IEEE P802.11  
Wireless LANs

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| LB279 Comment Resolution for CIDs in sec-9 part-2 | | | | |
| Date: 2024-01-30 | | | | |
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|  |  |  |  |  |

Abstract

This document provides LB279 comment resolutions to CIDs in section 9 based on **11bkD1.0, 11beD5.0, and REVmeD4.2 references**. The CIDs including 1193, 1196, 1198, 1400, 1074, 1027, 1388, 1207, 1389, 1212, 1041, 1366, 1216, 1217, 1109, 1019, and 1075 (17 total)

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| --- | --- | --- | --- | --- | --- |
| **CID** | **Clause** | **Page** | **Comment** | **Proposed Change** | **Resolution** |
| 1193 | 9.3.1.22.1 | 17.13 | " which can be one of five frame types: Poll, Sounding, 14 Secure Sounding, Report and Passive Sounding Ranging Trigger frame" duplicates Table 9-30ka | Delete the cited text | Revised  <https://mentor.ieee.org/802.11/dcn/24/11-24-0213-01-00bk-lb279-comment-resolution-for-cids-in-sec-9-part-2.docx> |
| 1196 | 9.3.1.22.1 | 17.21 | "Ranging Trigger subvariants" should be "Ranging Trigger frame subvariants" | As it says in the comment | Revised  <https://mentor.ieee.org/802.11/dcn/24/11-24-0213-01-00bk-lb279-comment-resolution-for-cids-in-sec-9-part-2.docx> |
| 1198 | 9.3.1.22.1 | 17.31 | "contains a value in the range of 0 to 63 which" -- it's a 6-bit field so this is repetition | Delete the cited text | Revised  <https://mentor.ieee.org/802.11/dcn/24/11-24-0213-01-00bk-lb279-comment-resolution-for-cids-in-sec-9-part-2.docx> |
| 1400 | 9.3.1.22.10 Ranging Trigger variant | 17.19 | The description is confusing | Suggest to change "...field in the Trigger Dependent Common Info subfield is used..." to "...subfield in the Trigger Dependent Common Info field is used..." | Revised  <https://mentor.ieee.org/802.11/dcn/24/11-24-0213-01-00bk-lb279-comment-resolution-for-cids-in-sec-9-part-2.docx> |
| 1074 | 9.3.1.22.1 | 17.09 | "Insert the following new clauses: (#202307-03)". These are not new Clauses. They already exist in 802.11-REVme/D4.1. Specifically, Clause 9.3.1.22a and subclauses are Clause 9.3.1.23 and subclauses in 802.11-REVme/D4.1. | Only highlight changes relative to 802.11-REVme/D4.1 and avoid copying unnecessary text. | Revised  <https://mentor.ieee.org/802.11/dcn/24/11-24-0213-01-00bk-lb279-comment-resolution-for-cids-in-sec-9-part-2.docx> |
| 1027 | 9.3.1.22.10 | 17.09 | 802.11-REVme/D4.1 already has the subclause for Ranging Trigger variant. | Update the instruction to say that the changes are shown under 9.3.1.22.10. Update the figure numbers and table numbers under 9.3.1.22.10 to allign with 802.11-REVme D4.1. | Revised  <https://mentor.ieee.org/802.11/dcn/24/11-24-0213-01-00bk-lb279-comment-resolution-for-cids-in-sec-9-part-2.docx> |
| 1388 | 9.3.1.22.10 | 17.10 | Clause 9.3.1.22.10 has already been in REVme D4.1. | Make the text change based on 9.3.1.22.10 of REVme D4.1 | Revised  <https://mentor.ieee.org/802.11/dcn/24/11-24-0213-01-00bk-lb279-comment-resolution-for-cids-in-sec-9-part-2.docx> |
| 1207 | 9.3.1.22.1 | 18.28 | "have a TB ranging measurement 29 exchange" -- not clear what it means for a STA to "have" an "exchange". Ditto line 1 of next page | Clarify | Revised  <https://mentor.ieee.org/802.11/dcn/24/11-24-0213-01-00bk-lb279-comment-resolution-for-cids-in-sec-9-part-2.docx> |
| 1389 | 9.3.1.22a | 19.03 | The text change is not consistent with clause 9.3.1.23 of REVme D4.1. | Make the text change based on 9.3.1.23 of REVme D4.1 | Revised  <https://mentor.ieee.org/802.11/dcn/24/11-24-0213-01-00bk-lb279-comment-resolution-for-cids-in-sec-9-part-2.docx> |
| 1212 | 9.3.1.22a.1 | 19.12 | Is this a new subclause? If so, why is material underlined/struck through? What is the scope of "Insert the following new clauses:" on page 17? | Clarify | Revised  <https://mentor.ieee.org/802.11/dcn/24/11-24-0213-01-00bk-lb279-comment-resolution-for-cids-in-sec-9-part-2.docx> |
| 1041 | 9.3.1.22a.2 | 20.28 | "given by the Number Of HE-LTF Symbols And Midamble Periodicity subfield" - this is a specific field name, we can't just strike "HE" | Replace with "given by the Number Of HE/EHT-LTF Symbols And Midamble Periodicity subfield" - this is the name used by EHT, but potentially have to make this an "A or B" phrase. | Revised  <https://mentor.ieee.org/802.11/dcn/24/11-24-0213-01-00bk-lb279-comment-resolution-for-cids-in-sec-9-part-2.docx> |
| 1366 | 9.3.1.22a.2 | 20.06 | The baseline has some inconsistencies already between "HE-LTF repetitions" and "LTF repetitions" (for example, see REVme D4.1, P2650.40 vs. P2652.5). Is the intention to remove the "HE-LTF repeitions" phrase, and make them all to "LTF repetitions"? If so, several were missed (including the defintion in clause 3). This is just a suggestion that 11bk is a good time to fix this. | Fix all the "[HE-]LTF repetitions" to be consistent in the baseline, and in 11bk's new text. | Revised  <https://mentor.ieee.org/802.11/dcn/24/11-24-0213-01-00bk-lb279-comment-resolution-for-cids-in-sec-9-part-2.docx> |
| 1216 | 9.3.1.22a.3 | 21.22 | Deletion of "In the Common Info field, the MU-MIMO HE-LTF Mode, UL STBC, LDPC Extra Symbol 23 Segment, Pre-FEC Padding Factor, and PE Disambiguity subfields are reserved. The GI And HE-24 LTF Type and Doppler subfields in the" seems to be changing the rules for existing implementations | Revert the deletions | Rejected  The corresponding fields are captured in the Sounding Trigger frame section hence decided not to replicate and instead make a reference for Secure Sounding Trigger frame |
| 1217 | 9.3.1.22a.4 | 21.29 | "soliciting 30 an HE TB PPDU or an EHT TB PPDU" -- can it solicit anything else for now? And in the future won't it be able to solicit an UHR TB PPDU? | Revert the insertion | Rejected  TG has decided to limit PPDU types (HE and EHT) for LMR frames hence minimizing implementation options. It is not clear at this point there’s a need to include options that UHR could provide. |

*Resolution for CIDs 1193, 1196, 1198, 1400, 1074, 1027, 1388, 1207, 1389, 1212, 1041, 1366, 1216, and 1217:*

*TGbk editor, delete text in P19 L3 to P20-L34 and replace it with modifed text from P702L11 to P705-L46 of REVme D4.2 as follows:*

* Ranging Trigger variant(11az)

The Ranging Trigger Subtype subfield value in the Trigger Dependent Common Info field of the Ranging Trigger frame, see Table 9-56 (Ranging Trigger Subtype subfield encoding(11az)), signals the Ranging Trigger frame subvariants~~, which can be one of five frame types: Poll, Sounding, Secure Sounding, Report, and Passive Sounding Ranging Trigger frame~~.

The format of the Trigger Dependent Common Info subfield for the Poll, Sounding, Secure Sounding, and Report Ranging Trigger frame, is shown in Figure 9-101 (Trigger Dependent Common Info subfield format for the Ranging Trigger subvariants Poll, Sounding, Secure Sounding, and Report(11az)). The Token subfield in the Trigger Dependent Common Info subfield is used in a Poll Ranging Trigger frame to match it with the partial TSF time in a following Ranging NDP Announcement frame. It is reserved in all other Ranging Trigger frame subvariants.

|  |  |  |  |
| --- | --- | --- | --- |
|  | B0 B3 | B4 | B5 B7 |
|  | Ranging Trigger Subtype | Reserved | Token |
| Bits: | 4 | 1 | 3 |
| * Trigger Dependent Common Info subfield format for the Ranging Trigger subvariants Poll, Sounding, Secure Sounding, and Report(11az) | | | |

The format of the Trigger Dependent Common Info subfield of Ranging Trigger frame of subvariant Passive Sounding is shown in Figure 9-102 (Trigger Dependent Common Info subfield format of the Passive Sounding Ranging Trigger frame(11az)). The Sounding Dialog Token Number subfield ~~contains a value in the range of 0 to 63~~ which identifies a Measurement Sounding phase (I2RNDP and R2I NDP announced by a Sounding Trigger frame and the Ranging NDP Announcement frame, respectively), and the same value is included in the Sounding Dialog Token field of the Ranging NDP Announcement frame transmitted within the same availability window; see 9.3.1.19 (VHT/HE/Ranging NDP Announcement frame format(11ax)(11az)).

|  |  |  |  |
| --- | --- | --- | --- |
|  | B0 B3 | B4 B9 | B10 B15 |
|  | Ranging Trigger Subtype | Reserved | Sounding Dialog Token Number |
| Bits: | 4 | 6 | 6 |
| * Trigger Dependent Common Info subfield format of the Passive Sounding Ranging Trigger frame(11az) | | | |

The value of the Ranging Trigger Subtype subfield for the Ranging Trigger frame is defined in Table 9-56 (Ranging Trigger Subtype subfield encoding(11az)).

|  |  |
| --- | --- |
| * Ranging Trigger Subtype subfield encoding(11az) | |
| Ranging Trigger Subtype subfield value | Ranging Trigger frame subvariant |
| 0 | Poll |
| 1 | Sounding |
| 2 | Secure Sounding |
| 3 | Report |
| 4 | Passive Sounding |
| 5–15 | Reserved |

The RA field, and the CS Required and UL BW subfields in the Common Info field of the Ranging Trigger frame are identical to the Basic Trigger frame described in 26.5.2 (UL MU operation), 35.5.2 (EHT UL MU operation) and 9.3.1.22 (Trigger frame format(11ax)), except that the RA field in Ranging Trigger frames with only one User Info field may be either an individual address or the broadcast address.(#6026)

The More TF subfield of the Common Info field of the Ranging Trigger frame indicates whether a subsequent Poll Ranging Trigger is scheduled for transmission within the availability window as defined in 11.21.6.4.3 (TB ranging measurement exchange(11az)).

When a Ranging Trigger frame is addressed to ISTAs ~~that all have~~ in a TB ranging measurement exchange, see 11.21.6.4.3 (TB ranging measurement exchange(11az)), with the same RSTA’s BSSID, the TA field of the Ranging Trigger frame is set to the RSTA’s address. The TA field is set to the transmitted BSSID, if the Trigger frame is addressed to a set of ISTAs in which at least two ISTAs have a TB ranging measurement exchange with different BSSIDs in the Multiple BSSID set of the RSTA.

* Subvariants of Ranging Trigger variant(11az)
* Poll subvariant

The format of the User Info field in the Poll Ranging Trigger frame is defined in Figure 9-103 (User Info field format for the Poll and Report Ranging Trigger(11az)).

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | B0 B11 | B12 B19 | B20 | B21 B24 | B25 | B26 B31 | B32 B38 | B39 |
|  | AID12/RSID12 | RU Allocation | UL FEC Coding Type | UL HE-MCS | UL DCM | SS Allocation /  RA-RU  Information | UL Target Receive Power | ~~Reserved~~ PS160 |
| Bits: | 12 | 8 | 1 | 4 | 1 | 6 | 7 | 1 |
| * User Info field format for the Poll and Report Ranging Trigger(11az) | | | | | | | | |

The AID12/RSID12 subfield carries either the 12 LSBs of the AID for an associated ISTA or the 12 LSBs of the RSID for an unassociated ISTA. The ~~RU Allocation,~~ UL FEC Coding Type, ~~UL HE-MCS, UL DCM, SS Allocation/RA-RU Information~~, UL Target Receive Power subfields are identical to the corresponding subfield in the Basic Trigger frame; see 9.3.1.22 (Trigger frame format(11ax)).

If the Poll Ranging Trigger frame is soliciting an HE TB PPDU:

— The RU Allocation, UL DCM and SS Allocation/RA-RU Information subfields are identical to the corresponding subfields in the HE variant User Info field (9.3.1.22.4 (HE variant User Info field).

— The UL MCS subfield is identical to the UL HE MCS subfield in the HE variant User Info field.

— The PS160 subfield is reserved.

If the Poll Ranging Trigger frame is soliciting an EHT TB PPDU:

— The RU Allocation, SS Allocation/RA-RU Information and PS160 subfields are identical to the corresponding subfields in the EHT variant User Info field (9.3.1.22.5 (EHT variant User Info field)).

— The UL MCS subfield is identical to the UL EHT MCS subfield in the EHT variant User Info field.

— The UL DCM subfield is reserved.

The Trigger Dependent User Info subfield is not present in the Poll Ranging Trigger frame.

* Sounding subvariant

The format of the User Info field in the Sounding Ranging Trigger frame is defined in Figure 9-104 (User Info field format for Sounding subvariant(11az)).

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | B0 B11 | B12 B20 | B21 B23 | B24 B25 | B26 B31 | B32 B38 | B39 |
|  | AID12/RSID12 | Reserved | I2R Rep | Reserved | SS Allocation /  RA-RU Information | UL Target Receive Power | Reserved |
| Bits: | 12 | 9 | 3 | 2 | 6 | 7 | 1 |
| * User Info field format for Sounding subvariant(11az) | | | | | | | |

The Trigger Dependent User Info subfield is not present in the Sounding Ranging Trigger frame.

The AID12/RSID12 subfield is identical to the corresponding subfield in the Poll Ranging Trigger frame.

The I2R Rep subfield indicates the number of ~~HE-~~LTF repetitions in the corresponding HE TB Ranging NDP or EHT TB Ranging NDP from the STA indicated in the AID12/RSID12 subfield; the I2R Rep subfield is set to the number of ~~HE-~~LTF repetitions minus 1. The value of the I2R Rep subfield is the same in all User Info fields in a single Trigger frame. If the Sounding 9 Ranging Trigger frame is soliciting an HE TB Ranging NDP, t~~T~~he SS Allocation/RA-RU Information and UL Target Receive Power subfields are identical to the corresponding subfields in the Basic Trigger frame; see 9.3.1.22.4 (~~Trigger frame format(11ax)~~ HE variant User Info field). If the Sounding Ranging Trigger frame is soliciting an EHT TB Ranging NDP, the SS Allocation/RA-RU Information and UL Target Receive Power subfields are identical to the corresponding subfields in the EHT variant User Infor field of a Basic Trigger frame; see 9.3.1.22.5 (EHT variant User Info field).

In both the HE variant Common Info field and the EHT variant Common Info field, the UL STBC, LDPC Extra Symbol Segment, Pre-FEC Padding Factor, and PE Disambiguity subfields are reserved.

The GI And HE-LTF Type subfield in the HE variant Common Info field is set to 1 (2x HE-LTF + 1.6 ms GI). The GI And HE/EHT-LTF Type subfield in the EHT variant Common Info field is set to 1 (2x EHT-LTF + 1.6 μs GI). The MU-MIMO HE-LTF Mode subfield in the HE variant Common Info field is set to 0 (HE single stream pilot HE-LTF mode).

The Doppler subfield in the HE variant Common Info field is set to 0.

NOTE—The UL Length subfield of a Trigger frame is computed using Equation (27-11) (see 26.5.2.2.4 (Allowed settings of the Trigger frame fields and TRS Control subfield)), which is based on the TXTIME computed in 27.4.3 (TXTIME and PSDU\_LENGTH calculation). In case of Sounding Ranging Trigger frame, the resulting UL Length value is equivalent to 13 + 6 × *NLTF\_REP* × *N~~HE-~~LTF*, where *NLTF-REP* is the number of ~~HE-~~LTF repetitions (given by the I2R Rep subfield value plus 1) and *N~~HE-~~LTF* is the number of HE-LTF symbols (given by the Number Of HE-LTF Symbols And Midamble Periodicity subfield, see Figure 9-87a (HE variant Common Info field format) or is the Number Of HE/EHT-LTF Symbols subfield, see Figure 9-87b (EHT variant Common Info field format)).

* Secure sounding subvariant

The format of the User Info field in the Secure Sounding Ranging Trigger is defined in Figure 9-105 (User Info field for Secure Sounding subvariant(11az)). There is a single User Info field that is not a Special User Info field in a Secure Sounding Ranging Trigger frame.

The AID12/RSID12 subfield is identical to the corresponding subfield in the Poll Ranging Trigger frame.

The I2R Rep subfield is identical to the corresponding subfield in the Sounding Ranging Trigger frame.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | B0 B11 | B12 B20 | B21 B23 | B24 B25 | B26 B31 | B32 B38 | B39 | B40 B55 |
|  | AID12/RSID12 | Reserved | I2R Rep | Reserved | SS Allocation /  RA-RU Information | UL Target Receive Power | Reserved | Trigger Dependent User Info (SAC) |
| Bits: | 12 | 9 | 3 | 2 | 6 | 7 | 1 | 16 |
| * User Info field for Secure Sounding subvariant(11az) | | | | | | | | |

The SS Allocation/RA-RU Information and UL Target Receive Power subfields are identical to the corresponding subfields in the ~~Basic~~ Sounding Ranging Trigger frame~~; see 9.3.1.22 (Trigger frame format(11ax))~~.

The Trigger Dependent User Info subfield is present in the Secure Sounding Ranging Trigger frame. The Trigger Dependent User Info subfield carries the Sequence Authentication Code (SAC) field. The SAC subfield provides the authentication information for the LTF Sequence Generation information used for the I2R sounding associated with the measurement instance; see 11.21.6.4.5 (Secure ~~HE-~~LTF in the TB and non-TB ranging measurement exchange protocol(11az)). The length of this subfield is 16 bits.

NOTE—For measurement exchange with secure HE-LTF, the I2R Rep is set to the RSTA Assigned I2R Rep; see 11.21.6.3.4 (Negotiation for secure ~~HE-~~LTF in the TB and non-TB ranging measurement exchange).

~~In the Common Info field, the MU-MIMO HE-LTF Mode, UL STBC, LDPC Extra Symbol Segment, Pre-FEC Padding Factor, and PE Disambiguity subfields are reserved. The GI And HE-LTF Type and Doppler subfields in the~~ The HE variant Common Info field and the EHT variant Common Info field are set as in the Sounding Ranging Trigger frame.

* Report subvariant

The format of the User Info field in the Report Ranging Trigger frame is defined in Figure 9-103 (User Info field format for the Poll and Report Ranging Trigger(11az)) and the subfields of the User Info field are identical to the corresponding subfields in the Poll Ranging Trigger frame soliciting an HE TB PPDU or an EHT TB PPDU.

The Trigger Dependent User Info subfield is not present in the Report Ranging Trigger frame.

* Passive sounding subvariant

The Passive Sounding Ranging Trigger frame follows the definition of the Sounding Ranging Trigger frame except that the RA field is always set to the broadcast address. There is a single User Info field that is not a Special User Info field in a Passive Sounding Ranging Trigger frame.

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| --- | --- | --- | --- | --- | --- |
| **CID** | **Clause** | **Page** | **Comment** | **Proposed Change** | **Resolution** |
| 1109 | 9.4.2 | 22.02 | An update on Table 9-371 (Extended RSN Capabilities field) with respect to the "Secure HE-LTF Support" in REVme D4.1 is missing in 11bk Subclause 9.4.2.240 (RSNXE). | Please inlcude a change of Table 9-371 (Extended RSN Capabilities field) from REVme D4.1 Subclause 9.4.2.240 (RSNXE) with respect to row Bit 8 "Secure HE-LTF Support" as follows: Bit 8  Information Secure LTF Support  Note A STA sets the Secure LTF Support field to 1 when dot11SecureLTFImplemented is true. Otherwise, the STA sets the Secure LTF Support field to 0. See 11.21.6.4.5 (Secure LTF in the TB and non-TB ranging measurement exchange protocol). | Revised  <https://mentor.ieee.org/802.11/dcn/24/11-24-0213-01-00bk-lb279-comment-resolution-for-cids-in-sec-9-part-2.docx> |

*Resolution for CIDs 1109*

*TGbk editor, modify Table 9-371 in REVmeD4.2 P1399 related to row bit 8 as follows:*

|  |  |  |
| --- | --- | --- |
| 8(11az) | Secure ~~HE-~~LTF Support | A STA sets the Secure ~~HE-~~LTF Support field to 1 when dot11SecureLTFImplemented is true. Otherwise, the STA sets the Secure ~~HE-~~LTF Support field to 0. See 11.21.6.4.5 (Secure ~~HE-~~LTF in the TB and non-TB ranging measurement exchange protocol(11az)). |

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| **CID** | **Clause** | **Page** | **Comment** | **Proposed Change** | **Resolution** |
| 1019 | 9.4.2.298 | 0.00 | It seems that 802.11az-2022 is used as the baseline as noted in pp.ll 22.12. But 802.11-REVme/D4.1 should be the one. For example, Ranging Parameter element is 9.4.2.301 in 802.11-REVme/D4.1. | Use 802.11-REVme/D4.1 as the baseline. Correct the subclause numbers, table numbers, figure numbers, the baseline text, and the instructions throughout the draft. | Revised  <https://mentor.ieee.org/802.11/dcn/24/11-24-0213-01-00bk-lb279-comment-resolution-for-cids-in-sec-9-part-2.docx> |
| 1075 | 9.4.2.298 | 22.03 | "9.4.2.298 Ranging Parameters element". Wrong section number. Should be 9.4.2.301. | Use correct references (i.e. references to 802.11-REVme/D4.1). Similar for figure numbering. | Revised  <https://mentor.ieee.org/802.11/dcn/24/11-24-0213-01-00bk-lb279-comment-resolution-for-cids-in-sec-9-part-2.docx> |

*Resolution for CIDs 1109*

*TGbk editor, change the text in P22L4-5 as follows:*

***Change the Max R2I STS > 80 MHz and Max I2R STS > 80 MHz subfields in Figure* ~~9-788en~~ 9-1031 in REVmeD4.2 in P1528L16-43** ~~4~~ ***as follows. ~~(#202308-01)~~***

*Also*

*TGbk editor, change the lable in P22L9 from Figure 9-788en to Figure 9-1031*

**References: P802.11bkD1.0, P802.11beD5.0 & P802.11REVmeD4.0**