IEEE P802.11
Wireless LANs

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| Comment Resolution for CC37 |
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Abstract

This document proposes resolutions for the comments received in CC37 (TGbe Coexistence Assessment Document).

# Introduction

57 comments were received during CC37 [1]. For convenience, the comments have been grouped in the following categories:

* Editorial comments: strictly editorial (typos, punctuation, …)
* Out-of-scope comments: 9 comments were submitted that ostensibly belong in CC36.
* Comments on the “references” section
* Comments on naming of documents
* Remaining comments: any comments not in the previous categories

Comments are marked as either “ACCEPTED”, “REVISED” or “REJECTED”. All changes have been implemented in 11-21/0706r4 [2].

# CC37 Comments

## Editorial Comments (9 CIDs)

The comments in this section (see Table 1) are purely editorial. Some comments submitted by the commenters as “editorial” were deemed to be not strictly editorial and were allocated to one of the other categories.

Table 1: Editorial comments received in CC37

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **CID #** | **Section** | **Comment** | **Proposed Change** | **Proposed resolution** |
| 6 | 9 | 802.19 comment from Stephan Sand on CA document: remove empty bullet from buellet list in Section 9 | as in comment | REVISED – Appears to be artefact of Track changes review. Not there after changes are accepted. No action needed. |
| 26 | 9 | One blank bullet. | Delete it. | REVISED – Appears to be artefact of Track changes review. Not there after changes are accepted. No action needed. |
| 27 | 9.3 | "..., this is no different from ..."Should be "..., this is not different from ..."? | As in comment. | REVISED – It appears both are possible. No change needed. |
| 35 | 3 | spelling; change "band" to "bands" located in first sentence on page 3 | As commented | ACCEPTED |
| 38 | 6 | Paragraph starting with "According to these rules..." missing period after 2nd bullet sentence. | Add period after "-62 dBm." | ACCEPTED |
| 39 | 6 | Paragraph starting with "For signals with bandwidth greater...." missing period after 2nd bullet sentence. | Add period after "-62 dBm." | ACCEPTED |
| 51 | 7 | Missing comma in 1st sentence after "document" | add comma after "this document, " | ACCEPTED |
| 52 | 7 | missing period after "users" in 2n bullet under 3. Very Low Power operation. Add period. | As commented | ACCEPTED |
| 53 | 9.3 | Grammar: change "so" to "therefore" | As commented | ACCEPTED |

## Out-of-scope comments (9 CIDs)

It appears that the comments in this section (CID 10–18, see Table 2) were erroneously submitted to CC37, while they actually pertain to CC36. These comments will be rejected for being out of scope, but they may be considered during the comment resolution of CC36.

Table 2: out-of-scope comments received in CC37

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **CID #** | **Page#** | **Comment** | **Proposed Change** | **Proposed resolution** |
| 10 | 273.19 | 11be shall define a mechanism to address the constraint issue between two non-AP MLDs that elect different links to receive groupcast data frame and operate others into PS mode, and the similar issue between non-AP MLDs and legacy STAs. | In order to address the groupcast data frame delay issue caused by non-AP MLD ,AP MLD may not buffer the groupcast data frame on the link where the associated non-AP MLD doesn't intend to receive the groupcast data frame. | REJECTED – out of scope for Coexistence Assurance Document. Comment should be addressed in 802.11be. |
| 11 | 273.19 | groupcast data frame delivery among multiple links in GCR-BA mode is missing, 11be group shall define a mechanism to address it . | as the comments | REJECTED – out of scope for Coexistence Assurance Document. Comment should be addressed in 802.11be. |
| 12 | 274.05 | 11be shall define a mechanism to detect the missing issue or duplicated issue before non-AP MLD intends to switch the groupcast data frame indicated link at any time. | SN is a simple tool and is widely used to detect the duplicated issue according to 802.11 SPEC, suggest using MLD SN for groupcast data frame to address to duplicate or missing issue, which the MLD SN carried in MGMT frame can facilitate the non-AP MLD detect in advance. | REJECTED – out of scope for Coexistence Assurance Document. Comment should be addressed in 802.11be. |
| 13 | 267.26 | Measurement MMPDUs delivery among multiple links is missing,11be shall define a mechanism to allow measurement MMPDUs delivered on any links without waking up the PS STA affiliated non-AP MLD. | as the comments | REJECTED – out of scope for Coexistence Assurance Document. Comment should be addressed in 802.11be. |
| 14 | 267.26 | 11be shall provide a solution on how to buffer and deliver the link level and MLD level measurement frame. | some measurement frame belongs to MLD level, like STA statistics request/report. while some measurement frame belongs to link level, like link measurement request/report. 11be shall define a mechanism to cover all the cases. | REJECTED – out of scope for Coexistence Assurance Document. Comment should be addressed in 802.11be. |
| 15 | 243.53 | 11be has defined the Trigger TXOP TXS procedure which allows a AP to grant a STA with its obtained TXOP, but the solution on how the STA notify the duration , buffer length, etc. to the AP in advance is missing. | BSR control frame is the best place to indicate the requested TXOP duration or the length of buffered traffic in granted TXOP case, but there is no reserved bit in BSR, we can consider to signaling these information in a new A-control frame | REJECTED – out of scope for Coexistence Assurance Document. Comment should be addressed in 802.11be. |
| 16 | 255.06 | Seems it's too late to let non-AP MLD to know the accepted link numbers in (re)association response frame, because non-AP MLD can't reject the association if the status code equal to successful in the (re)association response frame | The commenters will provide a solution on this. | REJECTED – out of scope for Coexistence Assurance Document. Comment should be addressed in 802.11be. |
| 17 | 181.23 | 11be shall define an mechanism to address to overhead issue of the longer BA | The commenters will provide a solution on this. | REJECTED – out of scope for Coexistence Assurance Document. Comment should be addressed in 802.11be. |
| 18 | 135.30 | allow/deny list feature is widely used in current AP product in current design, the AP may not send probe response if the MAC address of a specified non-AP STA is added the deny list when receives the probe request . Because it doesn't make sense in such case if the AP intends to refuse the connection of a specified non-AP STA, and also it's too wasted for the efforts on both side if the non-AP STA is not aware of such rejection until receiving the association response with the status code equal to reject.Same concern for the MLD, if a AP MLD adds the MLD MAC address of a non-AP MLD to it's deny list, AP MLD may not response with ML probe response after receiving the ML probe request in which the MLD MAC address matches with the deny list.Besides, considering the buffer size of deny list, AP MLD may only store the MLD MAC rather than each link address of non-AP MLD | AP MLD may identify a non-AP MLD by its MLD MAC address, and may not send ML probe response if the MAC address matches the deny list. Therefore, the MLD MAC address shall be present in ML probe request frame. | REJECTED – out of scope for Coexistence Assurance Document. Comment should be addressed in 802.11be. |

## References (9 CIDs)

The comments below (see Table 3) were submitted on Section 11 of the Coexistence Assurance Document.

Table 3: Comments received in CC37 on the “References” section of the Coexistence Assessment Document

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **CID #** | **Section** | **Comment** | **Proposed Change** | **Proposed resolution** |
| 5 | 11 | 802.19 comment from Stephan Sand on CA document: Reference [1] should be updated to the most recent draft of P802.11be D1.0 | see comment | REVISED –Changed to “IEEE P802.11be D1.0” |
| 19 | 11 | IEEE Std 802.11ax-2021 has been published. | Change "[4] Draft P802.11ax D8.0" to "IEEE Std 802.11ax-2021". | ACCEPTED |
| 20 | 11 | "[9] 802.11-2020: Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) Specifications" "[9] IEEE Std 802.11-2020" would be better? | As in comment. | REVISED – Changed to “IEEE Std 802.11-2020: Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) Specifications” |
| 21 | 11 | "[1] Draft P802.11be D0.4" We now have D1.0. | Change "D0.4" to "D1.0". | REVISED – Changed to “IEEE P802.11be D1.0” (see CID 5) |
| 28 | 11 | Change reference [4] to the published IEEE 802.11ax-2021 version. | Change "Draft P802.11ax D8.0" to "IEEE 802.11ax-2021" | ACCEPTED –See CID 19 |
| 31 | 11 | Change reference [1] to IEEE 802.11be D1.0 | Change "Draft P802.11be D0.4" to "Draft P802.11be D1.0" | REVISED –Changed to “IEEE P802.11be D1.0”, see CID 5 |
| 54 | 11 | Change reference [2] to current draft number | Change "Draft P802.11be D0.4" to "Draft IEEE P802.11be D1.0" | REVISED –Changed to “IEEE P802.11be D1.0”, see CID 5 |
| 55 | 11 | Reference [5] URL link missing not found "404 error" update URL link for the FCC R&O/FNPRM | As commented | REVISED –Corrected link (looks like Word replacing “-“ with “–“ caused the problem) |
| 56 | 11 | Update reference [9] to include new baseline "published" 802.11-2021 standard | Change "802.11-2020" to "IEEE Std 802.11-2021" | REVISED – Changed to “IEEE Std 802.11-2020: Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) Specifications”, see CID 20 |

## Naming (14 CIDs)

The comments below ask for changes to the naming of the various IEEE documents.

Table 4: Comments about document naming received in CC37

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| --- | --- | --- | --- | --- |
| **CID #** | **Section** | **Comment** | **Proposed Change** | **Proposed resolution** |
| 29 | 3 | Add "IEEE" to the first occurance of 802.15 | Change "802.15" to "IEEE 802.15" | ACCEPTED |
| 32 | 9.3 | Expand the term "11be" | Change "11be" to "802.11be" | REVISED – changed to “IEEE 802.11be” |
| 34 | 3 | Format issue: "802.15 standards" located on first sentence on page 3 | Change "802.15" to "IEEE 802.15" | ACCEPTED, see CID 29 |
| 36 | 4 | Format issue with subclause title | Change "non-802 market..." to "non-IEEE 802 market...." | ACCEPTED |
| 37 | 6 | Format issue with subclause title | Change "non-802.11 systems" to "non-IEEE-802.11 systems..." | ACCEPTED |
| 41 | 9.1 | Correct 802 format in title: Change "P802.11be" to "IEEE P802.11be" | As commented | ACCEPTED |
| 42 | 7 | Reformat sentence: Add 802.15 standard for section 3 in 1st paragraph, 1st sentence | Change " Section 3 standards" to "IEEE 802.15 standards in section" | REVISED –Changed to “IEEE 802.15 standards 3-1 through 3-3, 3-5, 3-7 and 3-12 (see **Table1**)” |
| 43 | 7 | Add standard group in 2nd paragraph, 1st sentence | Change "standards" to "The IEEE 802.15 standards in sections" | REVISED –Changed to “IEEE 802.15 standards 3-4 and 3-6 and the amendment 3-13 (see **Table1**)” |
| 44 | 7 | Reformat sentence: Add standard group in 2nd paragraph, 3rd sentence | Change "The" to "The IEEE 802.15 standards in sections" | REVISED –Changed to “IEEE 802.15 standards 3-4 and 3-6 and the 3-13 ultra-wideband (low power spectral density) systems (see **Table1**)” |
| 45 | 9.1 | Correct format: Change "P802.11be" to "IEEE P802.11be" | As commented | ACCEPTED |
| 47 | 9.3 | Correct format: Change "11be" to "IEEE 802.11be" | As commented | ACCEPTED, see CID 32 |
| 48 | 9.2 | Correct format: 1st paragraph, 1st sentence Change "802.11ax" to "IEEE 802.11ax" | As commented | ACCEPTED |
| 49 | 9.2 | Correct format: 1st paragraph, 2nd sentence Change "whereas 802.11ax" to "whereas IEEE 802.11ax" | As commented | ACCEPTED |
| 50 | 7 | Format issue with subclause title | Change "non-802.11 systems..." to "non-IEEE 802.11 systems...." | ACCEPTED |

## Remaining (16 CIDs)

The remaining comments (i.e., comments that don’t fit in any of the above categories) have been collected in Table 5.

Table 5: Remaining comments

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **CID #** | **Section** | **Comment** | **Proposed Change** | **Proposed resolution** |
| 1 |  | Within IEEE, it seems normal to have a -62 dBm level for non-Wi-Fi signals (or not recognized as such). But it seems also that ETSI has set a level of -72 dBm. Is it possible to explicitly mention in the specifications the case of Europe and the levels recommended by ETSI. |   | REVISED –This is coexistence assessment document for 802.11be and 802.11be solely mentions -62 dBm as an ED value for CCA.Added footnote referencing ETSI and -72 dBm.  |
| 2 | 2 | The coexistence analysis is comprehensive and sounds good.Is Coexistence Assessment the same as Coexistence Assurance (CA)?In Section 2, the 160MHz spacing has nch value starting at 31. But in the Ax coexistence assurance (IEEE 802.11-16/1348r7), the nch value starts at 15 for 160MHz channel spacing. Is this an error? | Please check. | REVISED – “coexistence assessment” is the new name for what was previously called “coexistence assurance”.The nch values listed in section 2 are for 320 MHz channels, not 160 MHz channels. No change needed. |
| 3 | 3 | The tables in sections 3, 4 and 5 of the document the last column includes this:"Frequency Band (GHz)"However each cell under this table has its won dimensions, either MHz or GHz. This is an inconsistency in the document. | Remove the (GHz) element in the description of the column such that the description reads:"Frequency Band" | ACCEPTED |
| 4 | 2 | 802.19 comment from Benjamin Rolfe on CA document: The third paragraph would be more helpful if it described (here or by reference) to how to map channel index to a frequency. | Add mapping of index to frequency either explicitly or by reference to where this is found in the standard (base or draft as appropriate). | REJECTED – Mapping of index to channel center frequency is provided by formula in third paragraph |
| 7 | 9 | 802.19 comment from Stephan Sand on CA document: add operation after "Multi-Link" in the bullet list | as in comment | ACCEPTED |
| 8 | 7 | Only mentions modes of APs, but rules for client(STA) for coexistence with licensed users of the 6 GHz bands are also defined in the regulation (FCC). | Add sub bullet for operation of a client device under Standard Power Operation.."Client device must limit its power to no more than 6 dB below its associated standard power access point's authorized transmit power." | ACCEPTED |
| 9 | 7 | Here only mentions modes of APs, but rules for client(STA) for coexistence with licensed users of the 6 GHz bands are also defined in the regulation. | Add sub bullet for operation of a client device under standard power AP."Client device must limit its power to no more than 6 dB below its associated standard power access point's authorized transmit power." | ACCEPTED |
| 22 | 11 | [5] is for FCC. If referring only to [5], it should be clarified that is for the FCC case and shown as an example. | As in comment. | REVISED – Change reference to “[5]” with “(see [5] for FCC rules)” |
| 23 | 7 | U-NII-5 and U-NII-7 are defined as US spectrum. More general description needed. | As in comment. | REVISED –Changed to “5.925 – 6.425 GHz (FCC U-NII-5) and 6.525 – 6.875 GHz (FCC U-NII-7)” |
| 24 | 7 | Does the expression saying SP/LPI/VLP operation is "allowed" used to explain the US situation? More general description needed. | As in comment. | REVISED –SP and LPI are part of published FCC regulation. VLP is under further consideration. For VLP, changed “allowed” to “envisioned for” |
| 25 | 7 | VLP allowed in US already? Please reconfirm. | As in comment. | REJECTED – Footnote 5 was intended to indicate that VLP is still under discussion in some regulatory domains  |
| 30 | 7 | Expand "full 6 GHz band", as this does not appear to be a defined term. | It may be useful to specify the frequency limits of the full 6 GHz bands, e.g. 5.950 to 7.125 GHz | REVISED –Added “(i.e. 5.950 to 7.125 GHz)” |
| 33 | 9.4 | Concerning CID2449 of D0.3 CC34, the comment was rejected : "The tone plan for 20/40 MHz is identical in HE and EHT;the tone plan for 80 MHz is different.Furthermore, at this stage, there is no support for interoperability between HE and EHT, specifically not within the same 80 MHz subblock".Shall not this change be mandated in this section of coexistence document ? | as in comment | REJECTED –Interoperability between EHT and HE devices will be achieved by the EHT devices operating in HE mode, so it doesn’t appear there is an issue here.As described elsewhere in the document, coexistence between 802.11 devices relies on CSMA, which will operate correctly in a mixed environment with EHT and HE devices. |
| 40 | 7 | Missing abbreviation 2nd paragraph | Change "radio local area networks" to "radio local area networks (RLANs)" | ACCEPTED |
| 46 | 9.1 | 1st paragraph, 2nd sentence; change "PSD" to " Power Spectral Density (PSD)" | As commented | ACCEPTED |
| 57 | 6 | There is no reference to regulators using AFC. | Add Note:AFC is under consideration by the FCC and other regulatory domains. | REVISED – Added “AFC is under consideration by the FCC and other regulatory domains” at end of next-to-last paragraph of section 6. |

# Summary

This document proposes a resolution for all comments received in CC37.

The corresponding changes are implemented in 11-21/0706r4 [2].

# References

[1] IEEE 802.11be CC37 comments on Coexistence Assessment Document, 11-21/1019r1

[2] TGbe Coexistence Assessment Document, 11-21.0706r4