resolution.

Mark Rison’s comment “For 3120, there is a difference between bufferable MMPDUs and

buffered MMPDUs, I think.  The NOTE might be better with "bufferable"

changed to "buffered", with the second sentence deleted.  But where

actually is the normative statement of the use of AC\_VO for buffered

MMPDUs?  Should this not be a NOTE at all (i.e. should it be normative)?”

# TXOP

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| 3018 | Adrian Stephens | 1274.12 | 9.7.4 | "Mesh STAs should adopt the mandatory PHY rates as the default BSSBasicRateSet" -- What is "adopt"? Which entity "adopts"? How is this adopting any different from obeying the parameters in the MLME-START.request? | At least specify that the SME of a mesh STA uses the mandatory PHY rates as its BSSBasicRateSet. Consider moving this requirement to 6.3.11. | Revised:Change “ Mesh STAs should adopt the mandatory PHY rates as the default BSSBasicRateSet to reduce the risk that acandidate peer mesh STA utilizes a different BSSBasicRateSet.” To“ The SME of a Mesh STAs should use the mandatory PHY rates as the default BSSBasicRateSet in the MLME-START.request primitive to reduce the risk that a candidate peer mesh STA utilizes a different BSSBasicRateSet.” |
| 3019 | Adrian Stephens | 1274.19 | 9.7.4 | "Once the mesh STA establishes a mesh peering with a mesh STA, it shall not change the BSSBasicRateSet, or BSSBasicMCSSet, or BSS basic VHT-MCS and NSS set." -- The use of BSSBasicMCSSet was removed by CID 2010, but missed this occurance. | Remove ", or BSSBasicMCSSet," from the cited location. | Accept. |
| 3042 | Adrian Stephens | 2057.48 | 13.2.4 | "For HT mesh STAs, the Basic MCS Set field of the HT Operation parameter of the MLMESTART.request are identical." -- the value of a parameter in a SAP is not observable to its peer STA. | Relate to OTA signalling. |  |
| 3142 | Mitsuru Iwaoka | 606.27 | 8.3.2.1 | Table 8-34 is not applicable to Mesh Data frames. Table 9-17 (Valid address field usage for Mesh Data and Multihop Action frames) is applied. | Modify the 2nd sentence of the 4th paragraph of 8.3.2.1 as follows;---The content of the address fields is defined in Table 9-17 (Valid address field usage for Mesh Data and Multihop Action frames) for Mesh Data frames and in Table 8-34 (Address field contents) otherwise. |  |
| 3143 | Mitsuru Iwaoka | 611.52 | 8.3.3.1 | The address field usage specified in the subclause 8.3.3.1 is slightly different from Table 9-17 (Valid address field usage for Mesh Data and Multihop Action frames). | Modify the 4th paragraph and NOTE 2 (P611L52 to P611L60) as follows;---The content of address fields for the Multihop Action frame is defined in Table 9-17 (Valid address field usage for Mesh Data and Multihop Action frames). |  |
| 3351 | Mark RISON | 1324.17 | 9.22.3.3 | Can a transmission extend across TBTT, if CFPs are not being used (and the device is not in a mesh)? 9.22.3.3 suggests no, but this is in a section on HCCA so maybe it doesn't apply to EDCA-only operation? | State that transmissions may extend across TBTT in other cases |  |

CID 3042:

After a discussion with Adrian, recommend changing:

“— For HT mesh STAs, the Basic MCS Set field of the HT Operation parameter of the MLMESTART.

request are identical.”

To

“— For HT mesh STAs, the Basic MCS Set field of the HT Operation parameter of the MLMESTART.

request is identical to the HT Operation parameter received in the MLME-MESHPEERINGMANAGEMENT.indication.”

Should we fix the VHT as well at the same location by changing:

“— For VHT mesh STAs, the Basic VHT-MCS and NSS fields in the VHT Operation element are

identical.”

To

“— For VHT mesh STAs, the Basic VHT-MCS and NSS fields in the VHT Operation parameter of the MLMESTART.request are identical to the Basic VHT-MCS and NSS fields in the VHT Operation parameter received in the MLME-MESHPEERINGMANAGEMENT.indication.”**References:**