IEEE P802.11  
Wireless LANs

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 802.11  IEEE P802.11bd/D3.0 Mandatory Draft Review (MDR) Report | | | | |
| Date: 2022-01-17 | | | | |
| Author(s): | | | | |
| Name | Company | Address | Phone | email |
| Robert Stacey | Intel |  |  | robert.stacey@intel.com |
| Peter Ecclesine | Cisco Systems |  |  | [petere@ieee.org](mailto:petere@ieee.org) |
| Yujin Noh | Senscomm |  |  |  |
| Emily Qi | Intel |  |  |  |
| Yongho Seok | MediaTek |  |  |  |
| Edward Au | Huawei |  |  |  |
| Joseph Levy | InterDigital |  |  |  |
| Carol Ansley | Cox |  |  |  |

**Abstract**

This document contains the report of the TGbd Mandatory Draft Review.

r0: section headings, initial assignements.

R1: Peter Ecclesine MDR comments

R2: Added findings from Edward and Emily

# Introduction

## Purpose of this document

This document is the report from the group of volunteers that participated in the P802.11bd/D3.0 mandatory draft review.

This document contains recommendations for changes to the P802.11bd draft to bring it into improved compliance to IEEE-SA and WG11 style.

The recommended changes need to be reviewed by TGbd and approved, or ownership of the issues taken by TGaz.

## Process / references

The MDR process is described in:

* 11-11/615r6 – WG802.11 MEC Process

And references:

* 11-09/1034r19 – 802.11 Editorial Style Guide

A setup meeting was held, and review topics identified and assigned to volunteers. The volunteers provided their review comments, which have been compiled into this document, with some editorial changes.

## Acknowledgements

The 802.11 technical editors (Robert Stacey and Peter Ecclesine) gratefully acknowledge the work and contribution of:

* Yujin Noh
* Emily Qi
* Joseph Levy
* Yongho Seok
* Edward Au
* Carol Ansley

# Findings

## Style

### Style Gude 2.1 – Frames

Emily Qi

No error was found. Good job!!

### Style Guide 2.2 – Naming Frames

Emily Qi

53.37: change “Frame Construction and Processing” to “frame construction and processing**”.**

### Style Guide 2.2 – true/false

Carol Ansley

### Style Guide 2.3 – “is set to”

Carol Ansley

### Information Elements/Subelements

Edward Au

#### Style Guide 2.4.1 – Information Elements/subelements – Naming

The naming of the new element (DMG OCB element) is correct and there is no specific finding except the following unrelated comments:

[1] At 65.33, should we replace “An OCB element” with “A DMG OCB element” as per 9.4.2.308?

[2] At 91.8, should we replace “with element” with “with entry”?

[3] At 100.24 and 100.25, should we replace “elements” with “entries”?

[4] At 102.37, should we replace “elements” with “entries”?

[5] At 116.55, should we replace “The TXVECTOR elements” with “The TXVECTOR parameters”?

[6] For Table 9-322h23fb, please check whether it is really named as “322h23fb”!

#### Style Guide 2.4.2 – Definition Conventions

#### No findings.

#### Style Guide 2.4.3 – Element Inclusion Conventions

No findings.

### Style Guide 2.5 – Removal of functions and features

Edward Au

No findings.

### Style Guide 2.6 – Capitalization

Edward Au

[1] At 53.4, replace “Pre Association Security Negotiation” with “Pre association security negotiation” because only the first letter of the heading is required to be capitalized.

[2] At 53.37, replace “PASN Frame Construction and Processing” with “PASN frame construction and processing” because only the first letter of the heading is required to be capitalized.

[3] At 65.22, replace “DMG Beamforming outside the context of a BSS” with “DMG beamforming outside the context of a BSS” because only the first letter of the heading is required to be capitalized.

[4] At 108.49, replace “Spectral Flatness” with “Spectral flatness” because only the first letter of the heading is required to be capitalized.

[5] At 122.41, replace “NGV Ranging NDP” with “NGV ranging NDP” because only the first letter of the heading is required to be capitalized.

[6] At 133.26, replace “NGV Extended MAC Service features” with “NGV extended MAC service features” because only the first letter of the heading is required to be capitalized.

[7] At 141.10, replace “Differential Distance Computation using Fine Timing Measurement frames” with “Differential distance computation using Fine Timing Measurement frames” because only the first letter of the heading is required to be capitalized.

[8] At 49.53 for Figure 11-10a, replace “DMG Discovery outside the context of a BSS” with “DMG discovery outside the context of a BSS”.

[9] At 50.36 for Figure 11-10b, replace “Beamforming training during the DMG Discovery outside the context of a BSS” with “Beamforming training during the DMG discovery outside the context of a BSS”.

[10] At 122.56 for Figure 32-18, replace “NGV Ranging NDP format” with “NGV ranging NDP format”.

[11] At 142.40 for Figure P-2, replace “Parameters recorded by PSTA when monitoring Non-TB Ranging measurement exchange” with “Parameters recorded by PSTA when monitoring non-TB ranging measurement exchange”.

[12] At 19.55, replace “Mandatory support for Midambles” with “Mandatory support for midambles”.

[13] At 91.2, replace “Midamble symbol” with “midamble symbol”.

[14] At 107.6, replace “The midamble field” with “The Midamble field”.

[15] At 122.6, replace “where *M* is Midamble Periodicity” with “where *M* is midamble periodicity”.

[16] Throughout D3.0, replace “NGV Ranging” with “NGV ranging”.

[17] Throughout D3.0, replace “Non-TB Ranging” with “non-TB ranging” if “Non-TB Ranging” is not the first term of a sentence.

[18] Throughout D3.0, replace “Non-TB Ranging” with “Non-TB ranging” if “Non-TB Ranging” is the first term of a sentence.

[19] At 66.24, replace “EDCA Ranging” with “EDCA ranging”.

[20] At 66.54, replace “an HE Ranging NDP” with “an HE ranging NDP”.

[21] In Table 32-3, replace “NGV Parameters” with “NGV parameters”.

[22] In Table 32-3, replace “Parameter List” with “Parameter list”.

[23] In Table 32-16, replace “NOTE – the values” with “NOTE – The values”.

[24] In Table 32-16, replace “20 MHz Channel” with “20 MHz channel”.

[25] In Table 32-17, replace “NOTE – the values” with “NOTE – The values”.

[26] In Table 32-17, replace “20 MHz Channel” with “20 MHz channel”.

[27] In Table 32-20, replace “NGV-MCS Index” with “NGV-MCS index”.

[28] In Table 32-21, replace “NGV-MCS Index” with “NGV-MCS index”.

[29] In Table 32-22, replace “NGV-MCS Index” with “NGV-MCS index”.

[30] In Table 32-23, replace “NGV-MCS Index” with “NGV-MCS index”.

[31] At 30.33, replace “channel number” with “Channel number”.

[32] At 30.46, replace “Channel Number” with “Channel number”.

[33] At 49.1, replace “Figure 11-10a (DMG Discovery outside the context of a BSS) illustrates an example of the DMG Discovery outside the context of a BSS, in which the Discovery Beacon parameter is set to true in the MLME-DMGOCB-START.request primitive for both STAs” with “Figure 11-10a (DMG discovery outside the context of a BSS) illustrates an example of the DMG discovery outside the context of a BSS, in which the discovery beacon parameter is set to true in the MLME-DMGOCB-START.request primitive for both STAs”.

[34] At 49.6, replace “Figure 11-10b (Beamforming training during the DMG Discovery outside the context of a BSS(#2144)) illustrates an example of beamforming training during the DMG Discovery outside the context of a BSS, in which the MAC address of the peer STA is informed over higher layer and included in the MLME-BFTRAINING.request primitive” with “Figure 11-10b (Beamforming training during the DMG discovery outside the context of a BSS(#2144)) illustrates an example of beamforming training during the DMG discovery outside the context of a BSS, in which the MAC address of the peer STA is informed over higher layer and included in the MLME-BFTRAINING.request primitive”.

[35] Ast 66.43, it says “Secure LTF Req, Secure LTF Support is set to 0”. Are “Secure LTF Req” and “Secure LTF Support” fields?

[36] At 83.1, replace “the Constellation Mapper block” with “the constellation mapper block”.

[37] At 87.62, replace “Non-HT short training field duration” with “Non-HT Short Training field duration”.

[38] At 87.64, replace “Non-HT long training field duration” with “Non-HT Long Training field duration”.

[39] At 94.62, replace “the Length value” with “the value of the Length field”.

[40] At 121.2, replace “OCB Primary 10 MHz channel” with “OCB primary 10 MHz channel”.

[41] At 129.59, replace “Support for FTM Non TB sounding” with “Support for FTM non-TB sounding”.

[42] At 131.6, replace “non-TB ranging exchange” with “Non-TB ranging exchange”.

[43] At 131.30, replace “Operating Band” with “Operating band”.

[44] At 131.52, replace “DMG Operation” with “DMG operation”.

[45] At 132.22, replace “Operating Bandwidth” with “Operating bandwidth”.

[46] At 133.12, replace “NGV PPDU Format” with “NGV PPDU format”.

[47] At 133.32, replace “Band” with “band”.

[48] At 141.25, replace “supports NGV Non-TB ranging” with “supports NGV non-TB ranging”.

Unrelated comments:

[49] At 44.48, replace “an HE Ranging 10 NDP” with “an HE ranging NDP”. I speculate that “10” is a copy and paste error from either a line or page number.

[50] At 44.49, replace “an HE Ranging NDP followed after SIFS by an 11 LMR frame” with “an HE ranging NDP followed after SIFS by an LMR frame”. I speculate that “11” is a copy and paste error from either a line or page number.

[51] At 86.28, replace “domatin” with “domain”.

[52] At 91.44, replace “L-LTF fileds” with “L-LTF fields”.

### Style Guide 2.7 – Terminology: frame vs packet vs PPDU vs MPDU

Edward Au

[1] At 64.31, it says “The NON\_NGV\_10 repetition transmission mode supports OCB broadcast service to both NGV STAs and non-NGV STAs with improved packet reception success rate”. Shall it be the success rate of PPDU reception? Please note that the use of “packet” should be minimized.

[2] At 69.62, replace “NGV Ranging NDP frames” with either “NGV ranging NDP” or “NGV ranging NDP PPDUs”. Please note that PPDU is preferred to frame in the PHY.

### Style Guide 2.8 – Use of verbs & problematic words

Joseph Levy

#### normative, non-normative, ensure

#### which/that

#### articles

#### missing nouns

#### unnecessary nouns

#### unicast and multicast

### Style Guide 2.9 – Numbers

Edward Au

[1] At 19.30, replace “(5.850- 5.925 GHz)” with ““(5.850-5.925 GHz)”, i.e., remove the extra space.

[2] At 24.53, replace “5GHz” with “5 GHz”, i.e., add a space.

[3] At 26.29, replace “5GHz” with “5 GHz”, i.e., add a space.

[4] At 93.43, replace “MCS0 or MCS15” with “MCS 0 or MCS 15”.

### Style Guide 2.10 – Maths operators and relations

Edward Au

[1] At 94.37, replace “⋅ 32” with “× 32”.

[2] At 103.44, replace “8 ⋅” with “8 ×”.

### Style Guide 2.11 – Hyphenation

Edward Au

[1] At 55.43, replace “group-addressed transmissions” with “group addressed transmissions”.

[2] At 55.54, replace “group-addressed transmissions” with “group addressed transmissions”.

[3] At 109.57, replace “the average power per-subcarrier” with “the average power per subcarrier”.

### Style Guide 2.12 – References to SAP primitives

Peter Ecclesine

No issues noted.

### Style Guide 2.13 – References to the contents of a field/subfield

Emily Qi

47.19: change “ with the Discovery Mode field equal to 1” to “ with the Discovery Mode field set to 1”.

47.49: change “If the Discovery Beacon parameter is set to true” to “If the Discovery Beacon parameter is equal to true”.

47.56 and 47.63: change “with the OCB subfield set to 1” to “with the OCB subfield equal to 1”.

48.7 and 48.8: change “with the OCB subfield set” to “with the OCB subfield equal”

65.39, 65.42, 65.45: change “the OCB subfield set to 1” to “the OCB subfield equal to 1” .

121.13, change “the RATE field is not set” to “the RATE field is not equal”.

### Style Guide 2.14 – References to MIB variables/attributes

Joseph Levy

### Style Guide 2.15 – Hanging Paragraphs

Emily Qi

112.4 to 112.28: Hanging pragraphs.

add a subclause title, e.g. “32.3.11.1 General” for the hanging pragraphs, and renumber the rest of subclauses.

### Style Guide 2.16 – Abbreviations

Edward Au

[1] At 69.59, replace “single user (SU) MIMO” with “SU MIMO”. In REVme D1.0, SU is already abbreviated.

[2] At 81.54, replace “Cyclic shift diversity (CSD) per spatial stream (SS) insertion” with “CSD per spatial stream insertion”. In REVme D1.0, CSD is already abbreviated. In REVme D1.0, SS is abbreviated as station service.

[3] At 81.60, replace “Inverse discrete Fourier transform (IDFT)” with “IDFT”. In REVme D1.0, IDFT is already abbreviated.

[4] At 81.61, replace “Cyclic shift diversity (CSD) per chain insertion” with “CSD per chain insertion”. In REVme D1.0, CSD is already abbreviated.

[5] At 81.63, replace “Guard interval (GI) insertion” with “GI insertion”. In REVme D1.0, GI is already abbreviated.

[6] At 87.27, replace “Equal modulation (EQM)” with “Equal modulation” because EQM is used only once here.

[7] At 104.14, replace “a low-density parity check (LDPC) code” with “a LDPC code”. In REVme D1.0, LDPC is already abbreviated.

### Style Guide 2.17 – Format for code/pseudocode

Not applicable

### Style guide 3 – Style applicable to specific Clauses

#### Definitions (Clause 3)

Peter Ecclesine

No issues noted.

#### General Description (Clause 4)

Peter Ecclesine

P19 L19 because 11me D1.0 renumbered, the editor instruction to insert the following subclause after 4.3.17 (STA transmission of Data frames outside the context of a BSS (OCB)) will be renumbered. The editor instruction could say “Insert the following subclause immediately after” . . .

#### Frame formats (Clause 9) – shall or may?

Emily Qi

Normative language shall not be used for describing the encodings of fields in clause 9.

38.18: Change “shall be set” to “are set”.

38.21: Change “shall be set” to “is set”.

38.12: Change “shall be set” to “is set”.

38.24 : Change “shall be set” to “is set”. 2 instances.

38.27: Change “shall be set” to “is set”.

38.28: Change “shall be set” to “is set”. 2 instances.

#### SAP interfaces (Clause 6)

Edward Au

#### New top level clauses

Peter Ecclesine

Clauses 31 and 32 added.

P64 L06 delete two empty lines 06, 07, and delete L08 (the period).

P72 L37-38 NGV-MCS, FORMAT is NGV, Integer in the range: should have periods after PPDU.

P73 L33 NGV-LTF Definition(#2029) the definition number #2029 is not highlighted. The amendment has a mixture of highlighted and unhighlighted comment numbers and eventually will be removed before publication (11ax and 11ay) or published as black (11ba-2021 page 89 (#4663), page 93 (#2390). I recommend removal of WG comment numbers from the draft before SA ballot begins.

P77 L05 Figures 32-1, 32-2 and 32-3. The second sentence of 32.2.5.1 General asserts these figures are normative – “The MAC interfaces to the PHYs via … are shown in Figure …”.

IEEE Std 802.11-2020 has similar VHT Figures 21-1, 21-2 and 21-3, while clauses 17 OFDM and 19 HT do not.

Our editors practice says do not reference clause numbers in Figures, it is very hard to maintain. Take a decision on these three NGV clause 32 figures.

P114 L01 32.3.11.3 Nonadjacent channel rejection paragraph text has incorrect spacing.

P141 L14 the editor instructions (P14 L38) do not include ‘Add” change, delete, insert, and replace. Revise.

#### Annex A – Bibliography

Not applicable. There are neither normative nor informative references.

#### Annex B – PICS

Edward Au

[1] At 132.9, please prepend \* to NGVM4.2 because it is cited by NGVP4.3.

[2] At 132.58, what is NGV1.1? I can find only NGVM1.1, NGVP1.1, and NVGE1.1. If It is NVGP1.1, please also prepend \* to NGVP1.1 in 132.24.

[3] At 133.3, what is NGV1.2? I can find only NGVM1.2, NGVP1.2, and NVGE1.2. If It is NVGP1.2, please also prepend \* to NGVP1.2 in 132.30.

[4] At 133.26, both “NGVE1.1” and “NGVE1.2” are defined but their parent, NGVE1, is missing.

#### Annex G – Frame exchange sequences

## ANA

Check for correct use of numbers against database.

Check names against database (update database if names have changed).

Robert Stacey

|  |  |  |  |
| --- | --- | --- | --- |
| **Resource** | **Value** | **Name** | **Status** |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

Additional Actions:

## MIB

Conformance to 09/533r1 and 15/355r13 – Joseph Levy

### Detailed proposed changes

# Collateral findings

# IEEE-SA MEC

At the time of writing this report, the IEEE-SA mandatory editorial coordination (MEC) is ongoing. When complete, the findings will be added to this report.

|  |
| --- |
|  |