IEEE P802.11  
Wireless LANs

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| LB207 TWT CIDs | | | | |
| Date: 2015-02-01 | | | | |
| Author(s): | | | | |
| Name | Affiliation | Address | Phone | email |
| Matthew Fischer | Broadcom | 190 Mathilda Place, Sunnyvale, CA 94086 | +1 408 543 3370 | [mfischer@broadcom.com](mailto:mfischer@broadcom.com) |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

Abstract

This document proposes a resolution for CIDs relating to the TWT Information Element and the TWT behavioural subclauses.

**REVISION NOTES:**

R0: initial

R1: added CIDs 6074, 6077, 6133, 6212

R2: 6076 – changed resolution from reject to revise as shown

6126 – changed resolution modestly

6145 – slight modification to resolution

6223 – significant modification to resolution

6077 – significant modification to resolution

6133 – significant modification to resolution

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:**

| **CID** | **Commenter** | **Page.Line** | **Clause** | **Comment** | **Proposed Change** | **Resolution** |
| --- | --- | --- | --- | --- | --- | --- |
| 6011 | MARC EMMELMANN |  |  | The resolution for CID 5073 in document https://mentor.ieee.org/802.11/dcn/14/11-14-1372-09-00ah-tgah-lb205-comments-on-d3-0.xlsx states that the termionology / used wording is in line with text found in IEEE 802.11 REVmc. Based on this argument, the proposed change was rejected.    TGah has added the text (respectively changed the paragraph of the baseline) that was commented on in the previous comment. Hence the comment was valid.    The fact that 11mc used unspecific, unclear, or errorneous wording is not a justification for 11ah to repeat the text and claim that changes to this new text, added by 11ah, should be made in 11mc.    Hence, the comment was not properbly addressed. | Accept the proposed change per previous comment | Reject – see 11-09-1034-10-0000-802-11-editorial-style-guide.doc – see 2.3 and 2.14 – The cited text is subject to 2.3 which has been approved and is also the subject of 2.14, which has not yet been approved, but has been proposed and presented to the group with no dissention yet noted after having been on the server for fifteen months, and therefore, represents the best, current understanding of the guidelines for an amendment. Furthermore, because the WG has not only taken up the question of which phrasing is correct in instances such as the one cited by the commenter but also at least five years ago created a document whose purpose is to provide editorial guidelines on exactly such questions as this one, the task group once again indicates that this matter of style is clearly a WG issue, and not one for the TG to debate. |
| 6075 | Mitsuru Iwaoka | 313.26 | 9.49.2 | A bandwidth is "wider", not "greater". | Replace "greater" with "wider". | Accept |
| 6076 | Mitsuru Iwaoka | 310.50 | 9.49.1 | An SST AP indicates activation of the SST operation by including the SST Operation element, not by the SST element. | Replace "SST element" by "SST operation element". | Revise – Tgah editor to change “An SST STA is an S1G STA that is associated with an SST AP and that chooses a subset of the operating channels enabled for SST operation on which to operate in the BSS, when SST operation is activated by the AP as indicated in the SST element.” To “An SST STA is an S1G STA that is associated with an SST AP and that chooses a subset of the operating channels enabled for SST operation on which to operate in the BSS, when SST operating channels are activated by the AP as indicated in the SST element” |
| 6078 | Mitsuru Iwaoka | 310.38 | 9.49.1 | It is not clear whether a TWT STA can access SST channel(s) or not. 9.49.1 seems to not allow the TWT STA to access SST channels, but 9..44.1 seems to allow. | Add the description that the TWT Channel field of the TWT element corresponds to the SST channels in the SST BSS. | Reject – There is no need to create additional language – the rules for TWT STA primary channel operation are clearly stated in TWT STA subclause 9.44. For non-primary channel operation, the TWT STA is required to obey the SST rules as stated at the end of 9.44.1 |
| 6126 | Alfred Asterjadhi | 151.15 | 8.4.2.196 | I think a value of the TWT Channel field need to be reserved to indicate that the TWT operation is setup in the BSS primary channel rather than other SST channels. Perhaps a value of 0? | Specify the value of the TWT Channel field when not operating in SST mode. | Revise – TGah editor to modify the text at P151 L9: “is equal to 2 MHz” to “is equal to 1 MHz for a BSS with a BSS primary channel width of 1 MHz and 2 MHz for a BSS with a BSS primary channel width of 2 MHz” to 9.1.2.3 – Some background for the change: Note that the text in 8.4.2.196 already covers most cases – it says that if there is an SST Op IE present, then the channel width per bit for the TWT Channel field comes from that element. In the absence of the element, the width is 2 MHz. Whether the chosen channel for TWT operation is the primary channel of the BSS or not is immaterial, as the chosen channel will be reflected in the TWT Channel field, and the fact that the chosen channel is equal to the primary channel or not does not affect the use of the field or the signaling supported by the field. What is missing is the case when the BSS width is only 1 MHz. |
| 6134 | Alfred Asterjadhi | 310.40 | 9.49.1 | "indicates the set of enabled SST operating channels in an SST Operation element and"... I think this applies to aperiodic SST as well. | Insert the quoted text in the comment immediately after "During periodic SST operation, an SST AP". | Accept |
| 6135 | Alfred Asterjadhi | 315.36 | 9.44.4 | change "TWT ID" to "TWT flow identifier" | as in comment | Accept |
| 6136 | Alfred Asterjadhi | 156.01 | 8.4.2.196 | change "the same for as" to "the same as" | as in comment | Accept, note to the editor that the comment is actually for line 64 of page 149. |
| 6137 | Alfred Asterjadhi | 154.26 | 8.4.2.196 | Should calrify that the TWT may be accepted with a different parameter set | add the following to the end of the sentence "with alternative values provided by the TWT responding STA" | Revise – In Table 8-258a2 – TWT setup command field values, in the column labeled “description when transmitted by a TWT responding STA”, for the row with “Accept TWT” in the column labeled “command name”, add the following to the end of the existing text: “in the TWT element transmitted by the responding STA” |
| 6145 | Liwen Chu | 297.48 | 9.44.5 | An AP doesn't know whether a STA has dot11TWTOptionActivated being 1.  Shouldn't TWT group support be checked here? | Change the sentence with S1G Capabilities field. Add TWT group capability check here. | Revise –TGah editor to change “An AP may include an S1G STA with dot11TWTOptionActivated equal to true as a member of a TWT group and signal TWT times to that STA using the TWT Group Assignment field of the TWT element” to “An AP may include an S1G STA as a member of a TWT group if the STA indicated TWT requester support and indicated support for TWT grouping in the S1G Capabilities Info field in the S1G Capabilties element in its (Re)Association Request frame and may signal TWT times to that STA using the TWT Group Assignment field of the TWT element” |
| 6208 | Joseph Levy | 296.00 | 9.44.3 | The sentence "A TWT requesting STA awake for an explicit TWT SP shall not transmit a PS-Poll frame with the Poll Type subfield equal to any value other than 2." is not clear and is confusing | Modify the sentence into "A TWT requesting STA awake for an explicit TWT SP shall transmit a PS-Poll frame with the Poll Type subfield equal to 2." | Reject – the proposed change would force a TWT requesting STA that is awake for an explicit TWT SP to transmit a PS-Poll frame, but this is not intended to be a requirement of such a STA. The existing language makes a clear restriction on behavior without forcing any new requirements. Other choices of language have style issues that have been rejected at the WG level, e.g. “If a TWT STA wishes to transmit” is deemed too anthropomorphic. “If a TWT STA transmits a PS-POLL during an explicit TWT SP, then the PS-Poll shall have restrictions” is a statement of a requirement which is applied after the fact. The existing language is precise and avoids previously proscribed style problems. |
| 6223 | Joseph Levy | 299.00 | 9.44.6 | After receiving NDP paging, It is not clear how the STA should conduct medium access when following the procedures described. For example, should STA transmit SIFS after the NDP paging? Or should it follow EDCA rules to obtain TXOP? | Clarify the medium access rules used | Revise – TGah editor, at P299L45 D4.0, add to the end of the sentence: “after SIFS” and at P299L47 D4.0 add to the end of the sentence: “after SIFS” and make the following change to 9.3.2.3.3: after the phrase: “frame that is an immediate response to either a BlockAckReq frame or an A-MPDU,” add the following: “an (NDP) PS-Poll frame or uplink trigger frame or NDP CTS that is a response to an NDP Paging frame” |
| 6074 | Mitsuru Iwaoka | 164.16 | 8.4.2.198 | The description of the Maximum Transmission Width field (P164L16) states that the maximum PPDU bandwidth permitted by the AP for a transmission cannot exceed the BSS operating channel width. The second paragraph of 9.49.1 (P310L27) specifies that the BSS operating channel width of the SST BSS is less than or equal to 2 MHz.  Thus, an SST STA cannot transmit wider than 2 MHz and can be limited by the SST Channel Unit field of the most recently received SST Operation element. The Maximum Transmission Width subfield is not necessary.  The same issue exists in the Channel Indication subfield in the RAW Assignment field of the RPS element (Figure 8-575a7) as 9.22.5.1 specifies that the Channel Indication subfield is used to indicate on which channel(s) the SST STA(s) that are granted access to the RAW (P276L32). | 1) Remove the Maximum Transmission Width field from Figure 8-575a7(P138L5), Figure 8-575a30 (P163L40), and Figure 8-575a31 (P164L55).  2) Remove Table 8-258a7 (P164L26) and description of the Maximum Transmission Width subfield (P164L15 to L23 and P165L17 to L19).  3) Remove "Maximum Transmission Width, " from the last sentence in P137L60.  4) Replace "Maximum Transmission Width" with "minimum width channel" in P163L59.  5) Remove "and Maximum Transmission Width" in P164L6 and P164L12.  6) Modify the 9th bullet of 9.7.5.7 (P253L38) as follows:  "Additionally, the value of the CH\_BANDWIDTH parameter for a transmission by an S1G STA that is operating as an SST STA is limited by the SST Channel Unit field of the SST Operation element (see 9.49 (Subchannel Selective Transmission (SST))) and 9.22.5 (Restricted Access Window (RAW) Operation)."  7) Replace following text at P313L25: "The STA shall not transmit frames on the indicated allowed SST channels with a bandwidth that is greater than the Maximum Transmission Width specified in the SST element." with  "The SST STA shall not transmit frames with a bandwidth wider than the SST Channel Unit field of the SST Operation element." | Reject – while it is true that the maximum width is restricted within an S1G SST BSS to the width of the BSS, it is not restricted in this manner in a BSS that is not an S1G SST BSS and in that case, the Max TX Width field is used to determine the maximum PPDU width. |
| 6077 | Mitsuru Iwaoka | 276.32 | 9.22.5.1 | In 9.49, SST operation is allowed in the Periodic RAW but not allowed in the non-Periodic RAW. However, 9.22.5 does not specify the such restriction. | Restrict SST operation only for Periodic RAW in the subclause 99.22.5, or allow SST operation for non-Periodic RAW in the subclause 9.49. | Revise – Tgah editor to change the 4th paragraph of 9.49.1 to read as shown: “An SST AP is an S1G AP with dot11SelectiveSubchannelTransmissionPermitted equal to true. During aperiodic SST operation, an SST AP indicates the set of enabled SST operating channels in an SST Operation element. During aperiodic SST operation, an SST AP indicates the subset of SST channels that SST STAs are allowed to access during a (short) beacon interval in the SST element that is transmitted in the S1G Beacon frame that initiates the (short) beacon interval and in the Channel Indication subfield of RPS elements that include SST STAs in the RAW Group. During periodic SST operation, an SST AP indicates the subset of SST channels that SST STAs are allowed to access during a (short) beacon interval in an RPS element that has a value of 1 in the Periodic RAW Indication subfield. – Tgah editor to add two sentences to the first paragraph of 9.49.2 D4.0 as follows: “The S1G AP may include the RPS element in S1G Beacon frames to signal additional channels allowed for SST operation within specific RAWs. The channels which are allowed for SST operation in the RPS element can be different from the channels allowed for SST operation in the SST element.” |
| 6133 | Alfred Asterjadhi | 276.32 | 9.22.5.1 | Does this mean that both SST element and RPS element need to be present in the S1G Beacon? | I think this paragraph needs some clarifications to be inline with SST operation procedure. | Revise – TGah editor to change D4.0 9.22.5.1 – add a sentence after the text that is quoted here: “assuming the primary channel is a channel identified by a value of 1 in one of the Channel Activity bits in the Channel Indication subfield in the RAW Assignment field of the RPS element.” – the sentence to be added is: “The channels which are allowed for SST operation in the RPS element can be different from the channels allowed for SST operation in the SST element.” |
| 6212 | Joseph Levy | 163.00 | 8.4.2.198 | Maximum Transmission Width in SST/RPS element is never used, as in indicated in 9.49, "An SST STA shall not transmit using a channel width that is greater than the value of the SST Channel Unit indicated in the most recently received SST Operation element from its associated AP.", and "The BSS operating channel width indicated in the Channel Width field of the S1G Operation Information element transmitted by the AP is less than or equal to 2 MHz." | Since "Maximum Transmission Width" field is never used, change this field to reserved or remove this field from SST/RPS elements. | Reject – it is used by BSS that are not S1G SST BSS – i.e. when the SST Op IE is not present. |

**Discussion:**

xxxx

**Proposed changes**

xxxx

**CID xxxx**

**References:**