IEEE P802.11
Wireless LANs

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| LB254 Comment Resolution for 11bd D2.0 Clause 4 |
| Date: 2021-11-02 |
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Abstract

This submission discusses resolutions to the following 17 CIDs from WG LB 254 of TGbd D2.0 related to Clause 4.

Th CID list is: 2022, 2023, 2052, 2054, 2055, 2064, 2077, 2079, 2080, 2127, 2129, 2219, 2220, 2221, 2222, 2239, 2282

Proposed changes in this document are with reference to TGbd D2.0.

Revisions:

* Rev 0: Initial version of the document
* Rev 1: Updated resolutions to CIDs 2239, 2221, and 2222

Proposed comment resolution

Presented and discussed, no open discussion points

Under discussion

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **CID** | **P.L** | **Comment** | **Proposed Change** | **Resolution** |
| 2064 | 0.00 | Terminology for DCM is not consistent. For example,- [P62L32-33] BPSK dual-carrier modulation (DCM)- [P93L48] When DCM and BPSK modulation is applied ...- [P104L36 (Table 32-14)] BPSK with DCM- [P120 (Table 32-20)] BPSK with DCM (MCS15)It is better to define a simple term (e.g. BPSK-DCM, which is used in 802.11be D1.1) for BPSK with DCM explicitly in clause 3 and use the term consistently in the rest of specifications. | Define "BPSK-DCM" as "BPSK modulation with dual-carrier modulation (DCM)" in clause 3. Use the term "BPSK-DCM" in the rest of specifications. | RevisedAgree in principle with commentor to replace all occurrences with “BPSK-DCM”. DCM is defined in the 802.11ax-2021 acronym list and BPSK is defined in the 802.11-2020 acronym list. Since BPSK-DCM is no new scheme compared to 802.11ax-2021, no definition of “BPSK-DCM” is needed. Note that only QAM is defined but 16-QAM, 64-QAM or 256-QAM is not separately defined in 802.11-2020.**TGbd editor:**Please replace all occurences of “BPSK with DCM” or similar with “BPSK-DCM”: P19L48, P62L32-33, P93L48, P104L36, P106L16-19, P106L27, P106L55, P107L20, P107L48, P108L16, P108L42, P120L28, P120L59, P121L28, P121L59 |
| 2023 | 19.48 | description "BPSK and DCM" seems confusing because intetion is to show one of modulation schemes. It is not separate two features. It should be BPSK with DCM or BPSK DCM as shown through the spec. Or just DCM because DCM is only applied to BPSK modulation in 11bd | as in comment | RevisedAs proposed by CID 2064 and 802.11be D1.1 all occurences are replaced with “BPSK-DCM”Similar comments 2064, 2282 |
| 2282 | 19.48 | "Mandatory support for BPSK and DCM." The terminology varies quite a bit throughout the draft. In several other sections (for example, 32.3.11-1-4), it's "BPSK modulation with DCM". It would be clearer to adopt a single term. Also, since "DCM" as a general term is applicable to more than just BPSK, it would help to clarify that only "BPSK modulation with DCM" is mandatory for NGV STAs. | Change "Mandatory support for BPSK and DCM" to "mandatory support for BPSK with DCM". | RevisedAs proposed by CID 2064 and 802.11be D1.1 all occurences are replaced with “BPSK-DCM”Similar comments 2064, 2282**TGbd editor:** Please see CID 2064 |
| 2219 | 19.14 | The clause should not start with "The IEEE 802.11 Enhancements for" - as this phrase is not necessary in the 802.11 specification which is defining the NGV STA. | Replace: "The IEEE 802.11 Enhancements for" with: "A" | Revised**TGbd editor:**Please replace "The IEEE 802.11 Enhancements for" with "An” |
| 2052 | 19.18 | Be constent with the terminology. Communicating OCB here, but operating OCB elsewhere. | Change "communicating" to "operating" | Reject802.11-2020 usage:

|  |  |
| --- | --- |
| Word | Occruences |
| operate, operation  | 6 |
| communicate, communications | 11 |
| transmit, transmission | 6 |
| send | 1 |
| define | 1 |

11bd D2.0 usage:

|  |  |
| --- | --- |
| Word | Occruences |
| operate, operation  | 16 |
| communicate, communications | 13 |
| transmit, transmission | 12 |
| Discovery | 14 |
| Beamforming | 4 |
| Receiving | 1 |
| Support | 1 |

As can be seen from the search in 802.11-2020 and 11bd D2.0 there is nothing like a “consistent” use of the terms “communicating/communications” and “operating/operations”. |
| 2022 | 19.19 | no comma required between "5.9 GHz band" and "as defined" | as in comment | Accepted |
| 2077 | 19.19 | Clauses E2.3 and E2.4 should be subclauses E2.3 and E2.4 since they are in Annex E. | As in comment. | Accepted |
| 2054 | 19.24 | Use the singular; the implementer is not implementing all NGV STAs, only one. | At 19.24 and 19.27, change "NGV STAs" to "An NGV STA"At 19.33 change "NGV STAs support" to "An NGV STA supports"At 19.37 change "NGV STAs are" to "AN NGV STA is" | Accepted |
| 2220 | 19.37 | OCB is well defined in clause 4.3.17 of the baseline specification, there is no need to explain or define it in clause 4.3.17a. | Change: "NGV STAs are capable of transmitting and receiving frames outside the context of a BSS (dot11OCBActiviated is true) as specified in 11.18 (STAs communicating Data frames outside the context of a BSS)."To:NGV STAs are capable OCB operation as specified in 11.18 (STAs communicating Data frames outside the context of a BSS)." | RevisedAgree with the comment. Since OCB is introduced in subclause 4.3.17, there is no need to reintroduce it in 4.3.17a.**TGbd editor:**Please replace all occurences of “out side the context of a BSS”, “out side the context of a BSS (OCB)” or “out side the context of a BSS (dot11OCBActivated is true)” with OCB in subclause 4.3.17a.Note in D2.0 there are three occurences on P19: L11, L18, L37. In D2.1 there are three occurences on P19: L29, L35, L48 |
| 2127 | 19.41 | The transmission of non-NGV duplicate PPDUs is a main PHY feature distinguishing an NGV STA from a non-NGV STA. Please add the following bullet to the end of the bullet list on line 53 :"\* Optional support for 20 MHz non-NGV duplicate PPDUs" | as in comment | Accepted |
| 2239 | 19.55 | There is a (probably unintentional) discrepancy in the use of "coexistence" between the PHY requirements and the MAC requirements for an NGV STA. The PHY requirement is simply "coexistence with non-NGV STAs" [p. 19, line 55]. The MAC requirement is more completely stated as "same channel coexistence with non-NGV STAs". Both requirements should be for same-channel coexistence | Change "support for coexistence" to "support for same-channel coexistence". Also, on p. 20 line 5 insert a hyphen to change "same channel" to "same-channel". | Accepted**TGbd editor:**Please verify 802.11 style guid and change if necessary to "support for same channel coexistence". |
| 2221 | 19.59 | The statement "Additional main PHY features" doesn't makes sense to me, I think these are simply "Additional PHY features" | Change: "Additional main PHY features in an NGV STA are the following:"To: "Additional PHY features in an NGV STA are the following:" | RevisedAgree with the comment. After discussion, the feature list is updated.**TGbd editor:**Please incorporate the changes in <https://mentor.ieee.org/802.11/dcn/21/11-21-1722-01-00bd-lb254-comment-resolution-for-11bd-d2-0-clause-4.docx> |
| 2129 | 20.15 | The last pargraph in Clause 31.2.3 states that "An NGV STA shall support block ack". Hence add a bullet before line 15 as follows:"- Mandatory support for block ack" | as in comment | Accepted |
| 2222 | 20.18 | The statement "Additional main MAC features" doesn't makes sense to me, I think these are simply "Additional MAC features" | Change: "Additional main MAC features in an NGV STA are the following:"To: "Additional MAC features in an NGV STA are the following:" | RevisedAgree with the comment. After discussion, the feature list is updated.**TGbd editor:**Please incorporate the changes in <https://mentor.ieee.org/802.11/dcn/21/11-21-1722-01-00bd-lb254-comment-resolution-for-11bd-d2-0-clause-4.docx> |
| 2079 | 20.37 | Remove the word "Annex" for consistence with the same appearance several lines above. P.3 is a subclause. | AS in comment. | RevisedAgree with the comment. In addition, searching for “P.3” yields another reference to Annex P.3, but here the subclause title is missing**TGbd editor:**Please remove the word “Annex” on P20L37 and on P59L56 replace “Annex P.3” with “P.3 (Differential Distance Computation using Fine Timing Measurement frames) |
| 2055 | 20.40 | Duplicates a statement at 19.27 | Remove paragraph | AcceptedSame CID as 2080 |
| 2080 | 20.40 | A duplicated paragraph. | Remove it. | AcceptedSame CID as 2055 |

Editorial changes:

add

~~remove~~

# Changes with respect to CID 2221 and 2222 only

The main PHY features of an NGV STA that are not present in a non-NGV STA are the following:

— 10 MHz and 20 MHz PPDU formats with half of the data subcarrier frequency spacing of VHT PHY
defined in Clause 21 (Very High Throughput (VHT) PHY specification)

• Mandatory support for 10 MHz NGV PPDU

• Mandatory support for LDPC coding

• Mandatory support for Midambles

• Mandatory support for BPSK and DCM

• Mandatory support for 256-QAM

• Mandatory support for class C2 transmit spectrum mask for 20 MHz NGV PPDU

• Optional support for 20 MHz NGV PPDU

— Mandatory support for repetitive NON\_NGV\_10 PPDU

— Mandatory support for coexistence with non-NGV STAs

— Mandatory support for class C transmit spectrum mask for 10 MHz NGV PPDU (#2221)

— Optional support for transmission and reception of single user (SU) MIMO with 2 spatial streams

Additional ~~main~~ NGV STA PHY features ~~in an NGV STA~~ are ~~the following~~: (#2221)

— Mandatory support for single spatial stream

~~— Mandatory support for class C transmit spectrum mask for 10 MHz NGV PPDU~~ (#2221)

— Mandatory support for Clause 17 (Orthogonal frequency division multiplexing (OFDM) PHY specification) 10 MHz PPDU

— Optional support for Classes A, B, and D of spectrum mask requirement for 10 MHz bandwidth

The main MAC features of an NGV STA that are not present in a non-NGV STA are the following:

— Mandatory support for same channel coexistence with non-NGV STAs

— Mandatory support for extended MAC service interface to provide higher layers with the ability to control NGV transmissions and receive status regarding NGV receptions and the radio environment

— Mandatory support for 20 MHz channel access with 10 MHz primary and 10 MHz secondary channel

— Mandatory support for NGV capability indication for non-NGV PPDUs encoded in the Duration/IDfield of the MAC header

— Mandatory support for reception of frame aggregation when communicating OCB

— Optional support for transmission of frame aggregation when communicating OCB

— Optional support for 20 MHz OCB communication (#2222)

Additional ~~main~~ NGV STA MAC features ~~in an NGV STA~~ are ~~the following~~: (#2222)

— Mandatory support for 10 MHz OCB communication

~~— Optional support for 20 MHz OCB communication~~ (#2222)