IEEE P802.11
Wireless LANs

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| 802.11IEEE P802.11bd/D3.0 Mandatory Draft Review (MDR) Report |
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**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

R3: Added the initial feedback from TGbd editors. It contains comments from Peter, Yongho, Edward, and Carol Ansley.

R4: Added the initial feedback from TGbd editors. It contains comments from Emily

R5: fixed issues with revisioning clash (Yujin/Robert separately edited from r1). Some additions after review on the 1/17/2022 editors meeting.

R6: ANA findings added.

R7: pending item and technical comments updated by TGbd editor.

R8: typo and pending updated by TGbd editor after 11bd teleconference call on 02/08/2022.

R9: Corrected typo: 126 for dot11PhyNGVComplianceGroup and 125 for dot11NGVComplianceGroup

R10: Editorial updates in 2.1.19.7 (Annex B – PICS) and 2.1.16 Style Guide 2.15 (Hanging Paragraphs)

R11: Editorial updates in 2.1.16 Style Guide 2.15 (Hanging Paragraphs)

# 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 TGbd.

## 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**”.**

[11bd Editor 1/17/2022] pending. same comment in 2.1.7 Style Guide 2.6 – Capitalization. 11bd refers 12.12.3.2 PASN Frame Construction and Processing in 11az D4.0 which uses the capital letter in the title.

[11bd Editor 2/07/2022] accepted.

### Style Guide 2.2 – true/false

Carol Ansley

No findings.

### Style Guide 2.3 – “is set to”

Carol Ansley

Page 17.27 – should be “with the Individual/Group bit equal to 1.”

Page 32.13 – should be “with result code equal to SUCCESS.”

Page 38.62 – should be “If all bits of the A-BFT Responder Address subfield are equal to 1 and the OCB subfield is equal to 1, any STA…”

Page 47.49 – should be “If the Discovery Beacon parameter is equal to true, the STA…”

Page 47.53 – should be “If the Discovery Beacon parameter is equal to false, the DMG STA…”

Page 47.56 – should be “When the STA receives one or more SSW frames with the OCB subfield equal to 1 during…”

Page 48.7 – should be “When the STA completes SLS with a peer STA which transmitted an SSW frame with the OCB subfield equal to 1 or a DMG Beacon frame with the OCB subfield equal to 1, and the address…”

Page 49.2 – should be “… in which the Discovery beacon parameter is equal to true in the MLME-DMG-OCB-START.request…”

Page 59.1 – should be “If the TXVECTOR parameter SCRAMBLER\_RESET is equal to RESET\_SCRAMBLER and …”

Page 65.39 – should be “When a DMG STA for which dot11OCBActivated is true receives a DMG beacon with the OCB subfield equal to 1, the STA may …”

Page 65.41 – should be “…in which the STA received a DMG Beacon frame with the OCB subfield equal to 1, the STA shall…”

Page 65.45 – should be “…that receives a DMG Beacon frame with the OCB subfield equal to 1 has successfully…”

Page 121.14 – should be “… or the RATE field is not equal to 3 Mb/s, …”

[11bd Editor 1/17/2022] all the comments are accepted.

### 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?

[11bd Editor 1/17/2022] pending. Need to discussion with the author.

[11bd Editor 2/07/2022] accepted after discussion with the author.

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

[11bd Editor 1/17/2022] pending. 11bd refers 11-2020 to use same with element

[11bd Editor 2/07/2022] based on the comment during the Editor’s meeting, rejected eventually.



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

[11bd Editor 1/17/2022] pending. 11bd refers 11-2020 to use same with element

[11bd Editor 2/07/2022] based on the comment during the Editor’s meeting, rejected eventually.

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

[11bd Editor 1/17/2022] pending. 11bd refers 11-2020 to use same with element

[11bd Editor 2/07/2022] based on the comment during the Editor’s meeting, rejected eventually.

[Robert: I think we should be cautious about changing the term element in the context of a matrix since we have a lot of historic precedence and changing the term might be confusing.]

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

[11bd Editor 1/17/2022] the comment is accepted. The same comment in LB259 was submitted.

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

[11bd Editor 1/17/2022] 11bd reuses the Table 9-322h23fb below in 11az draft D4.0

[11bd Editor 1/17/2022] comment resolved without any changes.



#### 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.

[11bd Editor 1/17/2022] accepted. The same comment in LB259 was submitted.

[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.

[11bd Editor 1/17/2022] pending. 11bd refere 12.12.3.2 PASN Frame Construction and Processing in 11az D4.0 which uses the capital letter in the title.

[11bd Editor 2/07/2022] accepted.



[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.

[11bd Editor 1/17/2022] accepted.

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

[11bd Editor 1/17/2022] accepted.

[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.

[11bd Editor 1/17/2022] accepted. The same comment in LB259 was submitted

[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.

[11bd Editor 1/17/2022] accepted

[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.

[11bd Editor 1/17/2022] pending. 11bd refere P.3 Differential Distance Computation using Fine Timing Measurement Frames in 11-2020 which uses the capital letter in the title.

[11bd Editor 2/07/2022] accepted.

[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”.

[11bd Editor 1/17/2022] accepted.

[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”.

[11bd Editor 1/17/2022] accepted.

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

[11bd Editor 1/17/2022] accepted. The same comment in LB259 was submitted

[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”.

[11bd Editor 1/17/2022] accepted.

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

[11bd Editor 1/17/2022] accepted.

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

[11bd Editor 1/17/2022] accepted.

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

[11bd Editor 1/17/2022] accepted.

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

[11bd Editor 1/17/2022] accepted.

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

[11bd Editor 1/17/2022] accepted.

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

[11bd Editor 1/17/2022] accepted.

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

[11bd Editor 1/17/2022] accepted.

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

[11bd Editor 1/17/2022] revised. 11bd is under discussed that EDCA Raning should be EDCA based ranging.

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

[11bd Editor 1/17/2022] pending. 11bd reuses the HE Ranging NDP in 11az D4.0.



[11bd Editor 2/07/2022] accepted.

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

[11bd Editor 1/17/2022] accepted.

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

[11bd Editor 1/17/2022] accepted.

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

[11bd Editor 1/17/2022] accepted

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

[11bd Editor 1/17/2022] accepted

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

[11bd Editor 1/17/2022] accepted

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

[11bd Editor 1/17/2022] accepted

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

[11bd Editor 1/17/2022] accepted

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

[11bd Editor 1/17/2022] accepted

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

[11bd Editor 1/17/2022] accepted

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

[11bd Editor 1/17/2022] accepted

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

[11bd Editor 1/17/2022] accepted

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

[11bd Editor 1/17/2022] accepted

[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”.

[11bd Editor 1/17/2022] accepted

[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”.

[11bd Editor 1/17/2022] accepted

[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?

[11bd Editor 1/17/2022] pending. Need to discuss with the author.

[11bd Editor 2/07/2022] revised. After discussion with the author, the changes are following as

After checking the different Drafts of 11az D1.0, D2.0, D3.0, and D4.0, it turned out that all have been subfields in the Ranging Parameters field of the Ranging Parameters element in D1.0, D2.0, and D3.0. In D4.0, the subfields Secure LTF Req, Secure LTF Support, Device Class, Full Bandwidth UL MU-MIMO have been removed from the Ranging Parameters field of the Ranging Parameters element (see redline to D3.0 and resolutions in [11-21/0307r3](https://mentor.ieee.org/802.11/dcn/21/11-21-0307-03-00az-comment-resolution-lb253-parameters.docx) and [11-21/0519r3](https://mentor.ieee.org/802.11/dcn/21/11-21-0519-03-00az-comment-resolution-lb253-parameters-part-3.docx)).

Update the paragraph as follows:

For ranging in the 5.9 GHz band, in the Ranging Parameters element included in the IFTMR frame:
• Status indication subfield and V~~v~~alue subfield are~~is~~ reserved. ~~• Secure LTF Req Secure LTF Support is set to 0.
• Device Class field is reserved.
• Full BW UL MU-MIMO field is reserved.~~• Max R2I STS > 80 MHz subfield is reserved.
• Max I2R STS > 80 MHz subfield is reserved.

• BSS Color Information subfield is reserved.

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

[11bd Editor 1/17/2022] accepted

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

[11bd Editor 1/17/2022] accepted

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

[11bd Editor 1/17/2022] accepted

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

[11bd Editor 1/17/2022] accepted

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

[11bd Editor 1/17/2022] accepted

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

[11bd Editor 1/17/2022] accepted

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

[11bd Editor 1/17/2022] accepted

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

[11bd Editor 1/17/2022] accepted

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

[11bd Editor 1/17/2022] accepted

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

[11bd Editor 1/17/2022] accepted

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

[11bd Editor 1/17/2022] accepted

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

[11bd Editor 1/17/2022] accepted

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

[11bd Editor 1/17/2022] accepted

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.

[11bd Editor 1/17/2022] accepted. The same comment in LB259 was submitted.

[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.

[11bd Editor 1/17/2022] accepted. The same comment in LB259 was submitted.

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

[11bd Editor 1/17/2022] accepted.

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

[11bd Editor 1/17/2022] accepted.

### 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.

[11bd Editor 1/17/2022] pending. Technical comment. Need to discuss with the author

[Robert: Agree it is a technical comment. What is “packet reception success” in this context? CRC valid? Something else? Figure it out and chose an appropriate term to replace “packet”]

[11bd Editor 2/07/2022] revised. After discussion with the author, the modification is following as

Searched 11me, the author didn’t see the word of “success rate”, maybe “reliability” is more appropriate. As this is MAC section, “packet” can be replaced with “frame”.

“The NON\_NGV\_10 repetition transmission mode supports OCB broadcast service to both NGV STAs and non-NGV STAs with improved ~~packet~~ frame reception ~~success rate~~ reliability.”

[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.

[11bd Editor 1/17/2022] pending. Technical comment. Need to discuss with the author

[Robert: “frame” is synonymous with “MPDU”, so NDP frames is inherently contradictory.]

[11bd Editor 2/07/2022] revised. After discussion with the author, the modification is following as

Replace “NGV Ranging NDP frames” with “NGV ranging NDP”.

Additionally found the 5 locations at P51L18, P141L28, P141L29 twice, and P142L1

### 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”.

[11bd Editor 1/17/2022] all comments accepted.

### 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 ×”.

[11bd Editor 1/17/2022] all comments accepted.

### 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”.

[11bd Editor 1/17/2022] all comments accepted.

### Style Guide 2.12 – References to SAP primitives

Peter Eccelsine

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”.

[11bd Editor 1/17/2022] all comments are accepted.

### 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.

[11bd Editor 1/17/2022] Accepted.

[11bd Editor 2/08/2022] pending. Check other locations and cross reference

At P78L8 in Figure Figure 32-3 (PHY-CONFIG and CCA interaction with Clause 17 (Orthogonal frequency multiplexing (OFDM)) and Clause 32 (Next Generation V2X (NGV) PHY specification), Clause 32.3.11.5 should be updated to Clause 32.3.11.6. For the rest, the cross reference will be automatically updated.

[11bd Editor 2/15/2022] pending. Considering the clause numbers not automatically updated, while this is one of action times, as of now, temperally make it simple as much as possible. Since the purpose of this figure is to show the interaction between Clause 17 and Clause 32, replacing Clause 32.3.11.5 with Clause 32 does not cause any ambiguity.

[11bd Editor 2/28/2022] resolved. Considering the clause numbers not automatically updated, while this is one of action times, as of now, temperally make it simple as much as possible. Since the purpose of this figure is to show the interaction between Clause 17 and Clause 32, replacing Clause 32.3.11.5 with Clause 32 does not cause any ambiguity



### 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.

[11bd Editor 1/17/2022] all comments accepted.

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

Not applicable

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

#### Definitions (Clause 3)

Peter Eccelsine

No issues noted.

#### General Description (Clause 4)

Peter Eccelsine

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” . . .

[11bd Editor 1/17/2022] accepted.

#### 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.

[11bd Editor 1/17/2022] accepted. Some are same comments in 2.1.4 Style Guide 2.3 – “is set to”

[Robert: This looks like behavioral text: move to Clause 31.]

[11bd Editor 2/07/2022] accepted for comments both (Emily and Robert) 22/07r7 has been approved for this modification.

#### SAP interfaces (Clause 6)

Carol Ansley

Page 32.58 – should be “MAC address” under Type in table

Page 33.50 – should be “MAC address” under Type in table

[11bd Editor 1/17/2022] all comments accepted.

#### New top level clauses

Peter Eccelsine

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.

[11bd Editor 1/17/2022] accepted.

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.

[11bd Editor 1/17/2022] accepted. All comment IDs will be removed before SA ballot begins.

At P73L33,



At P99L29,



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.

 [11bd Editor 1/17/2022] pending. Just deleting the clause numbers from Figures might cause confusing. Need to discuss with the author first.

[For Figures 32-1, 32-2, 32-3 where the figure is graphically showing the relationship between the clauses, removing clause/subclause numbers is not possible. Robert has an pending action to see if it is feasible to produce a figure with overlayed text that is auto updated. For these figures, no action required. For other figures: avoid cross-references since these are not auto-updated.]

[11bd Editor 2/07/2022] Based on the discussion during Editor’s meeting, rejected.

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

Line-and-a-half spacing (spacing between the lines is incorrect).

[11bd Editor 1/17/2022] pending. Not clear where to find incorrect spacing.

[11bd Editor 2/07/2022] accepted.

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

[11bd Editor 1/17/2022] accepted. Replace “Add” with “Insert” at P141L14 and P141L22.

#### 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.

[11bd Editor 1/17/2022] accepted.

[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.

[11bd Editor 1/17/2022] accepted. The same comment in LB 259 was submitted.

[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.

[11bd Editor 1/17/2022] accepted. The same comment in LB 259 was submitted.

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

[11bd Editor 1/17/2022] pending. Need to discuss with the author.

[11bd Editor 2/07/2022] waiting the response from the author.

[11bd Editor 2/08/2022] revised. Additional updates required. The modification is following as (the highlighteds are proposed texts)

* NGV extended MAC service features

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Item | Feature | References | Status | Support |
|  | Are the following NGV extended MAC service features supported? |  |  |  |
| NGVE1 | NGV extended MAC service features |  |  |  |
| NGVE1.1 | NGV extended MAC service features - MLME; 5.9 GHz Band | 6.3.126 ( Cancel transmissions of MSDUs)6.3.128 (NGV radio environment measurement(#2213)) | CFNGV:M | Yes o No o N/A o |
| NGVE1.2 | NGV extended MAC service features - MLME; DMG | 6.3.127 ( DMG Operation outside the context of a BSS) | CFNGV60:M | Yes o No o N/A o |

#### Annex G – Frame exchange sequences

N/A

## 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** |
| dot11StationConfigEntry | 203 | dot11NGVActivated | OK |
| dot11StationConfigEntry | 204 | dot11RadioEnvironmentMeasurementPeriod | OK |
| dot11Compliances | 25 | dot11NGVComplianceGroup | Compliance groups should be allocated from dot11Groups. This value to be released.Fixed in 11bd MDR. |
| **The following were allocated after the MIB review** |
| dot11StationConfigEntry | 219 | dot11NONNGVRadioEnvironmentSupported | Use for object in draft with this nameFixed in 11bd MDR. |
| dot11StationConfigEntry | 220 | dot11VirtualCSonOCBSecondaryImplemented | Use for object in draft with this nameFixed in 11bd MDR. |
| dot11StationConfigEntry | 221 | dot11StationMeasurementPeriod | Use for object in draft with this nameFixed in 11bd MDR. |
| dot11phy | 37 | dot11PhyNGVTable | Use for object in draft with this nameFixed in 11bd MDR. |
| dot11Groups | 126 | dot11PhyNGVComplianceGroup | Use for object in draft with this nameIn the e-mail, 126 is assigned.Confirmed 126 |
| dot11Groups | 125 | dot11NGVComplianceGroup | Use for object in draft with this nameIn the e-mail, 125 is assigned.Confirmed 125 |
| dot11Compliances | 27 | dot11NGVCompliance | Use for object in draft with this nameFixed in 22/33r2 |
| **The following checks were made to ensure that numbers were not being used without allocation** |
| Element ID Extension 1 |  | Nothing referenced (no edits to Table 9-92) | OK |
| Element IDs |  | Nothing referenced (no edits to Table 9-92) | OK |
| Extended RSN Capabilities, and other security related. |  | Nothing referenced (no edits to Table 9-321 and nothing in Clause 12) | OK |
| Extended Capabilities |  | Nothing referenced (no edits to Table 9-153) | OK |
| Operating classes |  | Nothing referenced (not edits to tables in Annex D) | OK |
| StatusCodes |  | Nothing referenced (no edits to Table 9-50) | OK |
| ReasonCodes |  | Nothing referenced (no edits to Table 9-49) | OK |
| FrameTypes, etc |  | Nothing referenced (no edits to Table-9-1) | OK |
|  |  |  |  |

Additional Actions:

## MIB

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

The compiled MIB is embedded as the following. Please refer the proposed changes in the following section to fix errors.



### Detailed proposed changes

* MIB Detail

Change Dot11StationConfigEntry as follows:

TGbd Editor defines dot11VirtualCSonOCBSecondaryImplemented. The MIB compiling indicates an error because dot11VirtualCSonOCBSecondaryImplemented is not defined in the Annex C. To compile the MIB in a purpose of MDR, I just removed the following sentence.

Dot11StationConfigEntry ::= SEQUENCE(#2068,#2241)

{

 …,

 dot11NONNGVRadioEnvironmentSupported TruthValue,

 dot11NGVActivated TruthValue,

 dot11RadioEnvironmentMeasurementPeriod Unsigned32,

 ~~dot11VirtualCSonOCBSecondaryImplemented TruthValue,~~

 dot11VirtualCSonOCBSecondaryImplemented TruthValue,

 dot11StationMeasurementPeriod Unsigned32

}

[11bd Editor 1/17/2022] Pending. the same comment was submitted and under discussion. Initial proposed change is 11bd spec keep dot11VirtualCSonOCBSecondaryImplemented and the second dot11NGVActivated should be replaced with dot11VirtualCSonOCBSecondaryImplemented.

[11bd Editor 2/07/2022] revised. New text proposal in 22/17r1.

Insert the following definitions in { dot11StationConfigEntry n } order:

TGbd Editor requests the ANA allocation for dot11NONNGVRadioEnvironmentSupported.

dot11NONNGVRadioEnvironmentSupported OBJECT-TYPE(#2068,#2241)

SYNTAX TruthValue

MAX-ACCESS read-write

STATUS current

DESCRIPTION

"This is a control variable. It is written by an external management

entity or the SME. Changes take effect as soon as practical in the implementations.

A non-NGV STA supports the radio environment transmit vector and the radio environment status vector when this attribute is true. This STA also has dot11OCBActivated equal to true."

DEFVAL { false }

::= { dot11StationConfigEntry ~~203~~  219}

[11bd Editor 2/07/2022] revised based on the ANA assignment.

dot11NGVActivated OBJECT-TYPE

 SYNTAX TruthValue

 MAX-ACCESS read-write

 STATUS current

 DESCRIPTION

 "This is a control variable. It is written by an external management entity or the SME. Changes take effect as soon as practical in the implementations. A STA uses the NGV features when this attribute is true. This STA also has dot11OCBActivated equal to true."

 DEFVAL { false }

::= { dot11StationConfigEntry 203}

dot11RadioEnvironmentMeasurementPeriod OBJECT-TYPE

 SYNTAX Unsigned32 (100..1000)

 UNITS "milliseconds"

 MAX-ACCESS read-write

 STATUS current

 DESCRIPTION

 "This is a control variable. It is written by an external management entity or the SME. Changes take effect as soon as practical in the implementations. This attribute indicates the amount of time an NGV STA conducts the radio measurement before reporting its radio environment."

 DEFVAL { 100 }

::= { dot11StationConfigEntry 204}

~~dot11NGVActivated OBJECT-TYPE~~

 ~~SYNTAX TruthValue~~

 ~~MAX-ACCESS read-write~~

 ~~STATUS current~~

 ~~DESCRIPTION~~

 ~~"This is a capability variable. Its value is determined by device capabilities. This attribute indicates that virtual CS operation in the OCB secondary channel is implemented."~~

~~::= { dot11StationConfigEntry <ANA>}~~

dot11VirtualCSonOCBSecondaryImplemented OBJECT-TYPE

 SYNTAX TruthValue

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "This is a capability variable. Its value is determined by device capabilities. This attribute, when true, indicates that virtual CS operation in the OCB secondary channel is implemented."

::= { dot11StationConfigEntry <220>}

[11bd Editor 1/17/2022] Pending. not deleting the second dot11NGVActivated. dot11NGVActivated should be replaced with dot11VirtualCSonOCBSecondaryImplemented.

[11bd Editor 2/07/2022] revised based on ANA assignment and new text proposal in 22/17r1.

TGbd Editor requests the ANA allocation for dot11StationMeasurementPeriod.

dot11StationMeasurementPeriod OBJECT-TYPE

 SYNTAX Unsigned32 (100..1000)

 UNITS ~~“~~"milliseconds~~”~~"

 MAX-ACCESS read-write

 STATUS current

 DESCRIPTION

 "This is a control variable. This attribute indicates the amount of time in millissecond the NGV STA conducts the STA measurement before reporting its radio environment."

 DEFVAL { 1000 }

::= { dot11StationConfigEntry ~~<ANA>~~  221 }

[11bd Editor 2/07/2022] revised based on ANA assignment

Change dot11PHYType as follows:

dot11PHYType OBJECT-TYPE

SYNTAX INTEGER {

 fhss(1),

 dsss(2),

 irbaseband(3),

 ofdm(4),

 hrdsss(5),

 erp(6),

 ht(7)

 dmg(8),

 vht(9),

 tvht(10),

 s1g(11),

 cdmg(12),

 cmmg(13),

 ngv(17)}

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "This is a status variable.

 It is written by the PHY.

 This is an 8-bit integer value that identifies the PHY type supported by the attached PLCP and PMD. Currently defined values and their corresponding PHY types are:

 FHSS 2.4 GHz = 01, DSSS 2.4 GHz = 02, IR Baseband = 03, OFDM = 04, HRDSSS = 05, ERP = 06, HT = 07, DMG = 08, VHT = 09, TVHT = 10, S1G = 11, CDMG = 12, CMMG = 13, NGV = 17"

::= { dot11PhyOperationEntry 1 }

Insert the following after dot11 TVHT Transmit Beamforming Config Table:

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

-- \* dot11 Phy NGV TABLE

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

TGbd Editor requests the ANA allocation for dot11phy of Phy NGV TABLE.

dot11PhyNGVTable OBJECT-TYPE

 SYNTAX SEQUENCE OF Dot11PhyNGVEntry

 MAX-ACCESS not-accessible

 STATUS current

 DESCRIPTION

 "Entry of attributes for dot11PhyNGVTable. Implemented as a table indexed on ifIndex to allow for multiple instances on an Agent."

::= { dot11phy ~~31~~ 37 }

dot11PhyNGVEntry OBJECT-TYPE

 SYNTAX Dot11PhyNGVEntry

 MAX-ACCESS not-accessible

 STATUS current

 DESCRIPTION

 "An entry in dot11PhyNGVEntryTable. ifIndex - Each IEEE Std 802.11 interface is represented by an ifEntry. Interface tables in this MIB module are indexed by ifIndex."

 INDEX {ifIndex}

::= { dot11PhyNGVTable 1 }

TGbd Editor replaces dot11CurrentChannelWidth to dot11NGVCurrentChannelWidth throughout TGbd Draft 3.0.

TGbd Editor replaces dot11CurrentPrimaryChannel to dot11NGVCurrentPrimaryChannel throughout TGbd Draft 3.0.

TGbd Editor replaces dot11CurrentSecondaryChannel to dot11NGVCurrentSecondaryChannel throughout TGbd Draft 3.0.

Dot11PhyNGVEntry ::= SEQUENCE

{

 dot11NGVCurrentChannelWidth INTEGER,

 dot11NGVCurrentPrimaryChannel Unsigned32,

 dot11NGVCurrentSecondaryChannel Unsigned32,

 dot11NGVDCMImplemented TruthValue,

 dot11NGVMidambleRxMaxNSS INTEGER,

 dot11NGVDYN20MAllowed TruthValue~~,~~

}

dot11NGVCurrentChannelWidth OBJECT-TYPE

 SYNTAX INTEGER { cbw10(0), cbw20(1) }

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "This is a status variable.

 Written by the PHY.

 This attribute indicates the operating channel width."

 DEFVAL { cbw10 }

::= { dot11PhyNGVEntry 1 }

dot11NGVCurrentPrimaryChannel OBJECT-TYPE

 SYNTAX Unsigned32

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "This is a status variable.

 It is written by the PHY.

 This attribute indicates the operating channel. If 10/20 MHz OCB is currently in use then this attribute indicates the primary channel."

::= { dot11PhyNGVEntry 2 }

dot11NGVCurrentSecondaryChannel OBJECT-TYPE

 SYNTAX Unsigned32

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "This is a status variable.

 It is written by the PHY.

 This attribute indicates the channel number of the secondary channel. If 10/20 MHz OCB is not currently in use, this attribute value shall be 0."

::= { dot11PhyNGVEntry 3 }

dot11NGVDCMImplemented OBJECT-TYPE

 SYNTAX TruthValue

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "This is a capability variable.

 Its value is determined by device capabilities.

 This attribute, when true, indicates that the non-AP STA implementation supports DCM. This capability is disabled otherwise."

::= { dot11PhyNGVEntry 4 }

dot11NGVMidambleRxMaxNSS OBJECT-TYPE

 SYNTAX INTEGER (0~~,~~..1)

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "This is a capability variable.

 Its value is determined by device capabilities.

 This attribute specifies the maximum number of spatial streams supported for reception when a midamble is present in the Data field, equal to 0 for 1 spatial stream, and equal to 1 for 2 spatial streams."

 DEFVAL { 0 }

::= { dot11PhyNGVEntry 5 }

dot11NGVDYN20MAllowed OBJECT-TYPE

 SYNTAX TruthValue

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "This is a capability variable.

 Its value is determined by device capabilities.

 This attribute, when true, indicates that the NGV STA implementation supports dynamic 20 MHz operation. This capability is disabled otherwise."

::= { dot11PhyNGVEntry ~~5~~ 6}

***Insert the following after "Compliance Statements - WUR":***

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

-- \* Compliance Statements - NGV

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

TGbd Editor please sees the following error message. I list the NGV related MIB variables in dot11StationConfigEntry.

*mibs/IEEE802dot11-MIB:33203: [3] {group-member-invalid} node `dot11StationConfigEntry' is an invalid member of group `dot11NGVComplianceGroup'*

dot11NGVComplianceGroup OBJECT-GROUP

 OBJECTS {

 ~~dot11NGVImplemented~~ dot11NGVActivated,

 dot11RadioEnvironmentMeasurementPeriod,~~.~~

 ~~dot11StationConfigEntry~~

 dot11NONNGVRadioEnvironmentSupported,

 dot11StationMeasurementPeriod }

 STATUS current

 DESCRIPTION

 "Attributes that configure the NGV Group for IEEE Std 802.11."

::= { dot11Groups <125> }

[11bd Editor 2/07/2022] revised based on ANA assignment and 22/33r2

TGbd Editor requests the ANA allocation for dot11PhyNGVComplianceGroup.

dot11PhyNGVComplianceGroup OBJECT-GROUP

 OBJECTS {

 dot11NGVCurrentChannelWidth,

 dot11NGVCurrentPrimaryChannel,

 dot11NGVCurrentSecondaryChannel,

 dot11NGVDCMImplemented,

 dot11NGVMidambleRxMaxNSS,

 dot11NGVDYN20MAllowed }

 STATUS current

 DESCRIPTION

 "Attributes that configure the NGV PHY."

::= { dot11Groups <126> }

[11bd Editor 1/17/2022] pending, for the rest modification, there are some part to be conflicting with the proposed resolution in TGbd task group, and need to discuss with the author.

[11bd Editor 2/07/2022] revised based on ANA assignment and 22/33r2

# 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.

|  |
| --- |
|  |