IEEE P802.11  
Wireless LANs

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| LB254 Comment Resolution Clauses 31.1, 31.6, 32.1.1, E.2.3 (select CIDs) | | | | |
| Date: 2021-09-14 | | | | |
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Abstract

This submission discusses resolutions to the following CIDs from WG LB 254 of TGbd D2.0:

Clause 31.1: CID 2229

Clause 31.6: CID 2089

Clause 32.1.1: CIDs 2003, 2004, 2024, 2025, 2090, 2172, 2173, 2228, 2231

E.2.3: CID 2270

The CIDs are displayed in numerical order in the table.

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

Revisions:

* Rev 0: Initial version of the document. Not presented.
* Rev 1: Corrected resolution of CID 2172, Augmented resolution of CID 2231, Add resolution for CID 2270.
* Rev 2: Removed editing instructions from accepted CIDs. Updated color coding of CIDs so all CIDs are “Presented and discussed, no open discussion points”

Proposed comment resolution

Modificaiton to previous revision

Presented and discussed, no open discussion points

Under discussion

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| --- | --- | --- | --- | --- |
| **CID** | **P.L** | **Comment** | **Proposed Change** | **Resolution** |
| 2003 | 62.44 | NGV-MCS 10~14 have no defintion. Update "NGV-MCS0 to 15" to "NGV-MCS0 to 9 and NGV-MCS15" | As in the comment. | Accepted |
| 2004 | 62.55 | To match the definition in Annex D, change "Class C2 of spectrum mask" to ""Spectrum mask C2", change "Class C of spectrum mask" to "Spectrum mask for power Class C" | As in the comment. | Accepted |
| 2024 | 62.26 | "20 MHz contiguous channel widths" better to be "contiguous 20 MHz channel widths" | as in comment | Accepted |
| 2025 | 62.45 | NGV-LTF-2xRepeat should be NGV-LTF-2x-Repeat | as in comment | Accepted |
| 2089 | 61.48  (31.6) | Change "neighbor" to "neighboring" (two instants). | As in comment. | Accepted |
| 2090 | 62.63 | The RTT ranging can use either 10 or 20 MHZ NGV PPDUs. | Change "and" to "or." | Revised.  Agree in principle. Text is modified based on CID 2172.  TGbd Editor: no additional change needed. |
| 2172 | 62.63 | Since NGV ranging has been specified in Clause 31.4, in more detail replace "round trip time (RTT) based ranging using 10 and 20 MHz NGV PPDUs" with "NGV Ranging NDP frames for NGV ranging as described in 31.4 (NGV ranging)." | as in comment | Accepted |
| 2173 | 62.65 | Add after "20 MHz NGV PPDU" "or 20 MHz non-NGV duplicate PPDU" | as in comment | Accepted. |
| 2228 | 62.9 | There is no preamble defined that is interoperable with any of the 802.11 PHY standards since 802.11a; there has been discussion in IEEE 802 and SAE about operating NGV in unlicensed bands on a shared basis with other 802.11 devices, but without a 20MHz 802.11n/ac/ax/be preamble to enable preamble detection, only Energy Detection is possible. This limits the ability of NGV to operate in unlicensed band with minimal interference from other 802.11 devices, since Wi-Fi devices using energy detection for CCA will cause significant interference to NGV. A request was also made by Car to Car Communication Consortium to comment on unlicensed band usage. See also other comments on unsuitability of 802.11n/ac/ax/be for ITS applications. | Include PPDU modes that are compatible with other 20MHz 802.11 PHY layers operating in the 5GHz band. | Rejected.  The P802.11bd PAR scope states "This amendment shall provide interoperability, coexistence, backward compatibility, and fairness with deployed OCB (Outside the Context of a BSS) devices". The PPDU modes requested in the comment would not provide coexistence with those devices and are thus outside the scope of the amendment. |
| 2229 | 55.10  (31.1) | With the publication of the FCC Report and Order for Docket 19-138 and the Further Notice of Proposed Rulemaking, the FCC has clearly stated that operation of DSRC will not be allowed in the future in the United States. This draft does not mention the spectrum availability issue nor does it address interoperability with other 802.11 PHY standards such as 802.11n/ac/ax/be in the newly-created U-NII-4 band (5850-5895MHz) | Modify the document to exclude operation in the FCC regulatory domain. | Rejected.  The current rules for operating in the modified 5.9 GHz ITS band in the US, specified in the FCC Report & Order that the commenter refers to, still require use of DSRC in the modified 5.9 GHz ITS band. See CFR 47 § 90.379 and CFR 47 § 95.3189, both of which specifically require compliance with DSRC standards. |
| 2231 | 62.41 | The PAR requires "fairness with deployed OCB (Outside the Context of a BSS) devices;" there was discussion in 802.11bd about maintaining fairness in a mixed environment of 802.11p (non-NGV) and NGV devices that would change the behavior of NGV in congestion. This fairness discussion is not addressed in the D2.0 draft. The 802.11bd draft does not address in detail how an NGV device operates when it senses 802.11p (non-NGV) device. Do all NGV devices in range have to revert to non-NGV signaling? For how long? Should a message be sent in both NGV and non-NGV (802.11p) formats? How will an NGV device insure there is no Roadside Unit nearby since there is no requirement for an ACK in an OCB system? | This is similar to a comment in D1.0 which was not addressed to my satisfaction. This section needs to include details on how NGV and non-NGV devices behave when in proximity to insure fairness. | Rejected.  An NGV STA's selection of a transmit PPDU format is generally determined by higher layers because those layers have essential information not available to the MAC/PHY, e.g. application requirements. It is inappropriate to specify PPDU format selection rules at the MAC/PHY based on incomplete information. Furthermore, members of the IEEE 1609 Working Group meeting jointly with TGbd specifically requested that the 802.11bd amendment NOT attempt to specify a one-size-fits-all behavior for NGV STAs' PPDU selections.  Also, the PAR requirement for fairness relies on this definition agreed by TGbd in 11-19-0202/r1: “Fairness – Ability of IEEE 802.11p devices to have the same opportunities as IEEE 802.11bd devices to access the channel”. Fairness is aimed at fair channel access, not PPDU format choices. |
| 2270 | E.2.3 | The FCC's 5.9 GHz Report & Order (effective July 2021) changes the requirements within the US 5.9 GHz band (5.850-5.925 GHz). Some of the rules that formerly applied to all 75 MHz now apply only to the upper 30 MHz, for example the requirement that "A STA shall have dot11OCBActivated equal to true". | Change "A STA shall have dot11OCBActivated equal to true" to "A STA shall have dot11OCBActivated equal to true when operating in 5.895-5.925 GHz". | Rejected.  The proposed change is out of scope of this amendment. |

*Text with changes based on CID resolutions above.*

**31.6 Radio environment measurement**

**…**

If requested by the up layer, an NGV STA with dot11STAMeasurementPeriod not equal to 0 shall measure the number of neighboring STAs, the number of neighboring NGV STAs and report the measurement results to the up layer as defined in 6.6 (NGV radio environment report). (#2089)

**32.1.1 Introduction to NGV PHY**

**…**

The NGV PHY provides support for both 10 MHz and contiguous 20 MHz channel widths. (#2024) The NGV PHY data subcarrier frequency spacing is a half of VHT PHY and HT PHY subcarrier frequency spacing defined in Clause 21 (Very High Throughput (VHT) PHY specification) and Clause 19 (High Throughput (HT) PHY specification), respectively.

…

An NGV PHY shall support the following features:

— Single spatial stream

— NGV-MCS 0 to 9 and NGV-MCS 15 (#2003)

— Three LTF formats: NGV-LTF-1x, NGV-LTF-2x, and NGV-LTF-2x-Repeat (#2025)

— LDPC coding (transmit and receive)

— Midamble periodicity of 4, 8, 16 OFDM symbols

— 10 MHz NGV PPDU

— Repetitive NON\_NGV\_10 PPDU

— Spectrum mask for power Class C requirement for 10 MHz NGV PPDU (#2004)

— Spectrum mask Class C2 requirement for 20 MHz NGV PPDU, if 20 MHz NGV PPDU is supported (#2004)

An NGV PHY may support the following features:

— Transmission and reception of single user (SU) MIMO with 2 spatial streams

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

— NGV Ranging NDP frames for NGV ranging as described in 31.4 (NGV ranging) (#2172, 2090)

— 20 MHz NGV PPDU or 20 MHz non-NGV duplicate PPDU (#2173)