IEEE P802.11  
Wireless LANs

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| CC28 CR of Secure TB Ranging Measurement Exchange Protocol | | | | |
| Date: 2019-04-12 | | | | |
| Author(s): | | | | |
| Name | Company | Address | Phone | Email |
| Yongho Seok | MediaTek |  |  | [yongho.seok@mediatek.com](mailto:yongho.seok@mediatek.com) |
| ChaoChun Wang | MediaTek |  |  |  |
| James Yee | MediaTek |  |  |  |

**Abstract**

This submission proposes resolutions of comments received from TGaz LB240.

(The proposed change is based on TGaz Draft 1.0.)

* CIDs: 2026, 2203, 2027, ~~1188~~, 2415, 2206, 2210, 1260, 1828, 1831, 1830, 1832, 1833, 1582, 2208, 2219 (~~16~~15 CIDs)

Interpretation of a Motion to Adopt

A motion to approve this submission means that the editing instructions and any changed or added material are actioned in the TGaz Draft. This introduction is not part of the adopted material.

***Editing instructions formatted like this are intended to be copied into the TGaz Draft (i.e. they are instructions to the 802.11 editor on how to merge the text with the baseline documents).***

***TGaz Editor: Editing instructions preceded by “TGaz Editor” are instructions to the TGaz editor to modify existing material in the TGaz draft. As a result of adopting the changes, the TGaz editor will execute the instructions rather than copy them to the TGaz Draft.***

| **CID** | **Page** | **Clause** | **Comment** | **Proposed Change** | **Resolution** |
| --- | --- | --- | --- | --- | --- |
| 2026 | 16.26 | 8.3.5.19.2 | [Re-raising this comment from the comment collection, as it is not possible to determine from 18/1544r8 whether/how it was addressed. References are to the CC draft and hence may be wrong against D1.0.] " make the randomized LTF sequence" -- what does "make" mean here? | Use a clearer verb | Revised-  The text changes for the CID 202 that is cited by the commenter had been applied in D1.0.  Please refer the below related submission. <https://mentor.ieee.org/802.11/dcn/19/11-19-0093-01-00az-cc28-cr-mac-miscellaneous.docx>  TGaz editor needs no more text changes for this CID. |
| 2203 | 17.01 | 8.3.5.20 | [Re-raising this comment from the comment collection, as it is not possible to determine from 18/1544r8 whether/how it was addressed. References are to the CC draft and hence may be wrong against D1.0.] PHY-RXLTFSEQUENCE.confirm is not used anywhere so has no value (nothing is on hold until it comes back) | Delete this subclause | Rejected-  The CID 441 that is cited by the commenter had been rejected with the following reason.  One or more PHY-RXLTFSEQUENCE.request primitives can be issued in a secure TB ranging mode.  In such case, the confirm primitive is needed.  Please refer the PHY-DATA.confirm primitive in the baseline. |
| 2027 | 17.10 | 8.3.5.20.2 | [Re-raising this comment from the comment collection, as it is not possible to determine from 18/1544r8 whether/how it was addressed. References are to the CC draft and hence may be wrong against D1.0.] As lines 11 and 12 say, there are no parameters | Copy the wording for other parameter-less primitvies from the baseline | Revised-  The text changes for the CID 202 that is cited by the commenter had been applied in D1.0.  Please refer the below related submission. <https://mentor.ieee.org/802.11/dcn/19/11-19-0093-01-00az-cc28-cr-mac-miscellaneous.docx>  TGaz editor needs no more text changes for this CID. |
| ~~1188~~ | ~~21.03~~ | ~~8.3.5~~ | ~~The is no PHY-SAP interface to indicate to the Receiver which sequences should be used in future secure EMDG TRN fields~~ | ~~Add a primitive to send those sequences to the PHY, or modify the PHY\_RTLTFSEQUENCES to enable usage in DMG~~ | ~~Need submission.~~ |
| 2415 | 21.18 | 8.3.5.20.1 | "HE Ranging NDP PPDU and HE TB Randing NDP PPDU" Is there a case when both HE Ranging NDP and HE TB Ranging NDP are received? I think there won't be such a case, so "and" should be "or". | As in comment. | Revised-  Agree in principle.  TGaz editor makes changes as specified in 11-19/0602r0 for CID 2415. |
| **Proposed Text Updates: CID 2415**  ***TGaz Editor: Change the sub-clause 8.3.5.20.1 as the followings:***    This primitive is a request by the MAC sublayer to the local PHY entity to provide the LTF sequence generation information parameters for the receipt of the HE Ranging NDP PPDU ~~and~~ or HE TB Ranging NDP PPDU. | | | | | |
| 2206 | 63.29 | 11.22.6.4.6.1 | [Re-raising this comment from the comment collection, as it is not possible to determine from 18/1544r8 whether/how it was addressed. References are to the CC draft and hence may be wrong against D1.0.] "The LTF sequence of an UL NDP transmitted a SIFS after the Ranging NDP Announcement frame and the LTF sequence of a DL NDP received a SIFS after the UL NDP" -- is not specific enough | Change the "an"s to "the"s. Ditto next paras | Revised-  The text changes for the CID 445 that is cited by the commenter had been applied in D1.0.  Please refer the below related submission.  <https://mentor.ieee.org/802.11/dcn/18/11-18-1781-03-00az-cc28-cr-secure-non-tb-ranging-measurement-exchange-protocol.docx>  TGaz editor needs no more text changes for this CID. |
| 2210 | 64.17 | 11.22.6.4.6.1 | [Re-raising this comment from the comment collection, as it is not possible to determine from 18/1544r8 whether/how it was addressed. References are to the CC draft and hence may be wrong against D1.0.] " The 17 RSTA shall respond with the DL NDP and a Location Measurement Report frame a SIFS after 18 the DL NDP" -- huh? A DL NDP afer a DL NDP? | Reword to cmake it clearer | Revised-  The text changes for the CID 456 that is cited by the commenter had been applied in D1.0.  Please refer the below related submission.  <https://mentor.ieee.org/802.11/dcn/18/11-18-1781-03-00az-cc28-cr-secure-non-tb-ranging-measurement-exchange-protocol.docx>  TGaz editor needs no more text changes for this CID. |
| 1260 | 108.20 | 11.22.6.4.6.1 | "An ISTA that sends a Ranging NDP Announcement frame" - I think the intent is "secure" NDP announcement frame. | replace with "An ISTA that sends a secure Ranging NDP Announcement frame" | Revised-  Agree in principle.  But, the secure Ranging NDP Announcement frame is also not defined in the spec.  TGaz editor makes changes as specified in 11-19/0602r0 for CID 1260. |
| **Proposed Text Updates: CID 1260**  ***TGaz Editor: Change the first sentence of the sub-clause 11.22.6.4.6.1 (Secure Non-TB ranging mode ) as the followings:***  When an ISTA with dot11SecureLTFImplemented equal to true received an initial Fine Timing Measurement frame from a RSTA where the Secure LTF Required subfield in the Ranging Parameters field in the received initial Fine Timing Measurement frame is equal to 1, the ~~An~~ ISTA that sends a Ranging NDP Announcement frame to the ~~a~~ RSTA shall set:  ***TGaz Editor: Change the first sentence of the sub-clause 11.22.6.4.6.2 (Secure TB ranging mode ) as the followings:***  When a RSTA with dot11SecureLTFImplemented equal to true transmitted an initial Fine Timing Measurement frame to an ISTA where the Secure LTF Required subfield in the Ranging Parameters field in the transmitted initial Fine Timing Measurement frame is equal to 1, the ~~A~~ RSTA that sends a Ranging Secure Sounding Trigger frame to the ~~an~~ ISTA shall set: | | | | | |
| 1828 | 109.00 | 11.22.6.4.6.1 | In NTB mode in the abnormal case the ISTA does not know the next SAC value and transmit SAC = 0 (e.g. when preivous LMR was incorrectly received), the RSTA should be allowed to transmit either the known sequence or any other sequence (e.g. such as the one it should have transmitted if the SAC was correct) , this is in order to prevent critical time constraint between NDPA receive and DL NDP transmit. the measurement itself is useless (lost). this will align NTB and TB behavior. | Align NTB operation with TB operation for the case where the SAC is not available at the ISTA. | Revised-  Agree in principle.  As in the comment, a STA can use either the known sequence or any other sequence for HE-LTFs in the secure ranging measurement.  TGaz editor makes changes as specified in 11-19/0602r0 for CID 1828. |
| 1831 | 109.14 | 11.22.6.4.6.1 | "When a RSTA receives a Ranging NDP Announcement from an ISTA frame in which the SAC subfield in the STA Info SAC field is set to 0, the RSTA shall: -- Issue a PHY-RXLTFSEQUENCE.request primitive with a LTFVECTOR parameter that is set to Secure HE-LTF with pre-determined sequence;" The definition of predetermeand seuqnece is missing | define the pedetermeand sequence | Revised-  Agree in principle.  A STA can use either the known sequence or any other sequence for HE-LTFs in the secure ranging measurement.  The known sequence can be the regular HE-LTF.  TGaz editor makes changes as specified in 11-19/0602r0 for CID 1831. |
| 1830 | 109.06 | 11.22.6.4.6.1 | "An ISTA that sends a Ranging NDP PPDU a SIFS after transmission of the Ranging NDP Announcement frame to a RSTA shall set the TXVECTOR parameter LTF\_SEQUENCE as follows:... -- Otherwise the LTF sequence generation information in the Secure LTF Parameters field in the..." the MAC receives the secure generation information and generate Secure-LTF-bits-DL and Secure-LTF-bits-UL based on that, then the PHY convert this 4P+3 bit per symbol into a Golay sequence and CSD. | Modify the text as follows: "-- Otherwise set the Secure-LTF-bits-DL and the Secure-LTF-bits-DL based on the LTF sequence generation information in the Secure LTF Parameters field in the last received Fine Timing Measurement frame or last received Location Measurement Report frame from the RSTA " | Revised-  Agree in principle.  As in comment, the more exact terminology like Secure-LTF-bits-DL and Secure-LTF-bits-UL is preferred.  TGaz editor makes changes as specified in 11-19/0602r0 for CID 1830. |
| 1832 | 109.29 | 11.22.6.4.6.1 | "Issue a PHY-RXLTFSEQUENCE.request primitive with a LTFVECTOR parameter that is set to the LTF sequence generation information in the Secure LTF Parameters field" The Secure LTF parameters are received by the MAC from RSTA but are converted to 4P+3 bits per symbol. The 4P+3 bits per sybmol is converted by PHY to LTF sequence. | Replace TXVECTOR and RXLTF LTF sequence generation information field with Secure-LTF-bits-DL and Secure-LTF-bits-UL described in section 11.22.6.3.4 | Revised-  Agree in principle.  As in comment, the more exact terminology like Secure-LTF-bits-DL and Secure-LTF-bits-UL is preferred.  TGaz editor makes changes as specified in 11-19/0602r0 for CID 1832. |
| **Proposed Text Updates: CID 1828, 1831, 1830, 1832**  ***TGaz Editor: Change the sub-clause 11.22.6.4.6.1 (Secure Non-TB ranging mode ) as the followings:***  An ISTA that sends a Ranging NDP PPDU a SIFS after transmission of the Ranging NDP Announcement frame to a RSTA shall set the TXVECTOR parameter LTF\_SEQUENCE as follows:  — ~~Secure HE-LTF with pre-determined sequence~~ Either the Secure-LTF-bits-UL for generating any secure HE-LTF or null (#1828, 1831), if the SAC subfield in the STA Info SAC field in the Ranging NDP Announcement is set to a value of 0;  — Otherwise the Secure-LTF-bits-UL (see 11.22.6.4.6.3 (Secure LTF Generation Information)) based on (#1830, 1832) LTF sequence generation information in the Secure LTF Parameters field in the last received Fine Timing Measurement frame or last received Location Measurement Report frame from the RSTA.  …  After transmission of the Ranging NDP Announcement frame to the RSTA, the ISTA’s MAC sublayer shall issue a PHY-RXLTFSEQUENCE.request primitive with a LTFVECTOR parameter that is set ~~to the LTF sequence generation information in~~ as follows:  — ~~Secure HE-LTF with pre-determined sequence~~ Either the Secure-LTF-bits-DL for generating any secure HE-LTF or null (#1828, 1831), if the SAC subfield in the STA Info SAC field in the Ranging NDP Announcement is set to 0  —Otherwise the Secure-LTF-bits-DL (see 11.22.6.4.6.3 (Secure LTF Generation Information)) based on (#1830, 1832) Secure LTF Parameters field in the last received Fine Timing Measurement frame or last received Location Measurement Report frame from the RSTA.  …  When a RSTA receives a Ranging NDP Announcement from an ISTA frame in which the SAC subfield in the STA Info SAC field is set to 0, the RSTA shall:  — Issue a PHY-RXLTFSEQUENCE.request primitive with a LTFVECTOR parameter that is set to ~~Secure HE-LTF with pre-determined sequence~~ either the Secure-LTF-bits-UL for generating any secure HE-LTF or null (#1828, 1831);  — Send an HE Ranging NDP with the TXVECTOR parameter LTF\_SEQUENCE set to ~~Secure HE-LTF with pre-determined sequence~~ either the Secure-LTF-bits-DL for generating any secure HE-LTF or null (#1828, 1831) to the ISTA, if the RSTA receives an HE Ranging NDP from the ISTA a SIFS after the ranging NDP Announcement frame;  — Send a Location Measurement Report frame that includes the Secure LTF Parameters field to the ISTA, if the RSTA receives an HE Ranging NDP from the ISTA a SIFS after the ranging NDP Announcement frame.  When a RSTA receives a Ranging NDP Announcement frame from an ISTA in which the value of the SAC subfield in the STA Info SAC field is equal to the value of the LTF Generation SAC subfield in the Secure LTF Parameters field in the last transmitted Fine Timing Measurement frame or last transmitted Location Measurement Report frame to the ISTA, the RSTA shall:  — Issue a PHY-RXLTFSEQUENCE.request primitive with a LTFVECTOR parameter that is set to the Secure-LTF-bits-UL (see 11.22.6.4.6.3 (Secure LTF Generation Information)) based on (#1830, 1832) LTF sequence generation information in the Secure LTF Parameters field in the last transmitted Fine Timing Measurement frame or last transmitted Location Measurement Report frame to the ISTA;  — Send an HE Ranging NDP with the TXVECTOR parameter LTF\_SEQUENCE set to the Secure-LTF-bits-DL (see 11.22.6.4.6.3 (Secure LTF Generation Information)) based on (#1830, 1832) LTF sequence generation information in the Secure LTF Parameters field in the last transmitted Fine Timing Measurement frame or last transmitted Location Measurement Report frame to the ISTA, if the RSTA receives an HE Ranging NDP from the ISTA a SIFS after the ranging NDP Announcement frame;  — Send a Location Measurement Report frame that includes the Secure LTF Parameters field to the ISTA, if the RSTA receives an HE Ranging NDP from the ISTA a SIFS after the ranging NDP Announcement frame.  …  When a STA sending an HE Ranging NDP sets the TXVECTOR parameter LTF\_SEQUENCE to ~~Secure HE-LTF with pre-determined sequence~~ either a bit string (e.g., the Secure-LTF-bits-DL or Secure-LTF-bits-DL) for generating any secure HE-LTF or null (#1828, 1831), the STA shall not use the ToD value of HE Ranging NDP for the secure range measurement.  When a STA receiving an HE Ranging NDP sets the LTFVECTOR parameter in the PHY-RXLTFSEQUENCE.request primitive to ~~Secure HE-LTF with pre-determined sequence~~ either a bit string (e.g., the Secure-LTF-bits-DL or Secure-LTF-bits-DL) for generating any secure HE-LTF or null (#1828, 1831), the STA shall not use the ToA value of the HE Ranging NDP and set the Invalid Measurement Indication subfield to 1 in the ToA Error field in the Location Measurement Report carrying the ToA value of the HE Ranging NDP.  ***TGaz Editor: Change the sub-clause 11.22.6.4.6.2 (Secure TB ranging mode ) as the followings:***  After transmission of the Ranging Secure Sounding Trigger frame to the ISTA, the RSTA’s MAC sublayer shall issue a PHY-RXLTFSEQUENCE.request primitive with a LTFVECTOR parameter LTF\_SEQUENCE that is set to as follows:  — ~~secure HE-LTF with predetermined sequence~~ Either the Secure-LTF-bits-UL for generating any secure HE-LTF or null (#1828, 1831), if the SAC subfield in the Trigger Dependent User Info field in the Ranging Secure Sounding Trigger frame 0.  — Otherwise the Secure-LTF-bits-UL (see 11.22.6.4.6.3 (Secure LTF Generation Information)) based on (#1830, 1832) LTF sequence generation information in the Secure LTF Parameters field in the last transmitted Fine Timing Measurement frame or last transmitted Location Measurement Report frame to the ISTA.  …  When the RSTA receives the HE TB Ranging NDP from the ISTA, the RSTA shall:  (a) Send a Ranging NDP Announcement frame.  (b) Send an HE Ranging NDP with the TXVECTOR parameter LTF\_SEQUENCE set to as follows:  — ~~secure HE-LTF with predetermined sequence~~ Either the Secure-LTF-bits-DL for generating any secure HE-LTF or null (#1828, 1831), if the SAC subfield in the Trigger Dependent User Info field in the Ranging Secure Sounding Trigger frame 0.  — Otherwise the Secure-LTF-bits-DL (see 11.22.6.4.6.3 (Secure LTF Generation Information)) based on (#1830, 1832) LTF sequence generation information in the Secure LTF Parameters field in the last transmitted Fine Timing Measurement frame or last transmitted Location Measurement Report frame to the ISTA.  (c) Send a Location Measurement Report frame that includes the Secure LTF Parameters field to the ISTA.  …  When an ISTA receives a Ranging Secure Sounding Trigger frame from a RSTA in which the value of the SAC subfield in the Trigger Dependent User Info field is equal to the value of the LTF Generation SAC subfield in the Secure LTF Parameters field in the last received Fine Timing Measurement frame or last received Location Measurement Report frame from the RSTA, the ISTA shall:  — Send an HE TB Ranging NDP with the TXVECTOR parameter LTF\_SEQUENCE set to ~~either secure HE-LTF with predetermined sequence or~~ the Secure-LTF-bits-UL (see 11.22.6.4.6.3 (Secure LTF Generation Information)) based on (#1830, 1832) LTF sequence generation information in the Secure LTF Parameters field in the last received Fine Timing Measurement frame or last received Location Measurement Report frame from the RSTA;  — Issue a PHY-RXLTFSEQUENCE.request primitive with a LTFVECTOR parameter LTF\_SEQUENCE that is set to ~~either secure HE-LTF with predetermined sequence or~~ the Secure-LTF-bits-DL (see 11.22.6.4.6.3 (Secure LTF Generation Information)) based on (#1830, 1832) LTF sequence generation information in the Secure LTF Parameters field in the last received Fine Timing Measurement frame or last received Location Measurement Report frame from the RSTA;  …  When an ISTA receives a Ranging Secure Sounding Trigger frame from a RSTA in which the value of the SAC subfield in the Trigger Dependent User Info field is not equal to the value of the LTF Generation SAC subfield in the Secure LTF Parameters field in the last received Fine Timing Measurement frame or last received Location Measurement Report frame from the RSTA, the ISTA shall:  a) Send an HE TB Ranging NDP with the TXVECTOR parameter LTF\_SEQUENCE set to ~~either secure HE-\_LTF with predetermined sequence or the LTF sequence generation information in the Secure LTF Parameters field in the last received Fine Timing Measurement frame or last received Location Measurement Report frame from the RSTA~~ either the Secure-LTF-bits-UL for generating any secure HE-LTF or null (#1828, 1831);  b) Issue a PHY-RXLTFSEQUENCE.request primitive with a LTFVECTOR parameter LTF\_SEQUENCE that is set to ~~either Secure HE-\_LTF with predetermined sequence or the LTF sequence generation information in the Secure LTF Parameters field in the last received Fine Timing Measurement frame or last received Location Measurement Report frame from the RSTA~~ either the Secure-LTF-bits-DL for generating any secure HE-LTF or null (#1828, 1831);  …  When an RSTA sending an HE Ranging NDP sets the TXVECTOR parameter LTF\_SEQUENCE to ~~Secure HE-LTF with predetermined sequence~~ either the bit string (e.g., the Secure-LTF-bits-DL or Secure-LTF-bits-DL) for generating any secure HE-LTF or null (#1828, 1831), the RSTA shall not use the ToD value of HE Ranging NDP for the range measurement.  When a RSTA receiving an HE TB Ranging NDP sets the LTFVECTOR parameter in the PHY-RXLTFSEQUENCE.request primitive to ~~Secure HE-LTF with predetermined sequence~~ either the bit string (e.g., the Secure-LTF-bits-DL or Secure-LTF-bits-DL) for generating any secure HE-LTF or null (#1828, 1831), the RSTA shall not use the ToA value of the HE Ranging NDP and set the Invalid Measurement Indication subfield to 1 in the ToA Error field in the Location Measurement Report carrying the ToA value of the HE TB Ranging NDP.  When an ISTA sending an HE TB Ranging NDP sets the TXVECTOR parameter LTF\_SEQUENCE to ~~Secure HE-LTF with predetermined sequence~~ either the bit string (e.g., the Secure-LTF-bits-DL or Secure-LTF-bits-DL) for generating any secure HE-LTF or null (#1828, 1831), the ISTA shall not use the ToD value of HE TB Ranging NDP for the range measurement.  When an ISTA receiving an HE Ranging NDP sets the LTFVECTOR parameter in the PHY-RXLTFSEQUENCE.request primitive to ~~Secure HE-\_LTF with predetermined sequence~~ either the bit string (e.g., the Secure-LTF-bits-DL or Secure-LTF-bits-DL) for generating any secure HE-LTF or null (#1828, 1831), the ISTA shall not use the ToA value of the HE Ranging NDP, and set the Invalid Measurement Indication subfield to 1 in the ToA Error field in the Location Measurement Report carrying the ToA value of the HE Ranging NDP if the Location Measurement Report transmission from the ISTA was negotiated.  ***TGaz Editor: Change Table 28-1 (TXVECTOR and RXVECTOR parameters) as follows:***   |  |  |  |  |  | | --- | --- | --- | --- | --- | | Table 28-1—TXVECTOR and RXVECTOR parameters | | | | | | Parameter | Condition | Value | TXVECTOR | RXVECTOR | | LTF\_SEQUENCE | FORMAT is either HE\_SU or HE\_TB and APEP\_LENGTH is 0 | Indicates the LTF sequence generation information ~~to make the randomized LTF sequence~~ used in the ~~HEz sounding NDP PPDU~~ HE Ranging NDP PPDU or HE TB Ranging NDP PPDU.  ~~The LTF sequence generation information is defined in 9.4.2.251 (Secure LTF Parameters).~~  Set to the Secure-LTF-bits-DL when the secure HE-LTFs are used and the UPLINK\_FLAG parameter is set to 0 (see 11.22.6.4.6 (Secure Non-TB and -TB Ranging Measurement Exchange Protocol)).  Set to the Secure-LTF-bits-UL when the secure HE-LTFs are used and the UPLINK\_FLAG parameter is set to 1 (see 11.22.6.4.6 (Secure Non-TB and -TB Ranging Measurement Exchange Protocol)).  Set to null if the regular HE-LTFs are used. | O | N | | Otherwise | See corresponding entry in Table 21-1 (TXVECTOR and RXVECTOR parameters). | | |   ***TGaz Editor: Delete 5th entry (LTF\_SEQUENCE parameter) of Table 28-1 (TXVECTOR and RXVECTOR parameters):***  ***TGaz Editor: Change Table 28-2a (LTFVECTOR parameters) as follows:***  Table 28-2a—LTFVECTOR parameters   |  |  | | --- | --- | | **Parameter** | **Value** | | LTF\_SEQUENCE | Indicates the LTF sequence generation information ~~to make the randomized LTF sequence~~ used in the ~~HEz sounding NDP PPDU~~ HE Ranging NDP PPDU and HE TB Ranging NDP.  ~~The LTF sequence generation information is defined in 9.4.2.251 (Secure LTF Parameters).~~  Set to the Secure-LTF-bits-DL when receiving the secure HE-LTFs sent by a RSTA. (see 11.22.6.4.6 (Secure Non-TB and -TB Ranging Measurement Exchange Protocol)).  Set to the Secure-LTF-bits-UL when receiving the secure HE-LTFs sent by an ISTA. (see 11.22.6.4.6 (Secure Non-TB and -TB Ranging Measurement Exchange Protocol)).  Set to null if receiving the regular HE-LTFs. | | | | | | |
| 1833 | 111.05 | 11.22.6.4.6.1 | "When there is a transmission failure within a secure measurement exchange sequence, the recovery procedure of the LTF Generation SAC and its associated LTF Sequence Generation Information parameters is illustrated in Figure 11-o (Error recovery of secure measurement exchange in Non-TB mode)." normative behavior needs to be defined in text not figures. | Reformat figure to normative text. | Rejected-  The normative behaviors are already described. Figure shows an example of the error recovery normative behaviour. |
| 1582 | 116.35 | 11.22.6.4.6.2 | Equation (11-aa) shows in the secure TB ranging mode, the value of Offset in STA info subfield of NDPA is a variable, but when the DL Rep and DL N\_STS is determined, the value of Offset is also determined. Offset\_i = Offset\_{i-1} + DL Rep\_{i-1}\*DL N\_STS\_{i-1} | The equation needs to be revised according to the comment | Rejected-  In the Ranging NDPA frame, there is no requirement that the STA Info field shall be listed the ascending order of the Offset subfield value. The changed equation is not correct. |
| 2208 |  | 11.22.6.4.6 | [Re-raising this comment from the comment collection, as it is not possible to determine from 18/1544r8 whether/how it was addressed. References are to the CC draft and hence may be wrong against D1.0.] Most if not all of the "a value of"s are not specifc enough | Change them to "the value of". Similar problem with "keep a current" -> "keep the current" | Revised-  The text changes for the CID 451 that is cited by the commenter had been applied in D1.0.  Please refer the below related submission.  <https://mentor.ieee.org/802.11/dcn/18/11-18-1781-03-00az-cc28-cr-secure-non-tb-ranging-measurement-exchange-protocol.docx>  TGaz editor needs no more text changes for this CID. |
| 2219 |  | 11.22.6.4.6 | [Re-raising this comment from the comment collection, as it is not possible to determine from 18/1544r8 whether/how it was addressed. References are to the CC draft and hence may be wrong against D1.0.] The description of the secure measurement mechanism is extremely opaque | Add a general description outlining the general principles, i.e. what the LTF carries, how this is set at the transmitted and verified at the receiver | Rejected-  Based on the comments received in Comment Collection 28, the sub-clause 11.22.6.4.6 (Secure Non-TB and -TB Ranging Measurement Exchange Protocol) has been rewritten for more clarification.  Please refer the below submissions.  <https://mentor.ieee.org/802.11/dcn/18/11-18-1781-03-00az-cc28-cr-secure-non-tb-ranging-measurement-exchange-protocol.docx>  <https://mentor.ieee.org/802.11/dcn/18/11-18-1782-02-00az-cc28-cr-secure-tb-ranging-measurement-exchange-protocol.docx> |