IEEE P802.11
Wireless LANs

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| LB266: CR for Misc CIDs |
| Date: December 20, 2022 |
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 Abstract

This submission proposes resolutions for following 15 CIDs received for TGbe LB266:

11098, 11449, 11450, 12368, 13215, 13689, 13894, 14119, 14112, 13321, 13729, 10706, 11938, 10090, 10870, 12789

**Revisions:**

* Rev 0: Initial version of the document.
* Rev 1: Added CID 14119
* Rev 2: Added resolutions for additional CIDs
* Rev 3: Updated resolution for CID 11449
* Rev 4: Deferred CIDs 14119 and 14112. Live changes during the TGbe MAC adhoc call on 1/11/2023.
* Rev 5: Changed resolution for CID 13894 and deferred CIDs 10090 and 10870.
* Rev 6: Add CID 12789

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

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

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

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| --- | --- | --- | --- | --- | --- | --- |
| **CID** | **Commenter** | **Section** | **Pg.Ln** | **Comment** | **Proposed Change** | **Resolution** |
| 11098 | Robert Stacey |   | 407.22 | Trying to cover the singular and plural using this bracketing technique is cumbersome and in this case has errors. If you want to do it, it needs to be done so that the sentence reads correctly without the bracketed content, which it does not in this case. Same problem at 407.28 and 407.38. | Remove brackets from around the "s" | **Revised**The cited statement was deleted as a resolution for CID 12794 in CR document 1182r7.**No further changes are needed in this document.** **TGbe editor, please apply changes as shown in 11-22/1182r7 (https://mentor.ieee.org/802.11/dcn/22/11-22-1182-07) tagged 12794** |
| 11449 | Gaurang Naik | 35.3.16.6 | 456.54 | A STA with backoff counter that has already reached zero initiate transmission only following condition 1b)' is contradictory to item 3), which says that the STA may perform backoff following 10.23.2.4 and 10.3.4.3 to transmit. | Replace the statement with 'A STA with backoff counter that has already reached zero initates a transmission following condition 1b) or 3). | **Rejected**A STA can initiate transmission only following condition 1b). Condition 3) is to start a new backoff procedure. Therefore, the current text is correct. |
| 11450 | Gaurang Naik | 35.3.16.6 | 457.61 | Condition 1b) refers to the case where the STA transmits following the wait. Case 2) is the one where STA chooses not to transmit and waits. Therefore, the statement should refer to case 2) and not Case 1b). | Replace 'that choose not to transmit following condition 1b)' with 'that chose not to transmit following condition 2)' | **Rejected**The cited text is referring to the correct condition (i.e., condition 1b). |
| 12368 | Rojan Chitrakar | 9.4.2.312.2.2 | 220.26 | Directly reference bit number (B7) is risky, in case the format of the MLD capabilities field is changed, the bit position may change; also B7 refers to bit position within the MLD capabilities and operations subfield, not within the AP MLD Type Indication subfield. | Best if values of the the AP MLD Type Indication subfield can be used, e.g. value 0 indicates not a NSTR mobile AP MLD, 1 indicates NSTR mobile AP MLD and remaining values are reserved. If preference is to use the first bit of the subfield, change B7 to B0 of the AP MLD Type Indication subfield. | **Rejected**The group could not reach consensus on a resolution that would address the issue raised by the commenter. Particularly, there was disagreement between the two options proposed by the commenter. |
| 13215 | Evgeny Khorov | 10.23.2.4 | 0.00 | Regarding the backoff procedure in DCF, the spec notes that it is important that designers recognize the need for statistical independence of the random number streamsbetween STAs. (10.3.3). For NSTR MLD, it make sense to inialize backoff with the same value, if the state of the channel in both links is synchonized. | Add a note (after the second paragraph of 10.23.2.4) that if NSTR MLD initializes a backoff of the same AC synchroneously on several links and use the same CW, the corresponding affiliated STAs may initialize backoff with the same random value. | **Rejected**The cited issue has been discussed in the group and the group could not reach consensus. The issue was discussed in 11-20/974r4 (SP2). The results of the SP were 21Y, 34N, 20A.  |
| 13689 | Yunbo Li |   | 424.20 | "The Common info field of the Basic Multi-Link element carried in the (Re)Association Request frame shall include the MLD MAC address, the MLD Capabilities and Operations, and the EML Capabilities subfields". When neither EMLSR nor EMLMR supported, why do we need to carry EML Capabilities subfield? | clarify that only when EMLSR or EMLMR is supproted, the EML Capabilities subfield shall be carried. | **Revised**The cited statement was deleted as a resolution for CID 10629 in CR document 1399r4.**No further changes are needed in this document.** **TGbe editor, please incorporate the changes as shown in 22/1399r4 (https://mentor.ieee.org/802.11/dcn/22/11-22-1399-04) under CID 10629** |
| 13894 | Ming Gan | 35.3.4.3 | 417.23 | one case of ML element with Per STA profiles in Neighbor Report element is missing | please complete the missing case | **Rejected**The cited issue has already been resolved in 11be D2.3. No further changes are required. |
| 14119 | Li-Hsiang Sun | 35.3.11 | 438.40 | (re)association response does not have a timestamp/TBTT, and subject to retransmission. How does it correspond to a reported link TBTT when quiet element is included in (re)association response frame? | add a reference timestamp in association response frame | **Rejected** It is expected that a non-AP MLD has performed either active or passive scanning before sending an Association Request frame to the AP MLD. During scanning, the non-AP MLD would have determined the TSF of the AP and TBTT offsets with respect to the partner links. As a result, the non-AP MLD will have the TSF information of the link on which the non-AP MLD is performing ML setup and also that of the other links supported by the AP MLD. Therefore, there is no need to add a reference timestamp in the association response frame. |
| 14112 | Li-Hsiang Sun | 35.3.19.1 | 469.11 | "APs affiliated with an NSTR mobile AP MLD that are simultaneously transmitting PPDUs to the peer device affiliated with an MLD shall align the end time of PPDUs"The AP MLD simultaneously transmitting PPDUs to more than 1 peer device on different links should also align the end of PPDUs | As in comment | **Rejected**The comment fails to identify a technical issue that needs to be resolved. End-alignment is specified for an AP MLD when the AP MLD simultaneously transmits PPDUs to the same non-AP MLD since it can lead to NSTR interference at the non-AP MLD if the PPDUs are not end aligned. This issue does not exist if the AP MLD is transmitting PPDUs to different non-AP MLDs. Hence, no changes are needed.  |
| 13321 | Muhammad Kumail Haider | ï»¿9.3.3.6 | 173.13 | In Table 9-63 row for TWT element, please clarify what's the negotiation type of TWT elements included in a (Re)Association Response frame under various conditions, especially for condition when it is included for r-TWT schedule announcement. Make any other spec changes as needed. | as in comment | **Rejected**The comment fails to identify a technical issue that needs to be resolved. The required rules for setting the Negotiation Type subfield in the (Re)Association Response frame are specified in normative subclauses. Hence, no changes are needed. |
| 13729 | Yunbo Li | 9.3.3.10 | 176.41 | "otherwise, it is not present.", similar sentence is apper in next paragraph. It is redudant now. | delete that sentence | **Revised**Agree with the commenter in principle. One of the condition “Otherwise, it is not present” is removed.**TGbe editor: Please implement the changes shown in document [**<https://mentor.ieee.org/802.11/dcn/22/11-22-2170-05-00be-lb266-misc-cids.docx>] **tagged as 13729** |
| 10706 | Liangxiao Xin | 35.3.16.4 | 454.19 | There is fairness issue between STR MLD and NSTR MLD when they contend the channel for transmitting to each other. When STR MLD gains the channel access and obtains a TXOP on one NSTR link, the NSTR MLD is not able to contend on the other NSTR link. Then, STR MLD will occupy the channel with another TXOP on the other NSTR link. If the second TXOP ends later than the first TXOP, STR MLD will win the competition again. It turns out that the NSTR MLD will not have a chance to access the channel until the AP MLD finishes its transmission on both links. | AP affiliated with an MLD has to end its TXOP before the end of the another TXOP obtained by another AP affiliated with the same MLD if those TXOPs on the two links are used to transmit to the STAs affiliated with a same non-AP MLD and the two links are the links of a NSTR link pair of the NSTR MLD. Commenter will bring the contribution. | **Rejected**The comment fails to identify a technical issue that needs to be resolved. The cited issue is addressed in the 11be draft through PPDU end-time alignment. No further changes are needed. |
| 11938 | Stephan Sand | 10.23.2.8 | 299.01 | According to P1 P802.11be D2.0 amends 802.11-2020, 802.11ax-2021, 802.11ay-2021, 802.11az D4.0, 801.11ba-2021, 802.11bb D0.7, 802.11bc D2.0, 802.11bd D2.1 and 802.11-REVme D1.2. Comparing 11be D2.0 with REVme D1.2 for subclause 10.23.2.8, 11be D2.0 clearly does not amend REVme D1.2 nor does it amend 11bd D2.1 or 11az D4.0. Hence either the list of amendements on P1 needs to be updated or 11be D2.0 needs to amend the previous standards and amendments according to the list on P1. | Please update 10.23.2.8 according to the latest version of 11-REVme D1.2 | **Revised**Agree with the commenter. The changes shown in 11be D2.0 for Clause 10.23.2.8 are no longer applicable since the corresponding paragraph was deleted from the baseline. Please also see resolution for CID 109 and the related discussions in [https://mentor.ieee.org/802.11/dcn/21/11-21-1782-06-000m-annex-g-cids-resolution.docx]. Corresponding text changes are made in Clause 35.7.3.**TGbe editor: Please implement the changes shown in document [**<https://mentor.ieee.org/802.11/dcn/22/11-22-2170-05-00be-lb266-misc-cids.docx>] **tagged as 11938** |
| 10090 | Xiangxin Gu | 9.4.2.312.2 | 217.01 | Change EMLMR Delay to EMLMR Padding Delay to align with EMLSR. Add EMLMR Transition Delay which is needed for judging the end of frame exchange sequence with EMLMR. Overiding EMLSR Padding Delay and EMLMR Padding Delay subfield. Overriding EMLSR Transition Delay subfield and EMLMR Transition Delay subfield. | As in the comment | **Rejected**The comment fails to identify a technical issue that needs to be resolved. The draft does not define an EMLMR Transition delay. No further changes are needed. |
| 10870 | Yousi Lin | 9.4.2.312.2.2 | 217.10 | In EML capabilities subfield, EMLSR padding delay and EMLSR transition delay are both for EMLSR operation. But EMLMR operation only has an EMLMR delay which is a padding delay. Is the transition delay subfield necessary? | If transition delay is not necessary, please remove it for EMLSR operation; if it is necessary, please add it for EMLMR operation. | **Rejected**The comment fails to identify a technical issue that needs to be resolved. The draft does not define an EMLMR Transition delay. No further changes are needed. |
| 12789 | Shubhodeep Adhikari | 9.4.2.312.2.2 | 0.00 | Add more granularity to the EMLSR padding delay values, especially at the lower end. | Propose to add a padding delay of 48us in between the existing delay values of 32us and 64us by using one of the reserved bits. This is because, even for non-AP architectures that support padding delay ~O(32us) or lower, there can be scenarios (depending for example, on power save configurations, RSSI etc) where the required padding delay can be slightly higher. Currently, even a minor increase beyond 32us will force a non-AP to indicate a double value of 64us. | **Rejected**The issue raised by the commenter is valid for any subfield where a discrete set of values can be signaled. Moreover, the issue is more pronounced when a non-AP MLD signals a large value for padding delay (e.g., between 128 usec and 256 usec). Optimization of the values signaled in the EMLSR padding delay subfield would require reducing of the granularity across the extreme values (i.e., 0-256 usec), which will increase the values that an AP MLD needs to support, increasing the complexity. |

***TGbe editor: Please note Baseline is 11be D2.3***

**9.3.3.10 Probe Response frame format**

**TGbe editor: Please add the following statement in Table 9-67 as shown below [CID 13729]**

**Table 9-67—Probe Response frame body**

|  |  |  |
| --- | --- | --- |
| **Order** | **Information** | **Notes** |
| 11 | Quiet | The Quiet element is optionally present if dot11SpectrumManage- mentRequired is true or if dot11RadioMeasurementActivated is true or dot11RestrictedTWTOptionImplemented is true. |
| 96 | TWT | The TWT element is optionally present within broadcast Probe Response frames if dot11TWTOptionActivated, dot11HEOption- Implemented and dot11FILSOmitReplicateProbeResponses are true.The TWT element is present if the dot11RestrictedTWTOption- Implemented is true and the AP has at least one (#11109)R-TWT schedule as described in 35.8.3 (R-TWT SPs announce- ment(#10893)(#11109)). Otherwise, the TWT element is not present (#13729)If the TWT element is present, then the Negotiation Type subfield of the TWT element is 2. |

**10.23.2.8 Multiple frame transmission in an EDCA TXOP**

***TGbe editor: Please delete the following paragraph (including all bullets and sub-bullets) as shown below. Please note that except for the last three sub-bullets, all other bullets and subbullets have already been deleted in REVme D2.0 [CID 11938]***

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**35.7.3 Rules for EHT sounding protocol sequences**

***TGbe editor: Please add and update the following statements as shown below [CID 11938]***

An EHT beamformer that initiates the EHT non-TB sounding sequence shall transmit the EHT NDP Announcement frame with a single STA Info field, the STA Info field having a value in the AID11 field other than 2047 and with the AID11 field in that STA Info field set to the AID of the STA identified by the RA field or to 0 if the STA identified by the RA field is an associated AP, mesh STA or IBSS STA. The EHT NDP Announcement frame shall be followed after a SIFS by an EHT sounding NDP, which shall be followed after a SIFS by a PPDU containing one or more EHT Compressed Beamforming/CQI frames.

…

An EHT beamformer that initiates an EHT TB sounding sequence shall transmit an EHT NDP Announcement frame with two or more STA Info fields and the RA field set to the broadcast address. The EHT NDP Announcement frame shall be followed after a SIFS by an EHT sounding NDP, which shall be followed after a SIFS by a BFRP Trigger frame. Each EHT beamformee that is addressed by a BFRP Trigger frame shall respond after a SIFS with an EHT TB PPDU containing one or more EHT Compressed Beamforming/CQI frames.