IEEE P802.11
Wireless LANs

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| 802.11IEEE P802.11ay D3.1 Mandatory Draft Review (MDR) Report |
| Date: 2019-04-24 |
| Author(s): |
| Name | Company | Address | Phone | email |
| Robert Stacey | Intel |  |  | robert.stacey@intel.com |
| Peter Ecclesine | Cisco Systems |  |  | pecclesi@cisco.com |
| Solomon Trainin |  |  |  |  |
| Yongho Seok |  |  |  |  |
| Emily Qi |  |  |  |  |
| Edward Au |  |  |  |  |
| Mark Hamilton |  |  |  |  |

**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.

# 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

Emily 🡺 Edward

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

#### normative, non-normative, ensure

Edward

#### which/that

Edward

#### articles

Edward

#### missing nouns

Edward

#### unnecessary nouns

Edward

#### unicast and multicast

Edward

### Style Guide 2.10 – Numbers

Edward

### Style Guide 2.11 – Maths operators and relations

Edward

### Style Guide 2.12 – Hyphenation

Edward

### 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

### 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 paragraphand 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** | P22L19-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 – 120.34121.5121.8 – 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** | 121.24-121.28121.30-121.35121.37-121.40122.3-122.11 | 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** | 122.19-122.24122.27-122.39 | 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

#### Annex G – Frame exchange sequences

Edward

## ANA

Check for correct use of numbers against database.

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

Robert Stacey

## MIB

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

### Detailed proposed changes

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

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

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