IEEE P802.11  
Wireless LANs

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| IEEE P802.11bf/D3.0 Mandatory Draft Review (MDR) Report | | | | |
| Date: 2024-03-10 | | | | |
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**Abstract**

This document contains the report of the IEEE P802.11bf D3.0 Mandatory Draft Review.

r0: section headings.

r1: Edward, Emily, Carol, and ANA findings.

r2: Findings from Ross.

r3: Findings from Mark and Claudio.

r4: Actions assigned (marked as [Editor:…]) during editor meeting review 2024-03-05.

r5: Findings from Joseph.

r6: Added MEC report

# Introduction

## Purpose of this document

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

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

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

## Process / references

The MDR process is described in:

* [11-11/615r6](https://mentor.ieee.org/802.11/dcn/11/11-11-0615-06-0000-wg802-11-mec-process.doc) – WG802.11 MEC Process

And references:

* [11-09/1034r21](https://mentor.ieee.org/802.11/dcn/09/11-09-1034-21-0000-802-11-editorial-style-guide.docx) – 802.11 Editorial Style Guide

A setup meeting will be held with and review topics assigned to volunteers. The review comments from the volunteers will be compiled into this document.

## Acknowledgements

The 802.11 technical editors (Robert Stacey and Emily Qi) gratefully acknowledges the work and contribution of the members listed in the authors list.

# Findings

## Style

### Style Gude 2.1 – Frames

#### Style Guide 2.1.1 – Frame Format Figures

Emily

add “format”.

33.13, 33.4: change “STA Info field in a” to “STA Info field format in a”.

36.64, 37.48, 38.30, 39.18: change “User Info field for” to “User Info field format for”.

40.15, 40.57: change “User Info field for” to “User Info field format for”.

45.56: change “Information field format for” to “Information field format for”.

84.59: change formats of Beam Descriptor 1 to Beam Descriptor N with the repeating field description in the style guide 2.1.1.2.

91.13: change formats of Beam Index 1 to Beam Index N with the repeating field description in the style guide 2.1.1.2.

107.15: change formats of Sector Descriptor 1 to Sector Descriptor N with the repeating field description in the style guide 2.1.1.2.

[Editors: accept]

#### Style Guide 2.1.2 – Naming Frames

Emily

No findings.

### Style Guide 2.2 – true/false

Claudio

173.10 Replace “False” with “false”

173.13 Replace “True” with “true”

[Editors: Keep capitalization since used as the first word in a sentence]

### Style Guide 2.3 – “is set to”

Joseph

30.59 – There is no need to state in the table that B31 is “Set to 1”, simply putting the value in the table is adequate and consistent with the 802.11 style. Therefore: replace “Set to 1” with “1”

Note there are many “set to”s in Clause 9, which set the various fields and bits to distinct values depending on the operation of the ranging STA. In my opinion, most of these are behavior and not format and therefore should not be in Clause 9, but in the appropriate MAC or PHY clause. I am also concerned that many of these “set to” requirements are redundantly stated in the MAC and PHY clauses.

141.53 – This is a test of the frame type. Delete “set to”.

142.21 – This is a test of the frame type. Delete “set to”.

142.25 – This is a test of the frame type. Delete “set to”.

142.28 – This is a test of the frame type. Delete “set to”.

142.37 – This is a test of the frame type. Delete “set to”.

145.6 – This is a test of the frame. Replace “set to” with “equal to”

145.12 – This is a test of the frame. Replace “set to” with “equal to”

149.17 – This is a test of the frame. Replace “set to” with “equal to”

155.35 – This is a test of the frame. Replace “set to” with “equal to”

157.3 – This is a test of the frame. Replace “set to” with “equal to”

158.7 – This is a test of the frame. Replace “set to” with “equal to”

159.49 – This is a test of the frame. Replace “set to” with “equal to”

166.20 – The first “set to” is a test and the “shall be equal to” is an assignment, therefore correct to “If the Preferred Responder List field within the SBP Parameters element of the SBP Request frame is equal to 1, the Number of Preferred Responders field shall be set to the number of MAC addresses included in the

Sensing Responder Addresses field.”

167.8 – This text is in a note, and is therefore informative, so no actions should be stated, replace “set to” with “equal to”

167.19 – This is a test of the element in the frame. Replace “set to” with “equal to”

167.27 – This is a test of the element in the frame. Replace “set to” with “equal to”

167.36 – “shall always be set to 0” is no different that “shall be set to 0” – therefore delete “always”.

167.47 – This is a test of the field in a frame. Replace “set to” with “equal to”

167.55 – This is a test of the field in a frame. Replace “set to” with “equal to”

170.14 – This is a test of the field in a frame. Replace “set to” with “equal to”

180.26 – This is a test of the field in a frame. Replace “set to” with “equal to”

181.23 – This is a test of the field in a frame. Replace “set to” with “equal to”

182.6 – This is a test of the field in a frame. Replace “set to” with “equal to”

183.55 – This is a test of the field in a frame. Replace “set to” with “equal to”

185.11 – This is a test of the field in a frame. Replace “set to” with “equal to”

185.32 – This is a test of the field in a frame. Replace “set to” with “equal to”

192.52 = This text is grammatically incorrect. Replace “it may set to” with “it may set the”

195.55 – This is a test of the field in a frame. Replace “set to” with “equal to”

196.39 – This is a test of the field in a frame. Replace “set to” with “equal to”

196.43 – This is a test of the field in a frame. Replace “set to” with “equal to”

196.49 – This is a test of the field in a frame. Replace “set to” with “equal to”

196.55 – This is a test of the field in a frame. Replace “set to” with “equal to”

196.62 – This is a test of the field in a frame. Replace “set to” with “equal to”

197.8 – This is a test of the field in a frame. Replace “set to” with “equal to”

197.51– This is a test of the field in a frame. Replace “set to” with “equal to”

198.2 – This is a test of the field in a frame. Replace “set to” with “equal to”

198.5 – This is a test of the field in a frame. Replace “set to” with “equal to”

198.8 – This is a test of the field in a frame. Replace “set to” with “equal to”

198.10 – This is a test of the field in a frame. Replace “set to” with “equal to”

206.34 – This is a test of the parameter. Replace “set to” with “equal to”

210.30 – This is a test of the parameter. Replace “set to” with “equal to”

166.64 The SBP parameters element is being set to the number of sensing responders, “equal to” should not be used here. Replace “equal to” with “set to”.

197.35 The DMG SBP parameters element is being set to the number of MAC addresses included, “equal to” should not be used here. Replace “equal to” with “set to”.

### Style Guide 2.4 – Information Elements/Subelements

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

Claudio

Throughout the draft, replace “DMG Passive Sensing Beacon Information element” with “DMG Passive Sensing Beacon element”.

[Editors: accept]

#### Style Guide 2.4.2 – Definition Conventions

Mark

No issues found.

#### Style Guide 2.4.3 – Element Inclusion Conventions

Claudio

No findings. Frames that carry the element are not listed as part of the element definition (this issue has been handled during initial LBs). Valid cases of listing frames are present when the element definition depends on the frame it is carried in.

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

Not applicable

### Style Guide 2.6 – Capitalization

Ross

Page 21, line 39, change “Sensing Threshold-based Reporting Trigger frame)” to “Sensing Threshold-Based Reporting Trigger frame)”

Page 24, line 38, change “Sensing Threshold-based Reporting Trigger frame)” to “Sensing Threshold-Based Reporting Trigger frame)”

Page 25, line 31, change “Sensing Threshold-based Reporting Trigger frame)” to “Sensing Threshold-Based Reporting Trigger frame)”

Page 38, line 47, change “Sensing Threshold-based Reporting Trigger frame)” to “Sensing Threshold-Based Reporting Trigger frame)”

Page 38, line 49, change “Sensing Threshold-based Reporting Trigger frame)” to “Sensing Threshold-Based Reporting Trigger frame)”

Page 38, line 53, change “Sensing Threshold-based Reporting Trigger frame)” to “Sensing Threshold-Based Reporting Trigger frame)”

[Editors: Keep as “Theshold-Based” (but capitalize the B)]

Page 42, line 36, change “Num of STAs in Exchange” to “Num Of STAs In Exchange”

Page 42, line 36, change “Num of PPDUs in Exchange” to “Num Of PPDUs In Exchange”

Page 42, line 53, change “Num of Tx Beams in Exchange” to “Num Of Tx Beams In Exchange”

Page 42, line 53, change “Num of Repeat in Exchange” to “Num Of Repeat In Exchange”

Page 42, line 53, change “Num of Absent in Exchange” to “Num Of Absent In Exchange”

Page 43, line 33, change “Num of STAs in Exchange field” to “Num Of STAs In Exchange field”

Page 43, line 37, change “Num of PPDUs in Exchange field” to “Num Of PPDUs In Exchange field”

Page 44, line 14, change “Num of Tx Beams in Exchange” to “Num Of Tx Beams In Exchange”

Page 44, line 14, change “Num of Repeat in Exchange” to “Num Of Repeat In Exchange”

Page 44, line 18, change “Num of Tx Beams in Exchange field” to “Num Of Tx Beams In Exchange field”

Page 44, line 20, change “Num of Tx Beams in Exchange field” to “Num Of Tx Beams In Exchange field”

Page 44, line 26, change “Num of Repeat in Exchange field” to “Num Of Repeat In Exchange field”

Page 44, line 28, change “Num of Repeat in Exchange field” to “Num Of Repeat In Exchange field”

Page 44, line 34, change “Num of Absent in Exchange field” to “Num Of Absent In Exchange field”

[Editors: accept]

Page 55, line 8, change “Sensing Threshold-based Reporting Trigger frame)” to “Sensing Threshold-Based Reporting Trigger frame)”

Page 78, line 56, change “The Threshold-based Reporting field” to “The Threshold-Based Reporting field”.

[Editors: keep “Theshold-Based” with capital B]

Page 68, line 37, change “Collocated DMG sensing AP” to “Collocated DMG Sensing AP”

[Editors: accept]

Page 70, line 1, change “pseudo-static subfield” to “Pseudo-static subfield”.

Note: Pseudo-static is used in Revme D4.0.

Page 70, line 25, change “pseudo-static subfield” to “Pseudo-static subfield”.

[Editors: accept (REVme will eventually capitalize Static)]

Page 79, line 29, change “Number of Sensing Responders” to “Number Of Sensing Responders”.

Page 79, line 29, change “Mandatory Number of Responders” to “Mandatory Number Of Responders”.

Page 79, line 38, change “Number of Preferred Responders” to “Number Of Preferred Responders”

Page 79, line 64, change “Number of Sensing Responders field” to “Number Of Sensing Responders field”.

Page 80, line 1, change “Number of Sensing Responders field” to “Number Of Sensing Responders field”.

Page 80, line 4, change “Mandatory Number of Responders field” to “Mandatory Number Of Responders field”.

Page 80, line 5, change “Mandatory Number of Responders field” to “Mandatory Number Of Responders field”.

Page 80, line 17, change “Number of Preferred Responders field” to “Number Of Preferred Responders field”

Page 80, line 20, change “Number of Preferred Responders field” to “Number Of Preferred Responders field”

Page 80, line 36, change “Number of Sensing Responders field” to “Number Of Sensing Responders field”.

Page 80, line 36, change “Mandatory Number of Responders field” to “Mandatory Number Of Responders field”.

Page 81, line 39, change “Number of Sensing Responders field” to “Number Of Sensing Responders field”.

Page 81, line 42, change “Number of Sensing Responders field” to “Number Of Sensing Responders field”.

Page 81, line 47, change “Mandatory Number of Responders field” to “Mandatory Number Of Responders field”.

Page 80, line 52, change “Number of Preferred Responders field” to “Number Of Preferred Responders field”

Page 82, line 45, change “Maximum Number of TX Directions” to “Maximum Number Of TX Directions”

Page 82, line 45, change “Maximum Number of RX Directions” to “Maximum Number Of RX Directions”

Page 84, line 21, change “Maximum Number of TX Directions” to “Maximum Number Of TX Directions”

Page 82, line 25, change “Maximum Number of RX Directions” to “Maximum Number Of RX Directions”

[Editors: accept]

Page 91, line 34, change “Start of Burst” to “Start Of Burst”

Page 91, line 34, change “Number of Exchanges per Burst” to “Number Of Exchanges Per Burst”.

Page 91, line 44, change “Start of Burst field” to “Start Of Burst field”

Page 92, line 22, change “Number of Exchanges per Burst field” to “Number Of Exchanges Per Burst field”.

Page 93, line 26, change “Total Number of LUT Entries” to “Total Number Of LUT Entries”

Page 93, line 40, change “Total Number of LUT Entries field” to “Total Number Of LUT Entries field”

Page 94, line 9, change “Number of STAs in Exchange” to “Number Of STAs In Exchange”

Page 99, line 18, change “Number of Reflection Fields” to “Number Of Reflection Fields”

Page 100, line 31, change “Number of Reflection Fields field” to “Number Of Reflection Fields field”

Page 102, line 48, change “Number of Targets” to “Number Of Targets”

Page 103, line 44, change “Number of Targets field” to “Number Of Targets field”

Page 106, line 28, change “Number of Sectors” to “Number Of Sectors”.

Page 112, line 26, change “Public Action/Protected Dual of Public Action” to “Public Action/Protected Dual Of Public Action”

[Editors: accept]

Page 112, line 36, change “Public Action/Protected Dual of Public Action field” to “Public Action/Protected Dual Of Public Action field”

Page 113, line 52, change “Public Action/Protected Dual of Public Action” to “Public Action/Protected Dual Of Public Action”

Page 113, line 64, change “Public Action/Protected Dual of Public Action field” to “Public Action/Protected Dual Of Public Action field”

Page 115, line 19, change “Public Action/Protected Dual of Public Action” to “Public Action/Protected Dual Of Public Action”

Page 115, line 27, change “Public Action/Protected Dual of Public Action field” to “Public Action/Protected Dual Of Public Action field”

Page 116, line 22, change “Public Action/Protected Dual of Public Action” to “Public Action/Protected Dual Of Public Action”

Page 116, line 31, change “Public Action/Protected Dual of Public Action field” to “Public Action/Protected Dual Of Public Action field”

Page 116, line 49, change “Public Action/Protected Dual of Public Action” to “Public Action/Protected Dual Of Public Action”

Page 116, line 59, change “Public Action/Protected Dual of Public Action field” to “Public Action/Protected Dual Of Public Action field”

Page 117, line 19, change “Public Action/Protected Dual of Public Action” to “Public Action/Protected Dual Of Public Action”

Page 117, line 38, change “Public Action/Protected Dual of Public Action field” to “Public Action/Protected Dual Of Public Action field”

Page 118, line 35, change “Public Action/Protected Dual of Public Action” to “Public Action/Protected Dual Of Public Action”

Page 118, line 44, change “Public Action/Protected Dual of Public Action field” to “Public Action/Protected Dual Of Public Action field”

[Editors: accept]

Page 129, line 55, change “the DMG Number of Preferred Responders field” to “the DMG Number Of Preferred Responders field”

Page 130, line 1, change “the DMG Number of Preferred Responders field” to “the DMG Number Of Preferred Responders field”

Page 130, line 18, change “the DMG Number of Preferred Responders field” to “the DMG Number Of Preferred Responders field”

Page 132, line 49, change “the DMG Number of Preferred Responders field” to “the DMG Number Of Preferred Responders field”

Page 132, line 55, change “the DMG Number of Preferred Responders field” to “the DMG Number Of Preferred Responders field”

[Editors: accept]

Page 135, line 18, change “Protected Dual of Public Action field” to “Protected Dual Of Public Action field”

[Editors: accept]

Page 142, line 28, change “The Threshold-based Reporting field” to “The Threshold-Based Reporting field”.

Page 157, line 5, change “Sensing Threshold-based Reporting Trigger frame)” to “Sensing Threshold-Based Reporting Trigger frame)”

Page 157, line 9, change “Sensing Threshold-based Reporting Trigger frame)” to “Sensing Threshold-Based Reporting Trigger frame)”

[Editors: keep “Threshold-Based, but capitalize the B]

Page 165, line 44, change “Mandatory Number of Responders field” to “Mandatory Number Of Responders field”.

Page 165, line 47, change “Mandatory Number of Responders field” to “Mandatory Number Of Responders field”.

Page 165, line 46, change “Number of Sensing Responders field” to “Number Of Sensing Responders field”.

Page 165, line 50, change “Number of Sensing Responders” to “Number Of Sensing Responders”.

Page 165, line 64, change “Number of Sensing Responders field” to “Number Of Sensing Responders field”.

Page 166, line 30, change “Number of Preferred Responders field” to “Number Of Preferred Responders field”

Page 166, line 51, change “Number of Preferred Responders field” to “Number Of Preferred Responders field”

Page 167, line 2, change “Number of Sensing Responders field” to “Number Of Sensing Responders field”.

Page 170, line 13, change “Mandatory Number of Responders” to “Mandatory Number Of Responders”.

Page 176, line 11, change “Start of Burst field” to “Start Of Burst field”

Page 178, line 57, change “Num of PPDUs in Exchange” to “Num Of PPDUs in Exchange”

Page 178, line 65, change “Num of Absent in Exchange” to “Num Of Absent in Exchange”

Page 181, line 64, change “Num of Tx Beams Per Exchange field” to “Num Of Tx Beams Per Exchange field”

Page 182, line 8, change “Num of Tx Beams in Exchange field” to “Num Of Tx Beams in Exchange field”

Page 182, line 9, change “Num of Repeat in Exchange field” to “Num Of Repeat in Exchange field”

Page 182, line 48, change “Num of STAs in Exchange field” to “Num Of STAs in Exchange field”

Page 184, line 27, change “Num of Tx Beams in Exchange field” to “Num Of Tx Beams in Exchange field”

[Editors: accept]

Page 184, line 28, change “Num of Repeat in Exchange field” to “Num Of Repeat In Exchange field”

Page 185, line 12, change “Num of Tx Beams in Exchange field” to “Num Of Tx Beams In Exchange field”

Page 185, line 13, change “Num of Repeat in Exchange field” to “Num Of Repeat In Exchange field”

Page 185, line 52, change “Num of STAs in Exchange field” to “Num Of STAs In Exchange field”

Page 186, line 63, change “Num of STAs in Exchange field” to “Num Of STAs In Exchange field”

Page 187, line 32, change “Num of Tx Beams in Exchange field” to “Num Of Tx Beams In Exchange field”

Page 187, line 34, change “Num of Repeat in Exchange field” to “Num Of Repeat In Exchange field”

Page 190, line 19, change “Num of Repeat in Exchange field” to “Num Of Repeat In Exchange field”

[Editors: accept]

Page 196, line 29, change “Mandatory Number of Responders field” to “Mandatory Number Of Responders field”.

Page 196, line 31, change “Number of Sensing Responders field” to “Number Of Sensing Responders field”

Page 196, line 32, change “Mandatory Number of Responders field” to “Mandatory Number Of Responders field”.

Page 196, line 36, change “Number of Sensing Responders” to “Number Of Sensing Responders”

Page 197, line 8, change “Number of Preferred Responders field” to “Number Of Preferred Responders field”

Page 197, line 31, change “Number of Preferred Responders field” to “Number Of Preferred Responders field”

Page 197, line 36, change “Number of Sensing Responders field” to “Number Of Sensing Responders field”

Page 197, line 41, change “Number of Sensing Responders field” to “Number Of Sensing Responders field”

Page 198, line44, change “Mandatory Number of Responders” to “Mandatory Number Of Responders”.

[Editors: accept]

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

Ross

No issues found.

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

#### normative, non-normative, ensure

Mark

P181.15/P181.18: Two uses of “will”, where “shall” should be considered.

P188.26/P188.51: Two uses of “will”, where “shall” should be considered.

P191.16: Use of “will”, where “shall” should be considered.

P192.20: Use of “will”, where “shall” should be considered.

P66.38: This NOTE appears to be a normative statement to determine the size of the measured CSI. Make this not a NOTE.

P74.20: This NOTE appears to be a normative restriction. Make this not a NOTE.

P102.8: This NOTE appears to be a normative statement to understand the format of the Reflection field for this case. Make this not a NOTE.

P146.26: Consider whether this NOTE should be a normative statement (not a NOTE, and insert “shall” before “include(s)”).

P159.14: This NOTE appears to be a normative restriction. Make this not a NOTE.

P162.54: Is this requirement in this NOTE (setting aMeasurementSessionExpiry) stated elsewhere? If not, this NOTE should be made into a normative requirement. The NOTE is missing a verb anyway (before “set to”), so either add “are” (if this stays a NOTE), or “shall be” if made into a normative statement.

P80.31: Replace “can” with “may” (unless this option is explicitly stated with a normative verb, somewhere else, which I didn’t find).

P86.48: Replace “can” with “is able to” to avoid ambiguity.

P96.46: Replace “can” with “may be”.

P101.2: Replace “can be” with “is”.

P110.43: Replace “can” with “may” (or “shall”).

P118.21: Replace “can” with “may” (or “shall”).

P131.21: Replace “can” with “may”.

P139.49: Replace “can” with “might”.

P157.61: Replace “can” with “may”.

P163.8: Replace “can” with “might”.

P168.49: Replace “can” with “may”.

P188.16: Replace “can” with “may”.

P207.53: Replace “can generate” with “generates”.

P30.5: Replace “only” with “exactly”. At P30.7, delete “only”.

P31.65: Replace “only” with “single”.

P32.45: Replace “only” with “exactly”.

P36.28: Replace “only” with “exactly”.

P80.46: Replace the “is present only if” phrase with “is present if …, and not present otherwise.” Same thing at P80.53, P82.4, and P82.8.

P148.59: Replace “only” with “exactly”.

P156.4: P80.46: Replace the “shall be only present in” phrase with “shall be present in …”, and add a sentence stating it is not present otherwise.

P159.48: Replace the “only be present if” phrase with “is present if …, and not present otherwise.”

P 166.35: Replace “only if” with “if (and shall be set to 0 otherwise):”. Same thing at P197.13.

[Editors: Caludio to review with TG]

#### Style Guide 2.8.1 – which/that

Carol

p. 30.12 – “~~which~~ that is either an AP …”

[Editors: accept]

p. 32.45 – awkward wording: “…there is only one intended recipient STA, which is an AP, and the RS field is set to the address of that STA.”

recommend: “… the only intended recipient STA is an AP and the RA field is set to the address of that STA.”

[Editor: Claudio review with TG]

p. 52.48 – “, ~~which~~ that involves scaling…”

[Editors: accept]

p.118.48 – “… that was initiated by the SBP procedure, ~~which~~ that is intended to be terminated.”

[Editors: reject (keep which)]

p. 129.46 – “… the DMG SBP request frame ~~which~~ that triggered the response.”

[Editors: accept]

p. 130.20 and 130.25 – “…the actual number for Sensing Responders ~~with~~ to which the DMG Measurement Session ID is assigned…”

Also, 132.50 and 132.56, same text.

[Editors: accept]

p.140.54 – “…to the sensing initiator ~~which~~ that transmitted the Sensing Measurement Request frame”

[Editors: accept]

p. 142.65 – “…shall assign a value in the Min Measurement Interval field ~~which~~ that is not lower than the value…”

[Editors: accept]

p. 146.32 – “… a TB sensing measurement exchange~~, which~~ that consists of a polling phase…”

[Editors: accept]

p. 151.10 - “…shall use the EHT puncturing pattern indicated in the Disabled Subchannel Bitmap subfield of the EHT Operation element ~~which~~ that is one of the non-OFDMA puncturing patterns…”

[Editors: accept]

p. 161.32 – “A sensing responder ~~which~~ that is a sensing receiver shall include…”

[Editors: accept]

p.167 – the NOTEs need to be numbered.

p. 177.2 – “…the transmission of a DMG Sensing Measurement Response frame to the sensing initiator ~~which~~ that transmitted the DMG Sensing Measurement Request frame.”

[Editors: accept]

p. 181.10 – “The sensing initiator shall determine the parameters of the DMG monostatic sensing PPDUs transmitted and received by the sensing responders in a way ~~which~~ that is compatible with the sensing responders’ capabilities…”

[Editors: accept]

p.184.24 – “In Exchange 2, the Duration field of the first DMG Sensing Request frame is set based on Equation (11-8a)~~, which~~ that utilizes the Sounding Duration 1a, Report Duration 1a, Sounding Duration 1b, and Report Duration 1b fields…”

[Editors: keep as “, which”]

p. 188.25 – “In each BRP frame, the First Beam Index field within the BRP Sensing element indicates ~~which is~~ the first beam that is used in the TRN field of the PPDU.”

[Editors: accept]

p. 191.1 – “Each sensing responder responds after a SIFS with a DMG Sensing Report frame ~~which~~ that includes a DMG Sensing Report Control element…”

[Editors: accept]

p. 208.6 – “However, the TRN subfields ~~which are~~ of the EDMG TRN-Unit M are used in a different way,…” \*\* not certain what was meant here. Also previous sentence may have a stray capitalization – Each.

[Editors: accept]

p. 208.43 – “The index corresponds to the STA ID ~~with which~~ that each STA is assigned in the DMG Sensing Request frame at the beginning of the multistatic EDMG sensing measurement exchange.”

[Editors: accept]

#### Style Guide 2.8.2 – articles

#### Style Guide 2.8.3 – missing nouns

Roy

#### Style Guide 2.8.4 – unnecessary nouns

Roy

#### Style Guide 2.8.5 – unicast and multicast

Emily

36.29, 159.36: change “unicast” to “individually addressed”.

[Editors: accept]

### Style Guide 2.9 – Numbers

Edward

[001] 31.13: Replace “in the range of” with “in the range”.

[002] 33.62: Please italicize FVal. Twice appearances.

[003] 36.20: Replace “in the range of” with “in the range”.

[004] 36.21: Replace “in the range of” with “in the range”.

[005] 44.6: Replace “all ‘zeros’” with “all 0s”.

[006] 44.44: Replace “equals to zero” with “equal to 0".

[007] 66.10: Replace “in the range of” with “in the range”.

[008] 66.48: Replace “64624” with “64 624” (i.e., a space is added).

[009] 105.2: Replace “-255dBm” with “-255 dBm” (i.e., a space is added).

[010] 137.20: Please italicize Q.

[011] 138.8: Replace “in the range from” with “in the range”.

[012] 149.23: Replace “by one modulo 8” with “by 1 module 8”.

[013] 161.51: Replace “in the range of” with “in the range”.

[014] 161.64: Replace “in the range of” with “in the range”.

[015] 162.23: Replace “in the range of” with “in the range”.

[016] 162.28: Replace “in the range of” with “in the range”.

[017] 210.9: Replace “10MHz” with “10 MHz” (i.e., a space is added).

[Editors: accept all]

### Style Guide 2.10 – Maths operators and relations

Edward

[001] 59.23: Add a space between “+” and “80” in “40 +80”.

[002] 71.20: Add a space between “10k” and “TU” in “10kTU”.

[003] 71.23: Add a space between “10(k+1)” and “TU” in “10(k+1)TU”.

[Editors: accept]

[004] 71.27: What is (9-3ca)?

[Editors: this is an equation number. Needs to be updated to number used in REVme]

[005] 130.6: Replace “less or equal” with “less than or equal”.

[Editors: accept]

[006] 182.46: Replace “In Equation (11-8a)” with “where”.

[Editors: accept. An equation is following by “where,” to introduce the sub-variable definitions. In FrameMaker use the “variable list” paragraph style for the variable list.]

[007] 185.43: Is it equation (11-8b) rather than equation (11-9b)?

[Editors: accept (appears to be a numbering error)]

[008] 185.50: Replace “In Equation (11-9b)” with “where”.

[Editors: accept, see comment above]

[009] 189.5: Add a space before and after the equality sign.

[010] 189.6: Add a space before and after the equality sign.

[Editors: accept]

Via email:

In addition to my findings sent on January 20, I forgot to mention that it is great if the instances of "-: be replaced by endash when the numbers are involved.  I know it may be a significant update but it is what we have been doing so far (especially in REVm).

[Editors: accept]

### Style Guide 2.11 – Hyphenation

Edward

[001] 24.22: Replace “threshold-based” with “threshold based”.

[002] 24.49: Replace “threshold-based” with “threshold based”.

[003] 26.62: Replace “threshold-based” with “threshold based”.

[004] 35.11: Replace “Sensing Threshold-based Reporting” with “Sensing Threshold Based Reporting”.

[005] 35.27: Replace “Sensing Threshold-based Reporting Trigger frame” with “Sensing Threshold Based Reporting Trigger frames”.

[006] 36.5: Replace “Sensing Threshold-based Reporting” with “Sensing Threshold Based Reporting”.

[007] 38.47: Replace “Sensing Threshold-based Reporting” with “Sensing Threshold Based Reporting”.

[008] 38.49: Replace “Sensing Threshold-based Reporting” with “Sensing Threshold Based Reporting”.

[009] 38.53: Replace “Sensing Threshold-based Reporting” with “Sensing Threshold Based Reporting”.

[010] 43.63: Replace “non-zero” with “nonzero”.

[011] 44.2: Replace “non-zero” with “nonzero”.

[012] 55.6: Replace “Sensing Threshold-based Reporting” with “Sensing Threshold Based Reporting”.

[013] 83.51: Replace “two-dimension” with “two dimension range”.

[014] 83.55: Replace “three-dimension” with “three dimension”.

[015] 83.62: Replace “two-dimensional” with “two dimensional”.

[016] 84.1: Replace “four-dimension” with “four dimension”

[017] 91.33: Replace “Inter-Burst Interval” with “Inter Burst Interval”.

[018] 91.47: Replace “Inter-Burst Interval field” with “Inter Burst Interval field”.

[019] 91.51: Replace “Inter-Burst Interval field” with “Inter Burst Interval field”.

[020] 104.1: Replace “non-zero” with “nonzero”.

[021] 104.2: Replace “Target Index of zero” with “Target Index of 0”.

[022] 136.50: Replace “non-conflicting” with “nonconflicting”.

[023] 147.12: Replace “threshold-based” with “threshold based”.

[024] 147.16: Replace “threshold-based” with “threshold based”.

[025] 155.23: Replace “threshold-based” with “threshold based”.

[026] 156.1: Replace “threshold-based” with “threshold based”.

[027] 156.3: Replace “threshold-based” with “threshold based”. Twice appearances.

[028] 156.9: Replace “threshold-based” with “threshold based”.

[029] 156.19: Replace “threshold-based” with “threshold based”.

[030] 156.50: Replace “implementation-dependent” with “implementation dependent”.

[031] 156.53: Replace “implementation-dependent” with “implementation dependent”.

[032] 157.9: Replace “Sensing Threshold-based Reporting Trigger Frame” with “Sensing Threshold Based Reporting Trigger frame”.

[033] 157.24: Replace “threshold-based” with “threshold based”.

[034] 157.28: Replace “threshold-based” with “threshold based”.

[035] 157.34: Replace “threshold-based” with “threshold based”.

[036] 160.62: Replace “non-reserved” with “nonreserved”.

[Editors: accept]

[037] 163.13: Replace “re-establish” with “reestablish”.

[Editors: accept]

[038] 164.1: Replace “timing-related” with “timing related”.

[039] 164.5: Replace “timing-related” with “timing related”.

[Editors: accept]

[040] 170.26: Replace “re-establish” with “reestablish”.

[Editors: accept]

[041] 171.46: Replace “intra-burst and inter-burst intervals” with “intra burst and inter burst intervals”.

[042] 171.48: Replace “inter-burst and intra-burst” with “inter burst and intra burst”.

[043] 171.62: Replace “intra-burst interval” with “intra burst interval”.

[044] 171.62: Replace “inter-burst interval” with “inter burst interval”.

[045] 171.65: Replace “intra-burst interval” with “intra burst interval”.

[046] 171.65: Replace “inter-burst interval” with “inter burst interval”.

[047] 172.27: Replace “inter-burst interval” with “inter burst interval”.

[048] 172.29: Replace “intra-burst interval” with “intra burst interval”.

[052] 174.43: Replace “inter-burst and intra-burst” with “inter burst and intra burst”.

[053] 178.19: Replace “Intra-Burst” with “Intra Burst”.

[054] 178.27: Replace “Intra-Burst” with “Intra Burst”.

[055] 179.49: Replace “intra-burst and inter-burst intervals” with “intra burst and inter burst intervals”.

[056] 179.49: Replace “(inter-burst and intra-burst)” with “(inter burst and intra burst)”.

[057] 179.58: Replace “intra-burst interval” with “intra burst interval”.

[058] 179.59: Replace “inter-burst interval” with “inter burst interval”.

[Editors: Replace “intra-burst” with “intraburst”]

[049] 173.3: Replace “timing-related” with “timing related”.

[050] 173.17: Replace “timing-related” with “timing related”.

[051] 173.21: Replace “timing-related” with “timing related”.

[Editors: accept]

[059] 192.53: Replace “non-zero” with “nonzero”.

[060] 195.1: Replace “timing-related” with “timing related”.

[061] 195.5: Replace “timing-related” with “timing related”.

[Editors: accept]

[062] 214.18: Replace “threshold-based” with “threshold based”.

[063] 222.12: Replace “Threshold-based” with “Threshold based”.

[Editors: keep hyphen]

[064] 226.4: Replace “pre-association” with “preassociation”.

[065] 227.64: Replace “re-use” with “reuse”.

[Editors: accept]

### Style Guide 2.12 – References to SAP primitives

Also conformance to new clause 6 style

Graham

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

Claudio

53.51 The Sensing Measurement Report Control field is not included in a Sensing Measurement Report Container in which the Invalid Indication field in the Segmentation Control field is ~~equal to~~ 1.

[Editors: accept]

56.61 The Sensing Measurement Report field is not included in a Sensing Measurement Report Container in which the Invalid Indication field in the Segmentation Control field is ~~equal to~~ 1.

[Editors: accept]

“If the Rx\_OP\_Gain\_Type field is ~~equal to~~ 1, the Rx\_OP\_Gain\_Index(1) field contains the Rx OP index for receive chain 1.”

[Editors: accept]

75.43 “The CSI Variation Threshold field value ~~equal to~~ 15 indicates…”

[Editors: accept]

90.61 “If the ~~value in the~~ Report Type field is ~~equal to~~ 3, 5, 6 or 7 (that is, values indicating Doppler measurement) and the DMG Sensing Scheduling subelement is present in DMG Sensing Session element, ~~the value of~~ the Number Beam Indices field is equal to the ~~value of the~~ Number TX Beams Per Exchange field within the DMG Sensing Scheduling subelement.”

[Editors: accept]

129.55 “… the DMG Number of Preferred Responders field is equal to the ~~value of this~~ same field in the DMG SBP request frame that triggered the response; the Sensing Responder Addresses and the Sensing Responder IDs fields are present in the element and *n* is ~~equal to the value in~~ identical to the DMG Number of Preferred Responders field.”

[Editors: accept]

162.15 “If the RX\_OP\_Gain\_Type field is ~~equal to~~ 2, the RF/Analog Gain Index field…” (Same issue in different places in the same page.)

[Editors: accept]

187.53 “DMG sensing measurement exchanges ~~of measurement whose~~ where the Sensing Type field is ~~equal to~~ bistatic are…”

[Editors: accept]

191.56 "If the ~~value of the~~ field is ~~equal to~~ 1, the report is..."

[Editors: accept]

### Style Guide 2.14 – MIB attributes

Mark

No issues found.

### Style Guide 2.15 – Hanging Paragraphs

Emily

No issues found.

### Style Guide 2.16 – Abbreviations

Edward

[001] 18.27: Please expand the abbreviation DMG as per the style applicable to Clause 3.

[002] 18.32: Please expand the abbreviation DMG as per the style applicable to Clause 3.

[003] 18.37: Please expand the abbreviation DMG as per the style applicable to Clause 3.

[004] 18.51: Please expand the abbreviation DMG as per the style applicable to Clause 3.

[005] 18.55: Please expand the abbreviation PPDU as per the style applicable to Clause 3.

[Editors: accept]

[006] 19.16: Please swap the order of appearance of the last 3 abbreviations as USID first, followed by USNM-MFPR, and lastly USNM-MFPR-X20.

[Editors: accept]

[007] 25.36: Replace “sensing initiator to sensing responder (SI2SR)” with “SI2SR”.

[008] 32.8: Replace “unassociated STA identifier (USID)” with “USID”.

[009] 34.55: Replace “sensing responder to sensing responder (SR2SR)” with “SR2SR”.

[010] 40.23: Replace “trigger frame (TF) sounding phase” with “TF sounding phase”.

[011] 70.48: Replace “unassociated sensing negotiation and measurement management frame protection required exempt 20 MHz (USNM-MFPR-X20)” with “USNM-MFPR- X20”.

[012] 70.54: Replace “unassociated sensing negotiation and measurement management frame protection required (USNM-MFPR)” with “USNM-MFPR”.

[Editors: accept]

[013] 85.52: Either replace “Horizontally Polarized (HP)” with “Horizontally Polarized” or add HP as an abbreviation in subclause 3.4.

[014] 85.53: Either replace “Vertically Polarized (VP)” with “Vertically Polarized” or add VP as an abbreviation in subclause 3.4.

[Editors: remove abbreviation]

[015] 85.54: Either replace “Left Hand Circularly Polarized (LHCP)” with “Left Hand Circularly Polarized” or add LHCP as an abbreviation in subclause 3.4.

[016] 85.55: Either replace “Right Hand Circularly Polarized (RHCP)” with “Right Hand Circularly Polarized” or add RHCP as an abbreviation in subclause 3.4.

[Editors: If widely used add to Abbreviations section. Otherwise, keep it local. If the abbreviation itself is not used much then don’t add it.]

[017] 92.52: Replace “lookup table (LUT)” with “LUT”.

[Editors: leave unchanged]

[018] 145.43: Replace “Trigger-based (TB) sensing measurement exchange” with “TB sensing measurement exchange”.

[019] 145.46: Replace “Non-Trigger-based (Non-TB) sensing measurement exchange” with “Non-TB sensing measurement exchange”.

[020] 146.12: Replace “Trigger frame (TF) sounding phase” with “TF sounding phase”.

[021] 157.55: Replace “non-trigger-based” with “non-TB”.

[Editors: accept]

[022] 157.60: Replace “wireless medium” with “WM”.

[Editors: accept]

[023] 161.57: Replace “operating points (OPs)” with “OPs”.

[Editors: expand on first use only]

[024] 161.65: Replace “operating point” with “OP”.

[025] 162.1: Replace “operating point” with “OP”.

[026] 162.6: Replace “operating point” with “OP”.

[027] 162.9: Replace “operating point” with “OP”.

[028] 162.12: Replace “operating point” with “OP”.

[Editors: accept (consider not using an abbreviation here; “operating point” might be more reader friendly)]

[029] 175.26: Replace “H-H and V-V” with “Horizontal-Horizontal and Vertical-Vertical”.

[030] 175.27: Replace “H-V and V-H” with “Horizontal-Vertical and Vertical-Horizontal”.

[031] 192.36: Replace “H-H, or H-V” with “Horizontal-Horizontal and Horizontal-Vertical”.

[Editors: accept but without capitalization]

[032] 196.65: Replace “MEasurement” with “Measurement”.

[033] 203.38: Replace “operating point (OP)” with “OP”.

[034] 203.53: Replace “operating point” with “OP”.

[035] 212.37: Replace “operating point (OP)” with “OP”.

[036] 212.54: Replace “operating point” with “OP”.

[037] 32.6: Replace “least significant bits” with “LSBs”.

[Editors: accept]

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

Not applicable

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

#### Definitions (Clause 3)

Mark

The Definitions clause does use the new style (for searchability) developed in REVme (for example, “directional multi-gigabit (DMG) sensing: DMG sensing”

P18.27: Spell out DMG at first use. Same thing at P18.31, P18.37 and P18.51.

P18.44: Spell out PPDU at first use. Same thing at P18.55.

[Editors: accept]

P18.64: Is “MHz” a special case, and allowed without spelling it out? (It’s not spelled out in REVme.)

[Editors: MHz is a unit and thus not subject to expansion on first use]

#### General Description (Clause 4)

Emily

No findings.

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

Claudio

104.3 A Target Index field value of ~~zero shall be~~ 0 is used if the sensing receiver doesn’t allocate a persistent number to each target.

[Editors: accept]

#### SAP interfaces (Clause 6)

Graham

#### New top level clauses

#### Annex A – Bibliography

Not applicable

#### Annex B – PICS

Edward

[001] 213.35: Add “\*” prior to “CFSSTA” because this PICS is referenced by the others.

[002] 213.41: Add “\*” prior to “CFDSSTA” because this PICS is referenced by the others.

[003] 213.48: Add “\*” prior to “CFDSPASS” because this PICS is referenced by the others.

[004] 214.12: Add “\*” prior to “PC49” because this PICS is referenced by the others.

[005] 214.18: Add “\*” prior to “PC50” because this PICS is referenced by the others.

[006] 214.32: Add “\*” prior to “PC52” because this PICS is referenced by the others.

[007] 214.36: Add “\*” prior to “PC53” because this PICS is referenced by the others.

[008] 214.48: Add “\*” prior to “PC56” because this PICS is referenced by the others.

[009] 214.57: Add “\*” prior to “PC57” because this PICS is referenced by the others.

[010] 215.16: Add “\*” prior to “PC58” because this PICS is referenced by the others.

[011] 215.25: Add “\*” prior to “PC58.1” because this PICS is referenced by the others.

[012] 215.33: Add “\*” prior to “PC58.2” because this PICS is referenced by the others.

[013] 215.42: Add “\*” prior to “PC59” because this PICS is referenced by the others.

[014] 215.61: Add “\*” prior to “PC62” because this PICS is referenced by the others.

[015] 216.3: Add “\*” prior to “PC63” because this PICS is referenced by the others.

[016] 219.3: FR77 is currently used by P802.11be D5.0 as EHT NDP Announcement frame.

[Editors: wait for harmonization of 11be and 11bh]

[017] 222.4: Add “\*” prior to “WS4” because this PICS is referenced by the others.

[018] 222.27: Add “\*” prior to “WS8” because this PICS is referenced by the others.

[Editors: accept all]

#### Annex G – Frame exchange sequences

Not applicable

## ANA

Check for correct use of numbers against database.

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

Robert Stacey

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Page/Line** | **Clause/Table/Figure** | **Notes** | **Allocated value(s)** | **Status** |
| 50.48 | Table 9-81—Category values | Protected Sensing frame | 38 | OK |
| 67.10 | Table 9-130—Element IDs | Use allocated values for the 16 elements in this table. | 117-132 | Use allocated values |
| 111.52 | Table 9-471—Public Action field values | 9 Entries in this table as used allocated. | 51-59 | OK |
| 224.30 | dot11smt | dot11SENSStationConfigTable | 49 | OK |
| 68.25 | Table 9-192—Extended Capabilities field | **Unallocated numbers in use!** | No allocation | Numbers used collide with other usage (11be, REVme). Needs allocation. |
| 70.43 | Table 9-373—Extended RSN Capabilities field | 2 entries; allocation required. | No allocation | Needs allocation. |

Checked, found no issue with the following (list from editors deck):

Frame types and subtypes

Protocol Version subfield: 9.2.4.1.2

Frame types and subtypes: 9.2.4.1.3, Tables 9-1 and 9-2

~~Element ID and Element ID extension: Table 9-128~~

Capability Information field: 9.4.1.4

~~Extended Capabilities: 9.4.2.25, Table 9-190~~

Reason codes: 9.4.1.7, Table 9-77

Status codes: 9.4.1.9, Table 9-78

~~Action frame categories: 9.4.1.11, Table 9-79~~

Authentication algorithm: 9.4.1.1

RSNE: 9.4.2.23

Cypher suites: Table 9-186

AKM suites: Table 9-188

RSN Capabilities: Figure 9-345

~~RSNXE Capabilities: 9.4.2.240, Table 9-365~~

ANQP-element (Info ID): 9.4.5.1, Table 9-412

Neighbor Report subelements: 9.4.2.35, Table 9-210

FTE subelements: 9.4.2.46, Table 9-219

~~Public Action frames: 9.6.7.1, Table 9-450~~

WMN-Notification Types: 9.6.13.29, Table 9-516

Mesh Configuration Active Path: 9.4.2.96.2, Table 9-277

TLV encodings: 9.4.4

Operating classes: Annex E

global, USA, Europe, Japan

MIB objects: Annex C

ieee802dot11, ~~dot11smt~~, dot11phy, dot11mac, dot11StationConfigEntry, dot11OperationEntry, dot11Compliances, dot11Groups

Additional Actions:

The table number at 70.43 is incorrect. Should be Table 9-373.

The table number at 111.52 is incorrect. Should be Table 9-471.

## MIB

Yongho Seok

The compiled MIB is embedded as the following.

[Embed MIB after compilation]

### Detailed proposed changes

* MIB Detail

# Collateral findings

# IEEE-SA MEC

|  |
| --- |
| **From:** Michelle Turner <[m.d.turner@ieee.org](mailto:m.d.turner@ieee.org)>  **Sent:** Monday, March 11, 2024 4:49 PM **To:** Stacey, Robert <[robert.stacey@intel.com](mailto:robert.stacey@intel.com)> **Subject:** MEC for IEEE P802.11bf  Hello Robert,  Please let this email serve as the MEC for IEEE P802.11bf.  Please update the date for the copyright date in the statement and on the footers of each page to 2024. Also, please reconcile the amendment numbering. The title shows it as Amendment 4 and in the introduction sentence, it shows as Amendment 2.   Once the copyright date has been updated the draft can proceed to ballot. Thank you.  --  Michelle Turner Senior Manager, Content Production and Management  IEEE Standards Association e-mail: [m.d.turner@ieee.org](mailto:m.d.turner@ieee.org) PH: +1 732 562 3825; FAX: +1 732 562 1571  Cell: +1 732 540 2992 |