* + 1. IEEE P802.11
		Wireless LANs

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| 802.11[LB249 CR for Various Comments](relative to P802.11az/D2.0) |
| Date: 2020-10-08 |
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**Abstract**

This submission contains proposals to resolve LB#249 CIDs 3328, 3036, 3341, 3365, 3451, 3477, 3482, 3529, 3570, 3643, 3826, 3864, 3889, 3898, 3108, 3236 (16 CIDs total).

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| **CID** | **Page/****Line** | **Clause** | **Comment** | **Proposed change** | **Resolution** |
| 3328 | 77.28 | 9.4.2.296 | Figures 9-1010 and 9-1011 are too small. | Make figures more readable. Wrap lines if necessary | Reject.The group reviewed the comment, balanced between level of detail and size of the figure. Existing editorial tools allow for zooming in with acceptable level of clarity. |
| 3036 | 77.22 | 9.4.2.296 |

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| Figures 9-1010 and 9-1011 are very small, and the aspect ration was changed to squeeze them. Split each, and have reasonable fonts for readability. | As described |

 | As described | Reject.The group reviewed the comment, balanced between level of detail and size of the figure. Existing editorial tools allow for zooming in with acceptable level of clarity. |

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| 3341 | 3.2 |  | "higher accuracy executing on the same PHY-type" : Higher accuracy compared to what? What's the baseline? What are the methods to have better accuracy? This is a bit vague statement. | 1) Provide the baseline reference. 2) Include info what are the methods to have higher accuracy. | Revise.See discussion in 11-20-1437.TGaz editor make changes as depicted below. |

**Discussion**:

Recommendation from the WG editor was to keep it concise and simple, in comparison 11ax has a much lower level of detail.

**Resolution:**

**Revise.**

**TGaz editor make the following changes to D2.3 P.3 L.1:**

Abstract:

This amendment defines modifications to both the IEEE 802.11 medium access control layer (MAC) and physical layers (PHY). Compared to Std IEEE 802.11-2016, it enables absolute and relative position estimation with higher accuracy and, reduces wireless medium utilization and power consumption, is scalable to dense deployments, and includes security features.

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| **CID** | **Page/****Line** | **Clause** | **Comment** | **Proposed change** | **Resolution** |
| 3365 | 35.19 | 6.3.38 | It is possible that multiple outstanding service requests exists for FTM service from upper layer, the STA needs to aggregate and generate a single service request to its peer. | Add MLME SAP support to enable a STA to aggregate multiple service request and generate a single FTM session to RSTA | Reject.The commenter withdrew the comment and will bring it at a later re-circulation ballot. |
| 3451 | 28.3 | 6.3.56.1 | Rename 6-17b and 6-17c to not include timestamp capture, since that is not done in this exchange (it's done on the NDP exchange). | Delete "and timestamps capture" from the titles of Figure 6-17b and Figure 6-17c. | Revise.TGaz editor make the following changes:1. change figure 6-17b title to:“Fine Timing Measurement primitives and timestamp reporting capture for Non-TB Ranging measurement exchange”2. Change figure 6-17c title to:“Fine Timing Measurement primitives and timestamps reporting capture for TBRanging measurement exchange” |

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| **CID** | **Page/****Line** | **Clause** | **Comment** | **Proposed change** | **Resolution** |
| 3477 | 19 | N/A | Not clear what the amendment is based on. 19.9 says "IEEE P802.11REVmd(TM)/D2.0, as amended by IEEE 9P802.11ax(TM)/D4.0, and IEEE P802.11ay(TM)/D4.0" but 1.2 says "IEEE P802.11REVmd(TM)/D3.0,IEEE P802.11ax(TM)/D6.0 IEEE P802.11ay(TM)/D5.0and IEEE P802.11ba(TM)/D5.0" | As it says in the comment | Revised TGaz editor will have correct revision as appropriate to the relevant draft in the next revision.  |

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| **CID** | **Page/****Line** | **Clause** | **Comment** | **Proposed change** | **Resolution** |
| 3482 | 21.14 |  | "non-TB" does not need to be defined; its meaning is obvious | Delete the "non-TB" line | RejectTB may be a documented acronym for 11ax, however non-TB operation in the context of 11az is a noun meaning operation of specific nature it is not simply an FTM that does not use TF or Trigger Based operation. |

Discussion:

Non-TB is not used as acronym however non-TB does refer to the Non-TB Ranging measurement exchange, 11ax is using the term non-TB in a different context (e.g. Non-TB sounding).

The Term non-TB in the context of 11az needs to be defined and added to the definition section.

**Resolution**:

**Revised.**

*TGaz editor make the following changes to section* ***3.2 Definitions specific to IEEE 802.11*** *and to section* ***3.4 Abbreviations and acronyms****:*

**3.2 Definitions specific to IEEE 802.11**

***Insert the new definitions into 3.2 in alphabetical order:***

**Enhanced Directional Multi-Gigabit (EDMG) secure ranging physical layer (PHY) protocol data unit (PPDU)**: An EDMG single user (SU) PPDU that contains Secure training (TRN) subfields in the training (TRN) field to enable secure ranging with physical layer (PHY) level security. (#**2020**, #**1486**)

**FTM frame**: a Fine Timing Measurement frame

**FTMR frame**: a Fine Timing Measurement Request frame

 (#**3940**)

**I2R LMR frame**:   a Location Measurement Report frame transmitted from an ISTA to an RSTA

**LMR frame**: a Location Measurement Report frame

**Pre-association security negotiation (PASN)**: A mechanism to establish security association and allow Management Frame Protection prior to association.

**Pre-association security negotiation station (STA)**: A STA that implements pre-association security negot1iation (PASN). (#**1488, #2391**)

**R2I LMR frame**:  a Location Measurement Report frame transmitted from an RSTA to an ISTA

**zero-power guard interval (GI):** A guard interval with zero signal power (#**1055**)

**Non-TB Ranging –** ranging measurement procedure that uses NDP and is not initiated by Ranging Trigger frame.(#3482)

3.4 Abbreviations and acronyms

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| 3529 |  |  | Change tracking seems dodgy. Here 11md/D3.0 says "being available at the beginning of the burst instance determined by the responding STA" but the unmodified text shown is "being available at the scheduled time window(s) for executing the ranging measurement exchange(s).." (also note double full stop) | Ensure change tracking is accurate throughout. If material is not shown as changed it will probably (a) not be reviewed and (b) not be incorporated by TGm | Revise.This is a style issue and as such outside the scope of the ballot.The editor instruction is replace the REVmd subclause not modify it, hence underline is not appropriate. There are couple of lines at the end of the clause that has underline and should be removed.TGaz make changes as depicted below in 11-20-1437. |

**Resolution:**

TGaz editor remove “word underline” from the following sentences:

The FTM procedure provides mechanisms as described in 11.22.6.1.1 (EDCA based ranging and TB ranging overview) and 11.22.6.1.2 (Non-TB Ranging overview) to ensure that the ISTA is available to execute the ranging measurement exchange as scheduled.

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| **CID** | **Page/****Line** | **Clause** | **Comment** | **Proposed change** | **Resolution** |
| 3570 | 115.28 | 11.22.6.3.1 | Not clear what is new text and what is existing (possibly moved) text | As it says in the comment | **Reject**The comment failed to identify an error in the draft, is asking for information.The editor instruction are clear to insert a new subclause heading and move text. The new subclause heading is identified as new text.“***Insert a new subclause heading 11.22.6.3.1 and move the first two and the fourth paragraph (along with the note) of 11.22.6.3 to 11.22.6.3.1”*** |
| 3643 | 126.25 | 11.22.6.3.6 | Why can't I request all four things, for example? | Add a row with Y in each cell | **Reject**The reason for not having an all “Y” (all measurement type) row is that this is conflicting behavior to the protocol, hence not valid.  |

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| **CID** | **Page/****Line** | **Clause** | **Comment** | **Proposed change** | **Resolution** |
| 3826 | None | None | Some comments on D1.0 were rejected on the basis that "The issue is no longer exist in D 1.5" or similar. If that's the case, then they should have been REVISED, with an explanation of the change that was made, since they were clearly valid on D1.0, which was what the ballot was on. Do not do the same thing again now with D2.0 | As it says in the comment | **Reject**.The comment does not identify any specific issue with the draft nor responding to the question of the ballot. To the commenter: in at least some cases moving from D1.0 to later draft complete clauses were re-written to not allow identification of the issue in the minor draft. Since changes were unable to be made it would be inappropriate to give it a revise. |

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| **CID** | **Page/****Line** | **Clause** | **Comment** | **Proposed change** | **Resolution** |
| 3864 | 196.20 | 26.5.2.5 | "unless 20one of the following conditions is met:." -- suggests if both met then doesn't apply. Also spurious full stop | Change to "if none of the following conditions is met:" | **Revised**.The condition is that one of the following conditions is met and NOT “one *and only one”* of conditions.11az amendment changes the 11ax amendment which uses the same language for the CS required subfield, for consistency better to leave the same language as to not create ambiguity as to the intent.See discussion below.Recommend resolving the language issue if any in TGax first and then percolate into later amendments. TGaz editor remove redundant period (‘.’) from D2.3 P.206 L.21:“An RSTA that transmits a Ranging Trigger frame shall set the CS Required subfield to 1 unless 20 one of the following conditions is met:.’ |

**Discussion**:

11ax D7.0 P.383 L.45:

“An AP that transmits a Basic, BSRP, MU-BAR, BQRP or GCR MU-BAR Trigger frame shall set the CS

Required subfield to 1 unless one of the following conditions is met:

— The RA of the Trigger frame is an individually addressed non-AP”

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| **CID** | **Page/****Line** | **Clause** | **Comment** | **Proposed change** | **Resolution** |
| 3889 | 76.3 | 9.4.2.296 | In Figure 9-1007 immediate LMR feedback field is not required because Immediate R2I and I2R feedback is already included in Ranging parameters fields so need to include here | as in comment | **Revised**See also CID 3231.D2.3 removed the immediate LMR feedback field (B16) and made it reserved. Immediate R2IFeedback and Immediate I2RFeedback are part of the Ranging parameters field B22 and B23. TGaz editor no further action needed. |
| 3898 | 58.1 | 9.4.2.26 | Table 9-153, the note for the entry "AoA Measurements Available" does not link this entry to a STA capable of the TB or NTB operation, although the entry is only applicable to a STA that supports TB or NTB ranging. | Modify the note so that the entry is only applicable to a STA that supports TB or NTB ranging. | RejectTable 9-153 does not include dependencies on other functionalities, these are specified as part of the MIB variable.  |

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| **CID** | **Page/****Line** | **Clause** | **Comment** | **Proposed change** | **Resolution** |
| 3108 | 88.5 | Figure 9-1029 | The definition for "Passive TB Ranging Measurement Report Table" is missing from the text in this section. | If it is not needed then delete it from the frame format. | ReviseThis was address in resolution of CID ????TGaz editor  |

**Discussion**:

**Resolution:**

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| **CID** | **Page/****Line** | **Clause** | **Comment** | **Proposed change** | **Resolution** |
| 3236 | 120.13 | 11.22.6.3.3 | "An RSTA shall reject a request, unless the request is for Passive TB Ranging, if it has set the" - why is it any different for passive TB Ranging? If there is no PASN negotiated can't use secured, also why would any of this apply to passive? | Remove subclause "unless the request is for Passive TB Ranging" to keep text concise | **Revised,** see discussion in 11-20-1437 below.TGaz editor make changes identified in 11-20-1437 below. |

**Discussion**:

The “Protection of Range Negotiation” is used for so called “Active Ranging” not for passive ranging (DTOA). As such an AP STA may request STAs to establish “active ranging” only if secured whereas the passive ranging may still be unsecured. In general making the negotiation of passive ranging secure will not help, because there is still the possibility to impersonate the primary and the secondary LMR frames.

Protecting the LMR frames requires each individual PSTA to create a security context, and then the question is does all PSTA trust each other.

However, agree with the commenter the sentence is hard to read.

[Note to group:] over the reflector suggestion by a group member to not require the last sentence (An RSTA…Passive TB ranging).

**Resolution:**

TGaz editor make changes to D2.3 P.120 as follows:

An RSTA shall reject a request, for a Trigger-Based, a non-Trigger-Based, or an EDCA based ranging measurement with a Format and Bandwidth field indicating DMG or EDMG format, if it has set the Protection of Range Negotiation and Measurement Management Frames Required field of the RSNXE to 1, and the ISTA has not successfully set up a security context to protect IFTMR, IFTM and LMR frames exchanged between the RSTA and the ISTA. (#3940)

An RSTA shall not reject such a request for Passive TB ranging.

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| 3238 | 121.11 | 11.22.6.3.3 | Re-raising CID 1413 of LB240, some implementations do not need repetition for secure LTF processing, as receiver implementation is not scope of this standard, not allowing a value of zero (meaning no repetition) as a valid value unnecessarily assumes certain implmenatation choices | Remove this paragraph, ISTA and RSTA can each request the number of repetitions that they see approriate for their secure LTF processing | **Revised / Reject**Redraw?Agree in principal with commenter.See discussion below.TGaz editor make changes as  |

**Discussion:**

Agree to the point the commenter is making, there could be multiple techniques to identify

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| 3239 | 122.2 | 11.22.6.3.3 | Relates to CID 1413 of LB240, again there is no need to require a minimum of 1 for the Max I2R rep, also Max R2I Rep should not necessarily set to the same value as requested by the ISTA, what if the ISTA wants at least 2 repetitions, preferably 3? If it sets to 3, but the RSTA only supports 2, then the negotiation will fail. This seems inefficient | Remove this paragraph. | Reject/ReviseRedraw |

**Discussion**:

**Resolution:**

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| 3270 | None provided | None provided | Follow-up to CID 2176: there should be something stating that "if it is delayed feedback, you'll never get the last measurement" | As it says in the comment | Resolution: Reject. See discussion in 11-20-1257 below.  |

**Discussion**:

It is true that in delayed reporting the last measurement is not reported, however there is no action (observable Shall or May statement) on ISTA or RSTA that needs to happen as a result.

It is simply a property of the message exchange flow.

There are many other properties the spec doesn’t specify which individuals may care for, specifying some will yield the question on why not others and will result in no better observable part.

**Resolution:**

Rejected.