IEEE P802.11  
Wireless LANs

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| 802.11  IEEE P802.11ay D3.1 Mandatory Draft Review (MDR) Report | | | | |
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**Abstract**

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

R0: initial version – section headings with assignments.

R1: Added Solomon and Emily’s findings.

R2: Added Yonho’s findings.

R3: Added Edward’s findings.

R5: Added Mark’s findings in 2.1.16. Added MEC report.

r6: Added Mark’s findings in 2.3. ANA check.

# Introduction

## Purpose of this document

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

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

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

## Process / references

The MDR process is described in:

* 11-11/615r5 – Mandatory Draft Review process

And references:

* 11-09/1034r12 – 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:

* Solomon Trainin
* Yongho Seok
* Emily Qi
* Edward Au
* Mark Hamilton

# Findings

## Style

### Style Gude 2.1 – Frames

Emily

[001] 84.1, change the title of Figure 3 to “Sequence Control field format”

[002] 87.7, change the title of Figure 4 to “BA Information field (EDMG Compressed BlockAck) format”.

[003] 88.4, change the title of Figure 5 to “BA Information field format”.

[004] 88.7, change the title of Figure 6 to “Per-TID Info subfield format”.

[005] 99.5, change the title of Figure 18 to “Beacon Interval Control field format when the Next A-BFT subfield is nonzero”.

[006] 134.8, change the title of Figure 61 to “A-BFT Parameters field format”.

[007] 87.7, “Octets:” row shall be moved below the box.

[008] 109.19, 110.0, change “Octets” to “Bits”.

[008] 109.18, change “Bit” to “Bits”.

[009] 151.5, Is this figure a “octect aligned” or “bit aligned” figure? If it is bit aligned, the bit positions shall be added to the row above the box. If octect aligned, change “Bits” to “Octets”.

[010] 183.12, 183.13: change “Bits” to “Octets”.

[011] Table title should be placed above the table. In following tables, the titles are placed in a blank page:

Table 14: page 139

Table 22: page 155

Table 27: page 171

Table 29: page 175

Table 31: page 178

[012]Remove empty pages: page 78

### Style Guide 2.2 – Naming Frames

Emily

[001] 216.23, change “control frames” to “Control frames”

[002] 459.1, change “this control frame” to “this Control frame”

[003] 224.6, change “ADDBA Request” to “ADDBA Request frame”

### Style Guide 2.2 – true/false

Emily

Looks good. No correction.

### Style Guide 2.3 – “is set to”

Emily

[001]255.33, change “An EDMG STA is SU-MIMO capable if the SU-MIMO Supported field in the STA’s EDMG Capabilities element is set to 1.” To:

“An EDMG STA is SU-MIMO capable if the SU-MIMO Supported field in the STA’s EDMG Capabilities element is equal to 1.”

[002]290.47, change “If the ComeBack Delay field of the MIMO BF Feedback frame received from the initiator is set to a nonzero value, the responder shall send … …” To:

“If the ComeBack Delay field of the MIMO BF Feedback frame received from the initiator is equal to a nonzero value, the responder shall send … …”

[003]291.2, change “If the ComeBack Delay field of the MIMO BF Feedback frame received from the responder is set to a nonzero value, the initiator shall send …”, To:

“If the ComeBack Delay field of 2 the MIMO BF Feedback frame received from the responder is equal to a nonzero value, the initiator shall send …”.

[004]294.17, change “If the ComeBack Delay field of the MIMO BF Feedback frame received from the responder is set to a nonzero value, the initiator shall send a MIMO BF Poll frame ...”, To:

“If the ComeBack Delay field of the MIMO BF Feedback frame received from the responder is equal to a nonzero value, the initiator shall send a MIMO BF Poll frame ...”.

[005]297.26, change “A responder whose corresponding bit in the Group User Mask field of the MIMO Setup Control element included in the received MIMO BF Setup frame is set to 0 can ignore frames transmitted in the following MU-MIMO BF training subphase and MU-MIMO BF feedback subphase.”

To:

“A responder whose corresponding bit in the Group User Mask field of the MIMO Setup Control element included in the received MIMO BF Setup frame is equal to 0 can ignore frames transmitted in the following MU-MIMO BF training subphase and MU-MIMO BF feedback subphase.”

[006]298.28, change “If the ComeBack Delay field of the MIMO BF Feedback frame received from the responder is set to a nonzero value, the initiator shall send a MIMO BF …”

To:

“If the ComeBack Delay field of the MIMO BF Feedback frame received from the responder is equal to a nonzero value, the initiator shall send a MIMO BF …”

[007]300.20, change “A responder whose corresponding bit in the Group User Mask field of the MIMO Setup Control element included in the received MIMO BF Setup frame is set to 0 can ignore the subsequent MU-MIMO BF training subphase.”

To:

“A responder whose corresponding bit in the Group User Mask field of the MIMO Setup Control element included in the received MIMO BF Setup frame is equal to 0 can ignore the subsequent MU-MIMO BF training subphase.”

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

Emily

[001]101.10, in Table 9-94, in the first column, add reference clauses for each of elements.

For example, change “EDMG Capabilities” to “EDMG Capabilities (see 9.4.2.250 EDMG Capabilities element)”.

### Style Guide 2.4.2 – Definition Conventions

Emily

No issue was found.

### Style Guide 2.6 – Removal of functions and features

Emily

It is not relevant to 11ay.

### Style Guide 2.7 – Capitalization

Emily

No issue was found.

### Style Guide 2.8 – Terminology: frame vs packet vs PPDU vs MPDU

Edward

[1] In REVmd/Draft 2.2, “TRN-R subfield”, “BRP-TX PPDU” and “BRP-RX PPDU” are used. Shall IEEE 802.11ay use the same terms with REVmd for the sake of consistency? If so, I would suggest to replace “TRN-R packet”, “BRP-TX packet” and “BRP-RX packet” with “TRN-R subfield”, “BRP-TX PPDU” and “BRP-TX PPDU”, respectively, throughout IEEE 802.11ay Draft 3.1.

[Robert: the term ‘packet’ should be avoided because it is ambiguous in 802.11 for historic reasons – sometimes a frame and sometimes a PPDU. Follow REVmd style.]

### Style Guide 2.9 – Use of verbs & problematic words

#### normative, non-normative, ensure

Edward

[1] Normative verbs shall not appear in informative text. For the note at 309.1, please consider replacing the nomarative verb “may” of “a STA may be able to receive” with a non-normative verb.

[2] Normative verbs shall not appear in informative text. For the note at 345.30, please consider replacing the nomarative verb “may” of “the STA may use these values” with a non-normative verb.

[3] Normative verbs shall not appear in informative text. For the note at 462.1, please consider replacing the nomarative verb “shall” of “the input level shall be corrected” with a non-normative verb.

[4] Please adjust the font size of the note at 593.21. The current font size is the same as that of the main body.

[5] “will” can be used when stating future fact, and using any other tense dilutes the intended meaning. This case should be rare. I suggest replacing “when the device will be ready with feedback” with “when the device is ready with feedback” at 146.7.

[6] “will” can be used when stating future fact, and using any other tense dilutes the intended meaning. This case should be rare. I suggest replacing “when the EDMG STA transmitting the MIMO Feedback Control element will be ready with MIMO BF feedback” with “when the EDMG STA transmitting the MIMO Feedback Control element is ready with MIMO BF feedback” at 151.1.

[7] “will” can be used when stating future fact, and using any other tense dilutes the intended meaning. This case should be rare. I suggest replacing “the previous sector configuration will be reverted to in case sector switching fails” with “the previous sector configuration is reverted to in case sector switching fails” at 168.17.

[8] “will” can be used when stating future fact, and using any other tense dilutes the intended meaning. This case should be rare. I suggest replacing “the recipeint may receive multiple MSDUs with identical SNs which will not be detected” with “the recipeint may receive multiple MSDUs with identical SNs that are not detected” at 224.36.

[9] “will” can be used when stating future fact, and using any other tense dilutes the intended meaning. This case should be rare. I suggest replacing “This indicates that the STA will not be ready with the feedback within BRPIFS from the request” with “This indicates that the STA is not ready with the feedback within BRPIFS from the request” at 227.9.

[10] “will” can be used when stating future fact, and using any other tense dilutes the intended meaning. This case should be rare. I suggest replacing “The value in the Comeback Delay field indicates when the responding STA will be ready” with “The value in the Comeback Delay field indicates when the responding STA is ready” at 227.11.

[11] “will” can be used when stating future fact, and using any other tense dilutes the intended meaning. This case should be rare. I suggest replacing “This indicates that the STA will not be ready with the feedback within BRPIFS from the request. The value in the Comeback Delay field indicates when the responding STA will be ready.” with “This indicates that the STA is not ready with the feedback within BRPIFS from the request. The value in the Comeback Delay field indicates when the responding STA is ready.” at 278.24.

[12] “will” can be used when stating future fact, and using any other tense dilutes the intended meaning. This case should be rare. I suggest replacing “which indicates when the initiator will be ready with SU-MIMO BF feedback for responder link” with “which indicates when the initiator is ready with SU-MIMO BF feedback for responder link” at 290.9.

[13] “will” can be used when stating future fact, and using any other tense dilutes the intended meaning. This case should be rare. I suggest replacing “when the responder will be ready with SU-MIMO BF feedback for initiator link” with “when the responder is ready with SU-MIMO BF feedback for initiator link” at 290.41.

[14] “will” can be used when stating future fact, and using any other tense dilutes the intended meaning. This case should be rare. I suggest replacing “when the responder will be ready with SU-MIMO BF feedback for initiator link” with “when the responder is ready with SU-MIMO BF feedback for initiator link” at 293.11.

[15] “will” can be used when stating future fact, and using any other tense dilutes the intended meaning. This case should be rare. I suggest replacing “which indicates when the responder will be ready with MU-MIMO BF feedback” with “which indicates when the responder is ready with MU-MIMO BF feedback” at 298.9.

[16] “will” can be used when stating future fact, and using any other tense dilutes the intended meaning. This case should be rare. I suggest replacing “If the responder indicates that it will use SU-MIMO in the opposite direction” with “If the responder indicates that it uses SU-MIMO in the opposite direction” at 305.25.

[17] “will” can be used when stating future fact, and using any other tense dilutes the intended meaning. This case should be rare. I suggest replacing “which indicates when the responder will be ready with the Digital BF Feedback” with “which indicates when the responder is ready with the Digital BF Feedback” at 308.19.

[18] “will” can be used when stating future fact, and using any other tense dilutes the intended meaning. This case should be rare. I suggest replacing “and PCP will transmit frames to STA A only after” with “and PCP transmits frames to STA A only after” at 359.2.

[19] “will” can be used when stating future fact, and using any other tense dilutes the intended meaning. This case should be rare. I suggest replacing “Indicates the identification of the MU-MIMO group of STAs that will be involved in the following MU-MIMO transmission” with “Indicates the identification of the MU-MIMO group of STAs that are involved in the following MU-MIMO transmission” at 403.1.

[20] “will” can be used when stating future fact, and using any other tense dilutes the intended meaning. This case should be rare. I suggest replacing “indicates the group of STAs that will be involved in the following MU-MIMO transmission” with “indicates the group of STAs that are involved in the following MU-MIMO transmission” at 456.1.

[21] “May not” is ambiguous. Please replace “may not” of “The protection mechanism may not be used if all PPDUs in the obtained TXOP are 30 transmitted by MCS 0” at 240.30 with another term.

[22] “May not” is ambiguous. Please replace “may not” of “A STA with dot11DMGSyncModeActivated set to false may not include a TDD Synchronization element in Announce and DMG Beacon frames it transmits” at 355.10 with another term.

[23] “May not” is ambiguous. Please replace “may not” of “A STA that receives an Extended Channel Switch Announcement element and EDMG Wide Bandwidth 6 Channel Switch element may or may not choose to perform the specified switch” at 363.6 with another term.

[24] “May not” is ambiguous. Please replace “may not” of “When the Base MCS field is set to 1, the calculated length may not satisfy the requirement for the spoofing 15 error defined in 29.3.3.2.4.1” at 426.15 with another term.

[25] “May not” is ambiguous. Please replace “may not” of “The EDMG preamble and TRN field may not be present in a transmitted SU PPDU depending on particular transmission parameters” at 515.23 with another term.

[26] “May not” is ambiguous. Please replace “may not” of “The TRN field may not be present in a transmitted MU PPDU depending on particular transmission parameters” at 528.12 with another term.

[27] “May not” is ambiguous. Please replace “may not” of “The fields of the PPDU highlighted by dotted line may not be present for some particular parameters configuration” at 576.9 with another term.

[28] “May not” is ambiguous. Please replace “may not” of “The fields of the PPDU highlighted by dotted line may not be present for some particular parameters configuration” at 581.12 with another term.

[29] “Only” is often misused. “Only” is a constraint, which should apply to a condition, not to a verb (unless that verb is part of expressing a condition). Please modify the sentence “The PPDU(s) transmitted following the first PPDU in the sequence do not contain PHY preamble(s), only PHY header(s) and PHY service data unit(s) (PSDU(s))” at 22.38.

[30] “Only” is often misused. “Only” is a constraint, which should apply to a condition, not to a verb (unless that verb is part of expressing a condition). Please modify the sentence “The DMG TRN RX Only Capable subfield indicates if the STA is capable of receiving only DMG TRNs as defined in 20.10.2.2.2” at 127.25.

[31] “Only” is often misused. “Only” is a constraint, which should apply to a condition, not to a verb (unless that verb is part of expressing a condition). Please modify the sentence “Only one value for the Advanced Recipient Memory Length Exponent field can be present in all Block Ack agreements” at 159.29.

[32] “Only” is often misused. “Only” is a constraint, which should apply to a condition, not to a verb (unless that verb is part of expressing a condition). Also “shall … only” often doesn’t go far enough, and worse, is interpreted differently by different readers. Please modify the sentence “The recipient shall only use full-state operation of the scoreboard context control” at 239.16.

[33] “Only” is often misused. “Only” is a constraint, which should apply to a condition, not to a verb (unless that verb is part of expressing a condition). Please modify the sentence “STA 2 did not receive an RD grant, and so it uses the scheduled time slot for the transmission of only a BlockAck frame” at 244.27.

[34] “Only” is often misused. “Only” is a constraint, which should apply to a condition, not to a verb (unless that verb is part of expressing a condition). Please modify the sentence “for example, if an STA has been only using a single transmit chain before the MIMO phase” at 287.17.

[35] “Only” is often misused. “Only” is a constraint, which should apply to a condition, not to a verb (unless that verb is part of expressing a condition). Please modify the sentence “The Multi- STA BlockAck frame shall contain only one Per-TID Info subfield field in the Multi-TID BlockAck frame” at 350.33.

[36] “Only” is often misused. “Only” is a constraint, which should apply to a condition, not to a verb (unless that verb is part of expressing a condition). Please modify the sentence “The TXVECTOR content is filtered out while transferring to the Clause 20 PHY entity to keep the DMG fields only to define the TXVECTOR in accordance with DMG PHY SAP interface (see 20.2.2)” at 410.19.

[37] “Only” is often misused. “Only” is a constraint, which should apply to a condition, not to a verb (unless that verb is part of expressing a condition). Please modify the sentence “All other parameters of the EDMG PHYCONFIG\_VECTOR are filtered out while transferring to the Clause 20 PHY entity to keep the DMG fields only to define the PHYCONFIG\_VECTOR in accordance with the DMG PHY SAP interface” at 413.11.

[38] “Only” is often misused. “Only” is a constraint, which should apply to a condition, not to a verb (unless that verb is part of expressing a condition). Please modify the sentence “takes into account the MU PPDU padding only” at 505.11.

[39] “Only” is often misused. “Only” is a constraint, which should apply to a condition, not to a verb (unless that verb is part of expressing a condition). Please modify the sentence “takes into account MU PPDU padding only” at 559.1.

#### which/that

Edward

[1] At 93.5, replace “For the target responder which has completed beamforming training” wit “For the target responder that has completed beamforming training”.

[2] At 112.3, replace “in channel which includes the primary channel” with “in channel that includes the primary channel”.

[3] At 113.8, replace “to indicate that the BRP frame which contains” with “to indicate that the BRP frame that contains”.

[4] At 117.6, replace “are for the channel which includes” with “are for the channel that includes”.

[5] At 117.9, replace “are for the channel which does not” with “are for the channel that does not”.

[6] At 121.3, replace “This subfield is used to indicate the MCS which was used to collect” with “This subfield is used to indicate the MCS that was used to collect”.

[7] At 131.30, replace “the maximum number of spatial streams which can be decoded is” with “the maximum number of spatial streams that can be decoded is”.

[8] At 143.2, replace “constitute a set which corresponds to” with “constitute a set that corresponds to”.

[9] At 143.24, replace “are for the channel which includes” with “are for the channel that includes”.

[10] At 143.28, replace “for the channel which does not include” with “for the channel that does not include”.

[11] At 145.17, replace “within EDMG TRN-Unit M which are transmitted” with “within EDMG TRN-Unit M that are transmitted”.

[12] At 161.22, replace “the ADDBA Response frame which contained the TID Grouping subfield” with “the ADDBA Response frame that contained the TID Grouping subfield”.

[13] At 209.20, replace “The LBIFS shall be used between two consecutive transmissions which use different DMG antennas but with common RF chain” with “The LBIFS shall be used between two consecutive transmissions that use different DMG antennas but with common RF chain”.

[14] At 211.35, replace “Each Block Ack Schedule frame shall contain the scheduling information for the EDMG STA which is an intended receiver of the A-MPDU” with “Each Block Ack Schedule frame shall contain the scheduling information for the EDMG STA that is an intended receiver of the A-MPDU”.

[15] At 224.36, replace “with identical SNs which will not be detected” with “with identical SNs that will not be detected”.

[16] At 242.22, replace “in the A-MPDU which has the MPDU that granted the RDG” with “in the A-MPDU, which has the MPDU that granted the RDG”.

[17] At 242.24, replace “MPDU which has the MPDU that granted the RDG” with “MPDU, which has the MPDU that granted the RDG”.

[18] At 243.17, replace “with exception of Action no Ack frames which can occur more than once” with “with exception of Action no Ack frames that can occur more than once”.

[19] At 261.12, replace “by an EDMG PCP or EDMG AP which is listening in quasi-omni mode” with “by an EDMG PCP or EDMG AP that is listening in quasi-omni mode”.

[20] At 269.2, replace “The set of DMG antennas which are used for DMG Beacon transmission in a BTI form a DMG antenna group” with “The set of DMG antennas that are used for DMG Beacon transmission in a BTI form a DMG antenna group”.

[21] At 289.24, replace “The TX Antenna Mask field of each EDMG BRP-RX/TX PPDU shall indicate the TX DMG antenna(s) which is being used by the initiator to transmit the EDMG BRP-RX/TX PPDU” with “The TX Antenna Mask field of each EDMG BRP-RX/TX PPDU shall indicate the TX DMG antenna(s), which is being used by the initiator to transmit the EDMG BRP-RX/TX PPDU”.

[22] At 289.43, replace “The TX Antenna Mask field of each EDMG BRP-RX/TX PPDU shall indicate the TX DMG antenna(s) which is being used by the responder to transmit the EDMG BRP-RX/TX PPDU” with “The TX Antenna Mask field of each EDMG BRP-RX/TX PPDU shall indicate the TX DMG antenna(s), which is being used by the responder to transmit the EDMG BRP-RX/TX PPDU”.

[23] At 290.9, replace “shall be set to a nonzero value which indicates when” with “shall be set to a nonzero value, which indicates when”.

[24] At 290.40, replace “shall be set to a nonzero value which indicates when” with “shall be set to a nonzero value, which indicates when”.

[25] At 291.1, replace “send a MIMO BF Feedback frame which contains SU-MIMO BF feedback” with “send a MIMO BF Feedback frame, which contains SU-MIMO BF feedback”.

[26] At 291.6, replace “The responder shall respond with a MIMO BF Feedback frame which contains the SU-MIMO BF feedback” with “The responder shall respond with a MIMO BF Feedback frame, which contains the SU-MIMO BF feedback”.

[27] At 292.43, replace “shall indicate the TX DMG antenna(s) which is being used” with “shall indicate the TX DMG antenna(s), which is being used”.

[28] At 293.10, replace “shall be set to a nonzero value which indicates” with “shall be set to a nonzero value, which indicates”.

[29] At 293.20, replace “a MIMO BF Feedback frame which contains” with “a MIMO BF Feedback frame, which contains”.

[30] At 294.6, replace “an antenna configuration which allows the initiator” with “an antenna configuration, which allows the initiator”.

[31] At 297.42, replace “shall indicate the TX DMG antenna(s) which is being used by” with “shall indicate the TX DMG antenna(s), which is being used by”.

[32] At 298.9, replace “the ComeBack Delay field shall be set to a nonzero value which indicates when the responder” with “the ComeBack Delay field shall be set to a nonzero value, which indicates when the responder”.

[33] At 298.32, replace “a MIMO BF Feedback frame which contains MU-MIMO BF feedback” with “a MIMO BF Feedback frame that contains MU-MIMO BF feedback”.

[34] At 301.1, replace “in a TRN-Unit which need to be transmitted with” with “in a TRN-Unit, which need to be transmitted with”.

[35] At 301.9, replace “TX DMG antenna(s) which is being used by” with “TX DMG antenna(s), which is being used by”.

[36] At 305.21, replace “shall indicate the transmit DMG antenna(s) which is being” with “shall indicate the transmit DMG antenna(s), which is being”.

[37] At 305.41, replace “shall indicate the transmit DMG antenna(s) which is being used” with “shall indicate the transmit DMG antenna(s), which is being used”.

[38] At 306.26, replace “shall indicate the TX DMG antenna(s) which is being used” with “shall indicate the TX DMG antenna(s), which is being used”.

[39] At 308.12, replace “the responder shall transmit a MIMO Feedback frame which contains a Digital BF Feedback element to the initiator” with “the responder shall transmit a MIMO Feedback frame, which contains a Digital BF Feedback element to the initiator”.

[40] At 308.18, replace “shall be set to a nonzero value which indicates” with “shall be set to a nonzero value, which indicates”.

[41] At 310.5, replace “and DMG antenna which was used for transmission” with “and DMG antenna, which was used for transmission”

[42] At 310.27, replace “and DMG antenna which was used” with “and DMG antenna, which was used”.

[43] At 310.30, replace “refers to the SSW frame which was received with best quality” with “refers to the SSW frame that was received with best quality”.

[44] At 310.41, replace “and transmit SSW frames which results in a collision” with “and transmit SSW frames that results in a collision”.

[45] At 310.42, replace “the AP transmits a Sector Ack frame which includes information” with “the AP transmits a Sector Ack frame, which includes information”.

[46] At 311.25, replace “can determine the initiator’s transmit antenna(s) and sector(s) which were received with” with “can determine the initiator’s transmit antenna(s) and sector(s), which were received with”.

[47] At 312.10, replace “is a procedure which makes use of BRP frames” with “is a procedure, which makes use of BRP frames”.

[48] At 326.20, replace “The first path is defined to be the propagation path between TX and RX which is estimated to have shortest time of flight” with “The first path is defined to be the propagation path between TX and RX that is estimated to have shortest time of flight”.

[49] At 396.1, replace “Indicates the number of TRN subfields at the beginning of a TRN-Unit which are transmitted with the same AWV” with “Indicates the number of TRN subfields at the beginning of a TRN-Unit, which are transmitted with the same AWV”.

[50] At 397.1, replace “Indicates the number of consecutive TRN subfields within the EDMG TRN-Unit M of a TRN-Unit which are transmitted using the same AWV” with “Indicates the number of consecutive TRN subfields within the EDMG TRN-Unit M of a TRN-Unit, which are transmitted using the same AWV”

[51] At 409.6, replace “it identifies the center frequency of the 4.32 GHz channel which contains the secondary 2.16 GHz channels only” with “it identifies the center frequency of the 4.32 GHz channel that contains the secondary 2.16 GHz channels only”.

[52] At 432.1, replace “in a TRN-Unit which are transmitted” with “in a TRN-Unit, which are transmitted”.

[53] At 432.1, replace “within EDMG TRN-Unit M which are transmitted” with “within EDMG TRN-Unit M, which are transmitted”.

[54] At 441.3, replace “denotes the center frequency of the 4.32 GHz channel which contains” with “denotes the center frequency of the 4.32 GHz channel that contains”.

[55] At 506.10, replace “the last PPDU which fulfills the spoofing error requirement” with “the last PPDU that fulfills the spoofing error requirement”.

[56] At 543.18, replace “which is scrambler output dependent” with “that is scrambler output dependent”.

[57] At 560.11, replace “the last PPDU which fulfills the spoofing error requirement” with “the last PPDU that fulfills the spoofing error requirement”.

[58] At 583.2, replace “which implies that the PPDU is an EDMG control mode PPDU” with “that implies that the PPDU is an EDMG control mode PPDU”.

[59] At 591.17, replace “which are transmitted using the same AWV” with “that are transmitted using the same AWV”.

#### articles

Edward

[1] At 553.7, replace “The data rate provided by an MCS” with “The data rate provided by a MCS”.

#### missing nouns

Edward

[1] At 61.5, replace “Set of Tx Beam Feedback fields” with “A set of Tx Beam Feedback fields”.

[2] At 67.5, replace “Set of Tx Beam Feedback fields” with “A set of Tx Beam Feedback fields”.

[3] At 89.8, replace “The size of Block Ack Bitmap subfield” with “The size of the Block Ack Bitmap subfield”.

[4] At 93.2, replace “The length of the TDD Beamforming Information field does not change” with “The length of the TDD Beamforming Information field does not change”.

[5] At 114.2, replace “and DBF FBCK REQ field” with “and the DBF FBCK REQ field”.

[6] At 128.4, replace “TRN Power Difference subfield indicates the difference.” with “The TRN Power Difference subfield indicates the difference”.

[7] At 164.5, replace “in Allocation Control field” with “in the Allocation Control field”.

[8] At 168.11, replace “with Set Sector Request subfield equal to 1” with “with the Set Sector Request subfield equal to 1”.

[9] At 168.13, replace “with Set Sector Response subfield equal to 1” with “with the Set Sector Response subfield equal to 1”.

[10] At 172.1, replace “If Feedback Type subfield is 0” with “If the Feedback Type subfield is 0”. There are two appearances.

[11] At 172.1, replace “If Feedback Type subfield is 1” with “If the Feedback Type subfield is 1”. There are two appearances.

[12] At 172.1, replace “When Grouping subfield is 3” with “When the Grouping subfield is 3”. There are two appearances.

[13] At 172.1, replace “When Feedback Type subfield is 0” with “When the Feedback Type subfield is 0”. There are two appearances.

[14] At 189.23, replace “based on TRN field of the PPDU” with “based on the TRN field of the PPDU”.

[15] At 207.1, replace “with Ack Policy field equal to” with “with the Ack Policy field equal to”.

[16] At 211.3, replace “with Bitmap and Access Type Schedule field” with “with the Bitmap and Access Type Schedule field”.

[17] At 211.8, replace “with Bitmap and Access Type Schedule field” with “with the Bitmap and Access Type Schedule field”.

[18] At 224.10, replace “and the sum of MPDU Modulo and MSDU Modulo subfields” with “and the sum of the MPDU Modulo and MSDU Modulo subfields”.

[19] At 225.34, replace “were set to 1 in TID Grouping subfield” with “were set to 1 in the TID Grouping subfield”.

[20] At 226.24, replace “with Ack Policy field set to” with “with the Ack Policy field set to”.

[21] At 230.13, replace “with Bitmap and Access Type Schedule field” with “with the Bitmap and Access Type Schedule field”.

[22] At 230.19, replace “with Bitmap and Access Type Schedule field” with “with the Bitmap and Access Type Schedule field”.

[23] At 232.31, replace “with End of MSDUn subfield equal to 1” with “with the End of MSDUn subfield equal to 1”.

[24] At 232.34, replace “with Start of MSDUn subfield equal to 1” with “with the Start of MSDUn subfield equal to 1”.

[25] At 232.35, replace “with End of MSDUn subfield equal to 1” with “with the End of MSDUn subfield equal to 1”.

[26] At 233.9, replace “with Start of MSDUn subfield equal to 1” with “with the Start of MSDUn subfield equal to 1”.

[27] At 233.9, replace “with End of MSDUn subfield equal” with “with the End of MSDUn subfield equal”.

[28] At 233.33, replace “with Start of MSDUn subfield equal to 1” with “with the Start of MSDUn subfield equal to 1”.

[29] At 233.33, replace “with End of MSDUn subfield equal” with “with the End of MSDUn subfield equal”.

[30] At 234.3, replace “with End of MSDUn subfield” with “with the End of MSDUn subfield”.

[31] At 234.21, replace “with Bitmap and Access Type Schedule field” with “with the Bitmap and Access Type Schedule field”.

[32] At 234.36, replace “in case MSDU Modulo subfield” with “in case the MSDU Modulo subfield”.

[33] At 238.6, replace “with End of MSDUn subfield” with “with the End of MSDUn subfield”.

[34] At 238.10, replace “with Start of MSDUn subfield set to 1” with “with the Start of MSDUn subfield set to 1”.

[35] At 243.17, replace “with Ack Policy field set to” with “with the Ack Policy field set to”.

[36] At 244.28, replace “value of Next PPDU Start Offset subfield” with “value of the Next PPDU Start Offset subfield”.

[37] At 248.20, replace “with Bitmap and Access Type Schedule field equal to TX” with “with the Bitmap and Access Type Schedule field equal to TX”.

[38] At 272.19, replace “in Secondary Channel subfield” with “in the Secondary Channel subfield”.

[39] At 273.5, replace “in Secondary Channel subfield is 0” with “in the Secondary Channel subfield is 0”.

[40] At 273.8, replace “If the A-BFT in Secondary Channel subfield” with “If the A-BFT in the Secondary Channel subfield”.

[41] At 273.14, replace “If the A-BFT in Secondary Channel subfield is set to” with “If the A-BFT in the Secondary Channel subfield is set to”.

[42] At 273.39, replace “in Secondary Channel subfield” with “in the Secondary Channel subfield”.

[43] At 274.41, replace “the value of the N A-BFT in Ant subfield” with “the value of the N A-BFT in the Ant subfield”.

[44] At 275.5, replace “and RA field set to the TA field” with “and the RA field set to the TA field”.

[45] At 281.9, replace “corresponding to TRN subfields received with best quality” with “corresponding to the TRN subfields received with the best quality”.

[46] At 282.7, replace “corresponding to TRN subfields received with best quality” With “corresponding to the TRN subfields received with the best quality”.

[47] At 292.5, replace “send a MIMO BF Setup frame with TA field” with “send a MIMO BF Setup frame with the TA field”.

#### unnecessary nouns

Edward

[1] At 85.1, replace “after a short interframe space (SIFS) period” with “after a short interframe space (SIFS)”.

[2] At 222.4, replace “during the period of PIFS” with “during the PIFS”.

[3] At 222.10, replace “during an interval of PIFS” with “during a PIFS”.

[4] At 222.14, replace “during an interval of PIFS” with “during a PIFS”.

[5] At 222.16, replace “during an interval of PIFS” with “during a PIFS”.

[6] At 222.18, replace “during an interval of PIFS” with “during a PIFS”.

[7] At 222.21, replace “during an interval of PIFS” with “during a PIFS”.

[8] At 222.23, replace “during an interval of PIFS” with “during a PIFS”.

[9] At 222.25, replace “during an interval of PIFS” with “during a PIFS”.

[10] At 222.35, replace “during the PIFS interval” with “during the PIFS”.

[11] At 253.3, replace “for an interval of a PIFS immediately” with “for PIFS immediately”

[12] At 254.14, replace “for a period of PIFS” with “for a PIFS”.

[13] At 254.24, replace “for an interval of PIFS” with “for a PIFS”.

[14] At 254.27, replace “for an interval of PIFS” with “for a PIFS”.

[15] At 257.1, replace “hybrid beamforming training SIFS interval” with “hybrid beamforming training SIFS”.

[16] At 259.41, replace “SIFS interval” with “SIFS”.

[17] At 267.12, replace “at least a SIFS interval” with “at least a SIFS”.

[18] At 267.13, replace “at most a BRPIFS interval” with “at most a BRPIFS”.

[19] At 267.15, replace “at least a SIFS interval and at most a BRPIFS interval” with “at least a SIFS and at most a BRPIFS”.

[20] At 307.22, replace “the responder shall initiate the feedback phase a SIFS duration” with “the responder shall initiate the feedback phase a SIFS”.

[21] At 307.28, replace “a SIFS duration” with “a SIFS”.

[22] At 308.2, replace “an MBIFS duration” with “an MBIFS”.

[23] At 310.26, replace “MBIFS interval after” with “MBIFS after”.

[24] At 324.38, replace “MBIFS interval after” with “MBIFS after”.

[25] At 325.10, replace “MBIFS interval after” with “MBIFS after”.

[26] At 325.12, replace “separated by SIFS interval” with “separated by SIFS”.

[27] At 325.15, replace “an MBIFS interval” with “an MBIFS”.

[28] At 325.32, replace “one EDMG BRP-RX PPDU MBIFS interval” with “one EDMG BRP-RX PPDU MBIFS”.

[29] At 325.37, replace “separated by SIFS interval” with “separated by SIFS”.

[30] At 325.45, replace “by an MBIFS interval” with “by an MBIFS”.

[31] At 326.1, replace “EDMG BRP-RX PPDU MBIFS interval” with “EDMG BRP-RX PPDU MBIFS”.

[32] At 326.5, replace “separated by SIFS interval” with “separated by SIFS”.

[33] At 326.7, replace “MBIFS interval” with “MBIFS”.

[34] At 326.15, replace “an MBIFS interval” with “an MBIFS”.

[35] At 327.19, replace “in a SIFS period” with “in a SIFS”.

[36] At 331.31, replace “separated with SBIFS interval” with “separated with SBIFS”.

[37] At 334.14, replace “within SBIFS interval” with “within SBIFS”.

[38] At 336.29, replace “separated with SBIFS interval” with “separated with SBIFS”.

[39] At 340.8, replace “SBIFS interval” with “SBIFS”.

#### unicast and multicast

Edward

No issues found.

### Style Guide 2.10 – Numbers

Edward

[1] “0s”, “1s” and “2s”, not “zeros”, “ones” and “twos”. At 469.24, replace “are padded with 360 zeros” with “are padded with 360 0s”.

[2] At 481.7, replace “It pads the data with zeros” with “It pads the data with 0s”.

[3] At 488.6, replace “created by concatenating the 440 zeros” with “created by concatenating the 440 0s”.

[4] At 489.5, replace “concatenating the 440 zeros” with “concatenating the 440 0s”.

[5] At 489.11, replace “The padded zeros are discarded” with “The padded 0s are discarded”.

[6] At 499.21, replace “zeros are appended” with “0s are appended”.

[7] At 499.22, replace “zeros are appended” with “0s are appended”.

[8] At 499.25, replace “zeros are appended” with “0s are appended”.

[9] At 499.26, replace “zeros are appended to” with “0s are appended to”.

[10] At 499.29, replace “zeros are appended” with “0s are appended”.

[11] At 499.31, replace “zeros are appended” with “0s are appended”.

[12] At 543.3, replace “a sequence of zeros” with “a sequence of 0s”.

[13] At 544.18, replace “Data is padded with zeros” with “Data is padded with 0s”.

[14] At 551.6, replace “concatenating the 440 zeros to” with “concatenating the 440 0s to”.

[15] At 552.14, replace “concatenating the 440 zeros” with “concatenating the 440 0s”.

[16] At 552.20, replace “The padded zeros are discarded” with “The padded 0s are discarded”.

[17] At 561.11, replace “inserting zeros” with “inserting 0s”.

[18] At 567.14, replace “the padded zeros” with ‘the padded 0s”.

[19] At 568.10, replace “inserting zeros” with “inserting 0s”.

[20] At 568.14, replace “inserting zeros” with “inserting 0s”.

[21] At 568.19, replace “inserting zeros” with “inserting 0s”.

[22] At 568.25, replace “inserting zeros” with “inserting 0s”.

[23] At 488.21, replace “is equal to all ones” with “is equal to all 1s”.

[24] At 489.26, replace “is equal to all ones” with “is equal to all 1s”.

[25] At 498.3, replace “to all ones” with “to all 1s”.

[26] At 498.13, replace “when the all ones” with ‘when the all 1s”.

[27] At 498.20, replace “is equal to all ones” with “is equal to all 1s”.

[28] At 498.23, replace “is equal to all ones” with “is equal to all 1s”.

[29] At 498.26, replace “is equal to all ones” with “is equal to all 1s”.

[30] At 498.29, replace “is equal to all ones” with “is equal to all 1s”.

[31] At 499.1, replace “to all ones” with “to all 1s”.

[32] At 501.30, replace “initialized to all ones” with “initialized to all 1s”.

[33] At 502.8, replace “initialized to all ones” with “initialized to all 1s”.

[34] At 543.14, replace “initialized to all ones” with “initialized to all 1s”.

[35] At 551.22, replace “equal to all ones” with “equal to all 1s”.

[36] At 552.37, replace “is equal to all ones” with “is equal to all 1s”.

[37] At 568.33, replace “initialized to all ones” with “initialized to all 1s”.

[38] Figure 78: Missing the bit positions B0, B1, etc., at the top of the figure.

[39] Figure 102: Missing the bit positions B0, B1, etc., at the top of the figure.

[40] At 385.14, replace “4.32+4.32GHz” with “4.32+4.32 GHz”.

[41] At 424.1, replace “4.32 GHz+ 4.32GHz” with “4.32 GHz+ 4.32 GHz”. There are 4 appearances.

[42] At 425.1, replace “4.32 GHz+ 4.32GHz” with “4.32 GHz+ 4.32 GHz”. There are 2 appearances.

[43] At 440.22, replace “4.32+4.32GHz” with “4.32+4.32 GHz”.

[44] At 440.24, replace “4.32+4.32GHz” with “4.32+4.32 GHz”.

[45] At 440.29, replace “4.32+4.32GHz” with “4.32+4.32 GHz”.

[46] At 440.31, replace “4.32+4.32GHz” with “4.32+4.32 GHz”.

[47] Table 116: Long numbers have embedded spaces to group digits into threes, e.g., replace “12111.00” with “12 111.00”.

[48] Table 117: Long numbers have embedded spaces to group digits into threes, e.g., replace “12639.00

“ with “12 639.00”.

[49] At 439.1, replace “4194303” with “4 194 303”.

### Style Guide 2.11 – Maths operators and relations

Edward

No issues found.

### Style Guide 2.12 – Hyphenation

Edward

[1] At 25.33, replace “non-uniform” with “nonuniform”.

[2] At 26.2, replace “non-overlapping” with “nonoverlapping”.

[3] At 26.22, replace “co-channel” with “cochannel”.

[4] At 26.23, replace “co-channel” with “cochannel”.

[5] At 26.24, replace “co-channel” with “cochannel”.

[6] At 26.27, replace “co-channel” with “cochannel”.

[7] At 26.29, replace “co-channel” with “cochannel”.

[8] At 27.2, replace “co-channel” with “cochannel”.

[9] At 27.4, replace “co-channel” with “cochannel”.

[10] At 95.3, replace “down-counter” with “down counter”.

[11] At 121.34, replace “an 8-bit unsigned” with “an 8 bit unsigned”.

[12] At 122.23, replace “an 8-bit unsigned integer” with “an 8 bit unsigned integer”.

[13] At 131.16, replace “non-uniform” with “nonuniform”.

[14] At 131.19, replace “non-uniform” with “nonuniform”.

[15] At 145.44, replace “down-counter” with “down counter”.

[16] At 148.17, replace “non-reciprocal” with “nonreciprocal”.

[17] At 148.17, replace “Non-reciprocal/Reciprocal MIMO phase field” with ““Nonreciprocal/Reciprocal MIMO phase field”. There are 2 appearances.

[18] At 150.1, replace “non-reciprocal” with “nonreciprocal”.

[19] At 156.1, replace “non-reciprocal” with “nonreciprocal”. There are 2 appearances.

[20] At 159.9, replace “Non-reciprocal” with “Nonreciprocal”.

[21] At 184.10, replace “the 32-bit” with “the 32 bit”.

[22] At 222.34, replace “non-primary” with “nonprimary”.

[23] At 259.30, replace “pre-compensate” with ‘precompensate”.

[24] At 261.15, replace “link-budget parameters” with “link budget parameters”.

[25] At 282.43, replace “re-estimate” with “reestimate”.

[26] At 287.4, replace “non-reciprocal” with “nonreciprocal”.

[27] At 287.5, replace “non-reciprocal” with “nonreciprocal”.

[28] At 287.25, replace “non-reciprocal” with “nonreciprocal”.

[29] At 288.1, replace “non-reciprocal” with “nonreciprocal”.

[30] At 288.7, replace “Non-reciprocal” with “Nonreciprocal”.

[31] At 288.36, replace “Non-reciprocal” with “Nonreciprocal”.

[32] At 292.9, replace “Non-reciprocal” with “Nonreciprocal”.

[33] At 292.27, replace “Non-reciprocal” with “Nonreciprocal”.

[34] At 294.30, replace “non-reciprocal” with “nonreciprocal”.

[35] At 294.38, replace “non-reciprocal” with “nonreciprocal”.

[36] At 295.45, replace “non-reciprocal” with “nonreciprocal”.

[37] At 296.22, replace “non-reciprocal” with “nonreciprocal”.

[38] At 296.23, replace “non-reciprocal” with “nonreciprocal”.

[39] At 296.25, replace “non-reciprocal” with “nonreciprocal”.

[40] At 296.26, replace “non-reciprocal” with “nonreciprocal”.

[41] At 297.13, replace “Non-reciprocal” with “Nonreciprocal”.

[42] At 298.48, replace “Non-reciprocal” with “Nonreciprocal”.

[43] At 299.3, replace “Non-reciprocal” with “Nonreciprocal”.

[44] At 299.5, replace “non-reciprocal” with “nonreciprocal”.

[45] At 299.13, replace “non-reciprocal” with “nonreciprocal”.

[46] At 300.16, replace “Non-reciprocal” with “Nonreciprocal”.

[47] At 301.21, replace “Non-reciprocal” with “Nonreciprocal”.

[48] At 309.12, replace “self-classification” with “self classification”.

[49] At 367.7, replace “time-overlapping” with “time overlapping”.

[50] At 367.9, replace “time-overlapping” with “time overlapping”.

[51] At 368.24, replace “on-demand” with “on demand”.

[52] At 369.5, replace “on-demand” with “on demand”.

[53] At 373.19, replace “feedback-related parameters” with “feedback related parameters”.

[54] At 379.8, replace “co-channel” with “cochannel”.

[55] At 379.10, replace “co-channel” with “cochannel”.

[56] At 379.11, replace “co-channel” with “cochannel”.

[57] At 381.19, replace “co-channel” with “cochannel”.

[58] At 385.13, replace “non-contiguous” with “noncontiguous”.

[59] At 401.1, replace “phased-array antenna” with “phased array antenna”.

[60] At 403.1, replace “non-reciprocal” with “nonreciprocal”.

[61] At 406.1, replace “down-counter” with “down counter”.

[62] At 416.1, replace “Up-sampling parameter” with “Upsampling parameter”.

[63] At 451.1, replace “cyclic-permutation” with “cyclic permutation”.

[64] At 451.3, replace “cyclic-permutation” with “cyclic permutation”.

[65] At 451.9, replace “cyclic-permutation” with “cyclic permutation”.

[66] At 457.1, replace “non-reciprocal” with “nonreciprocal”.

[67] At 461.10, replace “transmit power-on ramp and power-down ramp” with “transmit power on ramp and power down ramp”.

[68] At 462.3, replace “phased-array antenna” with “phased array antenna”.

[69] At 471.7, replace “up-sampling” with “upsampling”.

[70] At 471.8, replace “up-sampling” with “upsampling”.

[71] At 474.16, replace “up-sampling” with “upsampling”.

[72] At 474.17, replace “up-sampling” with “upsampling”.

[73] At 509.5, replace “non-uniform” with “nonuniform”.

### Style Guide 2.13 – References to SAP primitives

Solomon

IEEE P802.11ay/D3.1, April 2019

|  |  |  |
| --- | --- | --- |
| Page.Line | Issue | How to fix |
| 368.2 | no word “primitive” after name of the primitive | add the word “primitive” after the name of the primitive |
| 368.3 | no word “primitive” after name of the primitive | add the word “primitive” after the name of the primitive |
| 368.7 | no word “primitive” after name of the primitive | add the word “primitive” after the name of the primitive |
| 368.9 | no word “primitive” after name of the primitive | add the word “primitive” after the name of the primitive |
| 368.15 | no word “primitive” after name of the primitive | add the word “primitive” after the name of the primitive |
| 368.17 | no word “primitive” after name of the primitive | add the word “primitive” after the name of the primitive |
| 368.19 | no word “primitive” after name of the primitive | add the word “primitive” after the name of the primitive |
| 368.22 | no word “primitive” after name of the primitive | add the word “primitive” after the name of the primitive |
| 371.26 | no word “primitive” after name of the primitive | add the word “primitive” after the name of the primitive |
| 371.31 | no word “primitive” after name of the primitive | add the word “primitive” after the name of the primitive |
| 371.33 | no word “primitive” after name of the primitive | add the word “primitive” after the name of the primitive |
| 371.36 | no word “primitive” after name of the primitive | add the word “primitive” after the name of the primitive |
| 371.44 | no word “primitive” after name of the primitive | add the word “primitive” after the name of the primitive |
| 372.2 | no word “primitive” after name of the primitive | add the word “primitive” after the name of the primitive |
| 372.7 | no word “primitive” after name of the primitive | add the word “primitive” after the name of the primitive |

### Style Guide 2.14 – References to the contents of a field/subfield

Solomon

IEEE P802.11ay/D3.1, April 2019

## Rules defined in 2.13 (References to the contents of a field/subfield) of 11-09-1034-13-0000-802-11-editorial-style-guide indicates that “The use of “value of <field> field” is deprecated” There are a lot of such occurrences in the text. Following the rule, the part “value of” shall be removed.

### Style Guide 2.15 – References to MIB variables/attributes

Mark

At P128.20, replace “the value of dot11EDMGBFGrantLargestNgSupported” with just “dot11EDMGBFGrantLargestNgSupported”.

At P243.1, replace “dot11AMPDUwithMultipleTIDOptionImplemented set to true” with “dot11AMPDUwithMultipleTIDOptionImplemented equal to true”.

At P345.16, replace “dot11ExtendedTPCActivated set to Rx” with “dot11ExtendedTPCActivated equal to Rx”. Same thing at line 20. And, similarly at lines 26, 30, 35 and 37.

At P349.11, replace “dot11AMPDUwithMultipleTIDOptionImplemented set to true” with “dot11AMPDUwithMultipleTIDOptionImplemented equal to true”. Same thing at line 15.

At P354.21, replace “dot11DMGSyncModeActivated set to true” with “dot11DMGSyncModeActivated equal to true”. Similarly, at P355.1, P355.3, P355.5, P355.7, P355.10, and P355.12.

At P362.7, replace “dot11ExtendedTPCActivated defined and with a value different than none” with “dot11ExtendedTPCActivated defined as other than none”.

At P367.34, replace “if the value of both” with “if both”.

### Style Guide 2.16 – Hanging Paragraphs

Solomon

IEEE P802.11ay/D3.1, April 2019

|  |  |  |  |
| --- | --- | --- | --- |
| Subclause | Page.Line | Issue | How to fix |
| **29.4.7.3 EDMG PPDU transmission** | 473.8 | Hanging paragraph | Insert heading **29.4.7.3.1 General** before the paragraph  and re-enumerate all following subclauses |
| **29.5.11.2 Receive requirements** | 534.11 | Single child subclause | re-enumerate |
| **29.6.11.2 Receive requirements** | 575.11 | Single child subclause | re-enumerate |

### Style Guide 2.17 – Abbreviations

Solomon

IEEE P802.11ay/D3.1, April 2019

“When an abbreviation has been defined, use it”

|  |  |  |  |
| --- | --- | --- | --- |
| Abbreviation | Page.Line | Issue | How to fix |
| DCM | 506.21 | **29.5.9.5.2 Dual carrier modulation (DCM) π/2-BPSK.**  The abbreviation has been defined, but not used in this case | Replace by  **29.5.9.5.2 DCM π/2-BPSK.** |
| EDMG | 25.14, 385.2, 385.5, 740.1 | “Enhanced directional multi-gigabit” is still used | Remove the words “Enhanced directional multi-gigabit” |
| NUC | 25.25, 131.19, 509.5, 509.6, 510.2 | “non-uniform constellation” is still used | Remove the words “non-uniform constellation” |
| SAR | Multiple places | “segmentation and reassembly” is still used | Replace by “SAR” |

### Style Guide 2.18 – Format for code/pseudocode

Solomon

IEEE P802.11ay/D3.1, April 2019

|  |  |  |  |
| --- | --- | --- | --- |
| Subclause | Page | Issue | Comment |
| 10.26.6.7.2 Number of MPDUs per FlowControlByteCountLimit computation | 237 | The  Figure 125 —Algorithm for computation of FlowControlByteCountLimit  looks like pseudocode and the font is not courier as recommended | IEEE P802.11-REVmd/D2.1, February 2019 is not consistent with the requirement |

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

#### Definitions (Clause 3)

Solomon

IEEE P802.11ay/D3.1, April 2019

|  |  |  |  |
| --- | --- | --- | --- |
| Subclause | Page Line | Issue | How to fix |
| **3.2 Definitions specific to IEEE Std 802.11** | P22  L19-L23 | Following the rule “numbers sort in numeric order, e.g. 2 is before 10” all definitions that start with 2.16 shall be before definitions that start with 4.32 and so on. | Change the order |

#### General Description (Clause 4)

Solomon

IEEE P802.11ay/D3.1, April 2019

No issues found

#### Frame formats (Clause 9)

Solomon

IEEE P802.11ay/D3.1, April 2019

|  |  |  |  |
| --- | --- | --- | --- |
| Subclause | Page.Line | Issue | How to fix |
| **9.4.2.275 DMG STA Transceiver Parameters element** | 189.13 – 189.19 | The paragraph is clearly a description of behaviour | Rewrite to avoid using of the words “when” and “should” |
| **9.4.2.142.4 RX Chain Statistics field** | 120.19 – 120.23 | Definition of the measurement is clearly a description of behaviour | Definition of the measurement shall be provided in the clause 11. |
| **9.4.2.142.5 PPDU Statistics field** | 120.30 – 120.34  121.5  121.8 – 121.14 | Definition of the measurement is clearly a description of behaviour | Definition of the measurement shall be provided in the clause 11. |
| **9.4.2.142.6 LDPC Statistics field** | 121.24-121.28  121.30-121.35  121.37-121.40  122.3-122.11 | Definition of the measurement is clearly a description of behaviour | Definition of the measurement shall be provided in the clause 11. |
| **9.4.2.142.7 SC/OFDM Statistics field** | 122.19-122.24  122.27-122.39 | Definition of the measurement is clearly a description of behaviour | Definition of the measurement shall be provided in the clause 11. |

#### SAP interfaces (Clause 6)

Solomon

IEEE P802.11ay/D3.1, April 2019

3.4.1 Presence statements

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Primitive | Parameter | Page.Line | Issue | How to fix |
| MLME-SCAN.request( | Unsolicited Block Ack Extension | 33 | “Optionally present.”  Condition is not specified | Support of the feature should be mention as a condition |
| MLME-ASSOCIATE.request( | Unsolicited Block Ack Extension | 35.16 | “Optionally present.”  Condition is not specified | Support of the feature should be mention as a condition |
| MLME-ASSOCIATE.confirm | Unsolicited Block Ack Extension | 37.1 | “Optionally present.”  Condition is not specified | Support of the feature should be mention as a condition |
| MLME-ASSOCIATE.indication | Unsolicited Block Ack Extension | 38.18 | “Optionally present.”  Condition is not specified | Support of the feature should be mention as a condition |
| MLME-ASSOCIATE.response | Unsolicited Block Ack Extension | 39.27 | “Optionally present.”  Condition is not specified | Support of the feature should be mention as a condition |
| MLME-REASSOCIATE.request | Unsolicited Block Ack Extension | 41.1 | “Optionally present.”  Condition is not specified | Support of the feature should be mention as a condition |
| MLME-REASSOCIATE.confirm | Unsolicited Block Ack Extension | 42.19 | “Optionally present.”  Condition is not specified | Support of the feature should be mention as a condition |
| MLME-REASSOCIATE.indication | Unsolicited Block Ack Extension | 44.1 | “Optionally present.”  Condition is not specified | Support of the feature should be mention as a condition |
| MLME-START.request | Unsolicited Block Ack Extension | 46.2 | “Optionally present.”  Condition is not specified | Support of the feature should be mention as a condition |

3.4.2 Consistency requirements

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Primitive | Parameter | Page.Line | Issue | How to fix |
| MLME-SU-MIMO-BF-TRAINING.confirm | ResultCode | 53.17 | ResultCode =  SUMIMOBFTIMEOUT  undefined | Append to the ResultCode definition |
| MLME-SU-MIMO-BF-TRAINING.indication( | ResultCode | 54.15 | ResultCode =  SUMIMOBFTIMEOUT  undefined | Append to the ResultCode definition |
| MLME-MU-MIMO-BF-TRAINING.confirm( | ResultCode | 56.14 | ResultCode =  MUMIMOBFTIMEOUT  undefined | Append to the ResultCode definition |
| MLME-MU-MIMO-BF-TRAINING.indication( | ResultCode | 57.14 | ResultCode =  MUMIMOBFTIMEOUT  undefined | Append to the ResultCode definition |
| MLME-TDD- SECTOR-SWITCH.confirm (  MLME- SECTOR-SWITCH.indication ( |  | 378.14 | Use of the primitives does not comply with Primitive Patterns requirement Figure 165 —TDD sector switch procedure | Reconstruct the Figure 165 and the related text |

No more issues of the 3.4.3 Primitive Pattern requirement found.

#### New top level clauses

Not applicable

#### Annex A – Bibliography

Not applicable

#### Annex B – PICS

Edward

[1] At 744.1, there are two P5.3.1.1 for different MCSs.

#### Annex G – Frame exchange sequences

Edward

No issues found.

## ANA

Robert

Check for correct use of numbers against database: no issues found

Check names against database (update database if names have changed): no issues found

## MIB

### Conformance to 09/533r1 and 15/355r13 – Mark Hamilton

Change wording of dot11DiscoveryAssistanceActivated from “This attribute, when true, indicates that the station supports discovery assistance procedures” to “This attribute, when true, indicates that the discovery assitance feature is currently operational. This attribute, when false or not present, indicates that the discovery assistance feature is currently not operational.”

Recommendation: Change wording of dot11DMGSyncModeActivated from “This attribute, when true, indicates access to a local source of timing.” to “This attribute, when true, indicates \_that the STA uses\_ ~~access to~~ a local source of timing.”

dot11TDDOptionImplemented should be read-only, described as a capability variable, and replace the “written by” language with “Its value is determined by device capabilities.”

Specific changes:

* Change “MAX-ACCESS” (at P751.20) to “read-only”
* Change “This is a control variable. This is a control variable. It is written by the SME or external management entity. Changes take effect as soon as practical in the implementation.” (at P751.23) to “This is a capability variable. Its value is determined by device capabilities.”

Rename dot11EDMGSTBCImplemented to something that doesn’t imply a TruthValue (it is an INTEGER).

Specific changes:

* Replace “dot11EDMGSTBCImplemented” with “dot11EDMGSTBCType” at P131.28, P753.41, P757.51 and P763.40.

Recommendation: Rename STBC Supported in the PHY Capabilities subelement (of the EDMG Capabilities element), because “Supported” in the other fields implies a capability and a single bit, but this one is a value, with a type of support.

Specific changes:

* Replace “STBC Supported” with “STBC Type” at P130.1 (B19-B20), and P131.28.

dot11EDMGBFGrantRequired should be described as a “primary/secondary variable.”

Specific changes:

* At P759.53, Replace “This is a capability variable. Its value is determined by device capabilities. This attribute indicates Beamforming Grant Required capability." with “This a primary/secondary variable. Its value is determined by device capabilities of the STA when responding to a MIMO setup, to indicate that the MIMO intiator must transmit a Grant frame before initiating MIMO channel access.”

dot11EDMGBFDMGTRNRXOnly should be named “dot11EDMGBFDMGTRNRXOnlyImplemented”.

Specific changes:

* Replace “dot11EDMGBFDMGTRNRXOnly” with “dot11EDMGBFDMGTRNRXOnlyImplemented” at P127.27 and P760.4.

dot11FirstPathTraining should be named “dot11FirstPathTrainingImplemented”

Specific changes:

* Replace “dot11FirstPathTraining” with “dot11FirstPathTrainingImplemented” at P127.29, P759.14, P760.17 and P763.55.

Typo: “dot11EDMGBFDynamicGroupingImplemeneted” is misspelled (extra ‘e’ in Implemented)

Specific changes:

Replace “dot11EDMGBFDynamicGroupingImplemeneted” with “dot11EDMGBFDynamicGroupingImplemented” at P128.24 and P761,13.

### Detailed proposed changes

Yongho

Annex C of TGay Draft 3.1 has been added to Annex C of REVmd D2.1. It is embedded as REVmdD2\_1\_An\_C\_plus\_TGayD3\_1\_An\_C\_old.txt file in the below.

And, the correct MIB file is embedded as REVmdD2\_1\_An\_C\_plus\_TGayD3\_1\_An\_C\_new.txt file in the below.

REVmdD2\_1\_An\_C\_plus\_TGayD3\_1\_An\_C\_diff.txt files shows the different between two files.

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**ACTION ITEM: TGay Editor changes Annex C as the following:**

At P750 L5: dot11ExtendedTPCActivated ~~Integer~~ INTEGER,

At P751 L3: SYNTAX INTEGER { none(0), ~~T~~tx(1), ~~R~~rx(2) }

At P753 L23: dot11EDMGCurrentChannelWidth INTEGER,

At P753 L24: dot11EDMGCurrentChannelCenterFrequencyIndex0 Unsigned32,

At P753 L25: dot11EDMGCurrentChannelCenterFrequencyIndex1 Unsigned32,

At P753 L26: dot11EDMGCurrentPrimaryChannel Unsigned32,

At P753 L27: dot11EDMGPolarizationCapability OCTET~~\_~~STRING,

At P753 L46: dot11EDMGCurrentChannelWidth OBJECT-TYPE

At P754 L8: dot11EDMGCurrentChannelCenterFrequencyIndex0 OBJECT-TYPE

At P754 L22: dot11EDMGCurrentChannelCenterFrequencyIndex1 OBJECT-TYPE

At P754 L36: dot11EDMGCurrentPrimaryChannel OBJECT-TYPE

At P758 L49: ~~D~~dot11EDMGBeamformingConfigEntry OBJECT-TYPE

At P759 L8: ~~d~~Dot11EDMGBeamformingConfigEntry ::=

At P759 L13: dot11EDMGBFDMGTRNRXOnly TruthValue,

At P759 L17: dot11EDMGBFGrantLargestNgSupported ~~INTEGER~~Integer32,

At P759 L18: dot11EDMGBFDynamicGroupingImplemeneted TruthValue

NOTE: TGay Editor check the range of the aBRPminSCblocks value.

At P759 L22: SYNTAX Unsigned32 (0.. ~~aBRPminSCblocks~~65535)

At P760 L40: DEFVAL { ~~0~~ false }

At P760 L53: DEFVAL { ~~0~~ false }

At P761 L1: SYNTAX ~~INTEGER { 0..2 }~~ Integer32 (0..2)

At P763 L54: dot11EDMGBFDMGTRNRXOnly,

At P764 L1: dot11EDMGBFGrantLargestNgSupported,

At P764 L2: dot11EDMGBFDynamicGroupingImplemeneted

# Collateral findings

# IEEE-SA MEC

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| --- |
| Robert Stacey,  Thank you for submitting IEEE P802.11ay/D3.1 for MEC.  Upon review, I have found no editorial issues that would prevent the draft from moving on to ballot.  Please let me know if you have any questions.  **NOTE—Fonts shall be embedded in the draft PDF. Instructions on creating a PDF with embedded fonts can be found at:** <http://standards.ieee.org/develop/stdswritten.html>  Thank you,  Julie  ------------------------------------------  Julie Alessi  Program Manager  Content Production & Management  IEEE Standards Association  445 Hoes Lane  Piscataway, NJ 08854  732-562-5435  IEEE - Advancing Technology for Humanity |