IEEE P802.11  
Wireless LANs

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| TGme LB258 Miscellaneous GEN Comment Resolutions | | | | |
| Date: 2022-06-03 | | | | |
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Background

This contribution proposes comment resolutions to GEN adhoc comments received in LB258 on REVme D1.0. The resolutions will be shown relative to D1.0.

CIDs 2212, 2213, 1379, 1389, 1039, 1432, 1657, 1661, 1739, 2255. 1281, 1869, 1083

### Comment

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| **CID** | **Page** | **Clause** | **Duplicate of CID** | **Resn Status** | **Comment** | **Proposed Change** |
| 1039 | 411.00 | 6.3.7.2.2 |  |  | Supported channels element should (at least optionally) be present even where there is no regulatory requirement for DFS, to enable better client steering during association. If accepted, the comment would have follow-on effects in other parts of the document relating to (re)association request frames. | Change "otherwise not present" to "otherwise optionally present". |

### Discussion:

* The cited text is in the MLME-ASSOCIATE.request parameter list.

Text

Description automatically generated

* The suggests including this parameter to better client steering. However the only behavior in the standard tied to this parameter is in clause 11.8, DFS procedures.
* If the Supported Channels element behavior was to be extended to support client steering, there would at least need to be behavioral text to describe the conditions for when it is included and how an AP might use it.
* Including the supported channels in the Association Request frame might be too late to facilitate client steering given that the non-AP STA has already selected the AP.
* After consultation with the commenter, she indicated that the situations where supported channels element wouldn't be present shouldn't arise that much so there wasn’t much value in making the change.

### Proposed Resolution: (1039)

REJECTED. The commenter has withdrawn the comment.

### Comment

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| **CID** | **Page** | **Clause** | **Duplicate of CID** | **Resn Status** | **Comment** | **Proposed Change** |
| 1281 | 202.00 | 3.1 |  |  | "Single input, single output (SISO)" is double-defined. This is confusing. | Please rephrase at least one of them. |
| 1869 | 202.00 | 3.2 |  |  | Two SISO definitions | Delete the second one |
| 2255 | 202.00 | 3.1 |  |  | There are two SISO definitions in subclause 3.1. Only one definition should be used. When revieiwing the definitions and the use of SISO in 11ax and 11ay, SISO is only used twice in in 11ax (in the definiton of 3.1 and in subclause 27.3.1.1) and 161-times in 11ay. Hence the proposal is to use the definition of 11ay and remove the one from 11ax. | As proposed in the comment remove the "SISO" definition of 11ax and keep the one of 11ay. Further remove the "(SISO)" on P4318L32 as it may not be inline with the definition of 11ay and may be unnecessary here. |

### Discussion:

* Cited text in 3.1 on 202.60:

“**single input, single output (SISO):** A technique by which a station (STA) transmits to or receives from a

single STA a single space-time stream.(11ax)

**(11ay)single input, single output (SISO):** A physical layer (PHY) configuration in which both transmitter

and receiver use a single antenna.”

* Quoted text at P4318.32 is

“The HE PHY supports OFDMA transmissions, in both the DL and the UL where different users can occupy

different RUs in a PPDU (see 27.3.10 (Mathematical description of signals)). The transmission within an

RU in a PPDU may be a single stream to one user (SISO), multiple streams spatially multiplexed to one user

(SU-MIMO), or multiple streams spatially multiplexed to multiple users (MU-MIMO).”

* The definition of MIMO is:

**“multiple input, multiple output (MIMO):** A physical layer (PHY) configuration in which both transmitter

and receiver use multiple antennas.”

* To remain consistent with the MIMO definition, it would make sense to remove the parenthetical SISO from the text on p4318.
* In the text on p4318, the parenthetical is not required because the text refers to a single stream, not a single antenna configuration.

### Proposed Resolution: (1281, 2255, 1869)

CID 2255: ACCEPTED.

CIDs 1281 and 1869: REVISED. Remove the "SISO" definition at 202.60. Remove the "(SISO)" on P4318L32. Note to editor. The resolution to this CID is the same as CID 2255.

### Comment

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| **CID** | **Page** | **Clause** | **Duplicate of CID** | **Resn Status** | **Comment** | **Proposed Change** |
| 1379 | 226.00 | 3.2 |  |  | "link: In the context of an IEEE 802.11 medium access control (MAC) entity, a physical path consisting of exactly one traversal of the wireless medium (WM) that is usable to transfer MAC service data units (MSDUs) between two stations (STAs)." -- so if you reassociate to the same AP, is it the same link? If you disassociate and then associate to the same AP, is it the same link? I think a link has to have some state, at least in an infrastructure or mesh BSS | Change to "link: In the context of an IEEE 802.11 medium access control (MAC) entity, a physical path consisting of exactly one traversal of the wireless medium (WM) that is usable to transfer MAC service data units (MSDUs) between two stations (STAs) that have established a relationship." |

### Discussion:

* Cited text:

“link: In the context of an IEEE 802.11 medium access control (MAC) entity, a physical path consisting of exactly one traversal of the wireless medium (WM) that is usable to transfer MAC service data units (MSDUs) between two stations (STAs).”

* Proposed text change:

"link: In the context of an IEEE 802.11 medium access control (MAC) entity, a physical path consisting of exactly one traversal of the wireless medium (WM) that is usable to transfer MAC service data units (MSDUs) between two stations (STAs) that have established a relationship."

* In all cases, state is required to exchange MSDUs.

### Proposed Resolution: (1379)

ACCEPTED

### Comment

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| **CID** | **Page** | **Clause** | **Duplicate of CID** | **Resn Status** | **Comment** | **Proposed Change** |
| 1389 |  | 4.5.4.2 |  |  | Does multicast traffic go through the controlled port or through the uncontrolled port (Mike MONTEMURRO suggested on 2021-05-25 in TGbc that multicast traffic is not blocked)? | At 320.11 add "NOTE---Group addressed traffic goes through the 802.1X Uncontrolled Port." |

### Discussion:

* From IEEE 802.1X-2010, section 1.3:

“Port-based network access control specifies a common architecture comprising cooperative functional elements and protocols that

1. Use the service provided by the LAN MAC, at a common service access point, to support a Controlled Port that provides secure access-controlled communication and an Uncontrolled Port that supports protocols that initiate the secure communication or do not require protection.”

* An 802.11 RSN SA includes the cryptographic encapsulation for group-addressed traffic, so to receive group-addressed traffic, the STA needs to successfully negotiate an SA to install the GTK to receive protected group-addressed traffic.
* Therefore the note above is not required.
* An AP will transmit group-addressed traffic protected with the GTK though the controlled port.

### Proposed Resolution: (1389)

REJECTED. Multicast traffic does pass through the controlled port and requires a negotiated GTKSA. The note is neither correct nor required.

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| **CID** | **Page** | **Clause** | **Duplicate of CID** | **Resn Status** | **Comment** | **Proposed Change** |
| 1432 |  |  |  |  | If there are multiple notes within a leaf subclause, sometimes they are numbered sequentially within the subclause as a whole, sometimes they are numbered sequentially only when immediately adjacent | Remove all numbers immediately after "NOTE " and before an em dash |

### Discussion:

* According to the IEEE Standards Style Manual, see <https://mentor.ieee.org/myproject/Public/mytools/draft/styleman.pdf>, section 18.1, “Within each subclause, notes should be numbered sequentially, i.e., “NOTE 1—”, “NOTE 2—”, etc. The one exception is when notes appear in the definitions clause. Notes in the definitions clause should only be numbered if there are multiple notes that apply to a single definition. That is, each definition is treated as if it were its own subclause.

### Proposed Resolution: (1432)

REJECTED. The convention used in this specification is consistent with the IEEE Standards Style Manual, see <https://mentor.ieee.org/myproject/Public/mytools/draft/styleman.pdf>

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| **CID** | **Page** | **Clause** | **Duplicate of CID** | **Resn Status** | **Comment** | **Proposed Change** |
| 1657 |  | 4.3.10 |  |  | Can TDLS be used with DMG? If so, then why is the (Extended) Supported Rates And BSS Membership Selector element allowed for TDLS Action frames? It's not normally allowed for DMG. Ditto mesh and DMG | At 274.62 append "A DMG STA is not a TDLS STA. A DMG STA is not a mesh STA." |

### Discussion:

* The cited clause refers to a QoS BSS. Not TDLS which is described in 4.3.20.
* The cited location where the proposed change is requested says:

“A DMG STA is a QoS STA. A DMG BSS is a QoS BSS.”

* The general clause for TDLS describes requirements for when TDLS can be used. From 11.20.1, the General clause for Tunneled Direct-Link Setup:

“A DMG STA shall not use the TDLS protocol.”

“TDLS shall not be used in an IBSS.”

“TDLS shall not be used in an MBSS.”

* In 4.3.24 (DMG STA) at 298.49, there is a sentence

“A DMG STA is not a mesh STA.”

### Proposed Resolution: (1657)

REJECTED. The proposed changes are already included in other parts of the specification. See clauses 11.20.1 and 4.3.24. No changes are required at the cited location.

### Comment

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| **CID** | **Page** | **Clause** | **Duplicate of CID** | **Resn Status** | **Comment** | **Proposed Change** |
| 1661 | 490.00 | 6.3.19.1.4 |  |  | ", subject to validation based on the Receive Sequence Count, if applicable" -- not clear. If this is saying that replay detection is performed, then that's true, but it's not based on the RSC, except for the first frame received, and for pairwise there's validation too | Delete the cited text |

### Discussion:

* The cited text is:

“The MAC installs the key with the associated Key ID such that received frames for that cipher, of the appropriate type, and containing the matching Key ID are processed using that key and its associated state information, subject to validation based on the Receive Sequence Count, if applicable The MAC installs the key with the associated Key ID such that received frames for that cipher, of the appropriate type, and containing the matching Key ID are processed using that key and its associated state information, subject to validation based on the Receive Sequence Count, if applicable.”

* Given that the context is the MLME-SetKeys primitive, the validation of RSC is a condition for calling the primitive, not an effect of receipt. Therefore the cited text can be deleted.

### Proposed Resolution: (1661)

ACCEPTED.

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| **CID** | **Page** | **Clause** | **Duplicate of CID** | **Resn Status** | **Comment** | **Proposed Change** |
| 1739 | 193.00 | 3.2 |  |  | "direct link: A bidirectional link from one quality-of-service (QoS) station (STA) to another QoS STA operating in the same infrastructure QoS basic service set (BSS) that does not pass through a QoS access point (AP)." -- you can have a direct link in an IBSS or PBSS or MBSS, and at least in an IBSS it need not be a QBSS. Note TDLS direct link has its own more specific definition | Change to "direct link: A bidirectional link from one station (STA) to another STA operating in the same basic service set (BSS) that does not pass through an access point (AP) or personal basic service set (PBSS) control point (PCP)." |

### Discussion:

* Cited text:

“**direct link**: A bidirectional link from one quality-of-service (QoS) station (STA) to another QoS STA operating in the same infrastructure QoS basic service set (BSS) that does not pass through a QoS access point (AP).”

* Based on a search on “Direct Link” in the specification, the only indication of support for direct link is IBSS or BSS. Not PBSS. Therefore we could update the definition to cover IBSS.

### Proposed Resolution: (1739)

REVISED. Change the definition of direct link to cover an IBSS.

At the cited location, change

“direct link: A bidirectional link from one quality-of-service (QoS) station (STA) to another QoS STA operating in the same infrastructure QoS basic service set (BSS) that does not pass through a QoS access point (AP).”

to

“direct link: A bidirectional link from one quality-of-service (QoS) station (STA) to another QoS STA operating in the same QoS independent basic service set (IBSS), or infrastructure QoS basic service set (BSS) that does not pass through a QoS access point (AP).”

### Comment

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| **CID** | **Page** | **Clause** | **Duplicate of CID** | **Resn Status** | **Comment** | **Proposed Change** |
| 2212 | 242.00 | 3.2 |  |  | Definition of target wake time (TWT) service period (SP) relies on an awaken period of a STA (not sure all periods of activity of a STA is called TWT SP?), whereas it seems to be a period announced by TWT and wherein it is expected that the STA would be awake. | please clarify, at least by amending such that "...during which a TWT station (STA) is expected to be awake to transmit and/or receive frames..." |

### Discussion:

* Cited text:

**target wake time (TWT) service period (SP)**: A period of time during which a TWT station (STA) is awake to transmit and/or receive frames.

* The proposed change is:

“**target wake time (TWT) service period (SP)**: A period of time during which a TWT station (STA) is during which a TWT station (STA) is expected to be awake to transmit and/or receive frames.

* The proposed change looks OK.

### Proposed Resolution: (2212)

ACCEPTED.

### Comment

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| **CID** | **Page** | **Clause** | **Duplicate of CID** | **Resn Status** | **Comment** | **Proposed Change** |
| 2213 | 243.00 | 3.2 |  |  | Definition of trigger frame is not clear (A frame type or a frame transmission occurrence within a specific context). What is such a specific context ? | as comment |

### Discussion:

* The cited text is

**trigger frame**: A frame type or a frame transmission occurrence within a specific context, intended to solicit the peer entity into a responding action.

* There are multiple types of trigger frames that are transmitted under different conditions. It might be better to simplify the definition and remove the cited text.

### Proposed Resolution: (2213)

REVISED. The “specific context” in the definition of the trigger frame is not required.

At cited location, change:

“**trigger frame**: A frame type or a frame transmission occurrence within a specific context, intended to solicit the peer entity into a responding action.

to

“**trigger frame**: A frame type or a frame transmission intended to solicit the peer entity into a responding action.”

### Comment

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| **CID** | **Page** | **Clause** | **Duplicate of CID** | **Resn Status** | **Comment** | **Proposed Change** |
| 1083 | 3206.00 | 12.7.2 |  |  | remove deprecated and obsolete ciphers | remove the first three rows of the rows of table 12-8 (note how the proposed resolution doesn't say "as in comment"?) |

### Discussion:

* WEP is marked obsolete and TKIP is marked deprecated. By definition, these features could be removed in a subsequent version of the standard.
* Table 12-8 which indicates cipher suite key lengths, is just one location where these cipher suites are referenced. If these rows were removed, additional changes to the standard would be required to remove them consistently.
* Furthermore, the convention within this revision PAR is to not maintain text that is associated
* Note that this proposed change is implemented in a more comprehensive contribution: <https://mentor.ieee.org/802.11/dcn/18/11-18-0652-01-000m-resolution-for-wep-tkip-removal-cids.docx> that proposed to remove all of WEP and TKIP.
* This CID should be resolved along with other CIDs that propose to remove WEP and TKIP.
* Removal of TKIP and WEP were considered in REVmd and the comments were resolved with REJECTED (PHY: 2019-03-12 21:07:33Z)

“The task group discussed removal of WEP and/or TKIP from the standard and decided to not change the standard based on strawpolls in the direction for the resolution. The strawpolls were held during the Warsaw meeting (2018-05-08) and the option to keep WEP and TKIP text as-is received most support. See https://mentor.ieee.org/802.11/dcn/18/11-18-0616-00-000m-minutes-revmd-may-2018-warsaw.docx”

### Proposed Resolution: (1083)