IEEE P802.11  
Wireless LANs

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| CR for Misc CIDs | | | | |
| Date: 2021-06-13 | | | | |
| Author(s): | | | | |
| Name | Affiliation | Address | Phone | email |
| Dibakar Das | Intel |  |  | Dibakar.das@intel.com |
| Christian Berger | NXP |  |  |  |
| Ali Raissinia | Qualcomm |  |  |  |
| Qi Wang | Apple |  |  |  |
| Nehru Bhandaru | Broadcom |  |  |  |

Abstract

This document proposes CR for following CIDs: 5451, 5450, 5449, 5428, 5427, 5396, 5393, 5234, 5229, 5218, 5196, 5195, 5194, 5180, 5174, 5172, 5171, 5170, 5169, 5135, 5042.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **CID** | **Page** | **Line** | **Clause** | **Comment** | **Proposed Change** | **Resolution** |
| 5451 | 133 | 14 | 11.21.6.3.6 | "An ISTA shall not set the Secure RTT  Measurement subfield to 1 in a request to an RSTA if the RSTA has not set the Secure RTT  Supported field in the EDMG Capabilities field to 1." The "Secure RTT Supported" field has been moved from the EDMG Capabilities element to the RSNSE element. | Replace "EDMG Capabilities" with "RSNSE element". | **Revised.**  Agreed in principle. However, this has already been corrected in draft 3.1: “An ISTA shall not set the Secure RTT Measurement subfield to 1 in a request to an RSTA if the RSTA has not set the Secure RTT Supported field in  the RXSNE to 1.”  TGaz editor: no further action needed. |
| 5450 | 131 | 24 | 11.21.6.3.4 | "If an RSTA has set the Secure LTF Support field to 1 in the RSNXE (#3940), then to request a  secure LTF measurement exchange mode with the RSTA, an ISTA with dot11SecureLTFImplemented equal to true shall set the Secure LTF Required subfield in the Ranging Parameters field in an IFTMR frame to 1. " The test in red seems to be a typo. | Please modify the text to: "If an ISTA has set the Secure LTF Support field to 1 in the RSNXE (#3940), then to request a  secure LTF measurement exchange mode with the RSTA, an ISTA with dot11SecureLTFImplemented equal to true shall set the Secure LTF Required subfield in the Ranging Parameters field in an IFTMR frame to 1. " The test in red seems to be a typo. " | **Rejected.**  The original text correctly describe the action taken by an ISTA on observing the Secure LTF Support field in the RSNXE as set by an RSTA and not an ISTA which the author proposes. Note that this text has been revised in draft 3.1 to:  “If an RSTA has set the Secure LTF Support field to 1 in the RSNXE (#3940), then to request a secure LTF measurement exchange mode with the RSTA, an ISTA with dot11SecureLTFImplemented equal to true shall include the Secure LTF subelement in the Ranging Parameters element in the IFTMR frame and set the value of the Secure LTF Required  field in the Secure LTF subelement to 1.” |
| 5449 | 131 |  | 11.21.6.3.4 | "The Secure LTF Parameters field in the initial Fine Timing Measurement frame contains an LTF  36 Generation SAC and a Secure LTF Counter (#2289) for the next measurement exchange in the  37 session when any of the following conditions are met: (#3621)". Also, as shown in Figure 9-788edn on page 89, there are two SAC related fields, i.e., "LTF Generation SAC" and "Ranging management SAC". SAC is no longer used for generating the random sequence, so only "ranging management SAC" should be kept in the 11az spec. | As in comment. | **Revised.**  Both the LTF Generation SAC and Range Measurement SAC is used in 11az ranging draft 3.1.  **TGaz editor:** Throughout 11az draft 3.1change the term “LTF Generation SAC” to“Validation SAC” and the term "Ranging management SAC" to “Measurement SAC”. |
| 5428 | 76 | 19 | 9.4.2.298 | "No max specified" is not accurate for value 3. Value 3 means no extra limits applied to the max number of LTF and the max number of LTF should take the max allowed value in the spec, which is 64 in 11az and could be other number in future generations. | Change "No max specified" to "Maximum allowed number". | **Revised.**  Changed the entry to 64.  And also removed the phrase “if value specified” in P76L28.  **TGaz editor:** make the changes identified below in https://mentor.ieee.org/802.11/dcn/21/11-21-0967-00-00az-CR-misc-cids-part1.docx. |
| 5427 | 76 | 18 | 9.4.2.298 | The second column of the table is the subfield indicating Max number of R2I/I2R LTFs. So the name "Number of LTFs" is not correct. | Change the name of second column to "Max Number of LTFs". | **Accept.**  **TGaz editor:** please make the change as suggested. |
| 5396 | 132 | 26 | 11.21.6.3.5 | The reference to value 31-43 in the heading "11.21.6.3.5 Capability Negotiation for EDCA based Ranging with the Format and Bandwidth Field set to 31-43" is misleading | Replace by "11.21.6.3.5 Capability Negotiation for EDCA based Ranging with the Format and Bandwidth Field set to value in range 31-43" | **Accept.**  **TGaz editor:** please make the change as suggested. |
| 5393 | 123 | 26 | 11.21.6.3 | "Protected Fine Timing frames may..." Normative requirements apply to an implementation. Identify the implementation (usually a STA). | A DMG STA may use Protected Fine Timing frames in an DMG EDCA based ranging session. An EDMG STA may use Protected Fine Timing frames in an EDMG EDCA based ranging session. | **Revised**  Agreed in principle. Revised the text to: “A DMG or EDMG STA may use Protected Fine Timing frames in a DMG of EDMG EDCA based ranging session respectively.”.  **TGaz editor:** make the changes identified below in https://mentor.ieee.org/802.11/dcn/21/11-21-0967-00-00az-CR-misc-cids-part1.docx. |
| 5234 | 47 | 19 | 9.3.1.22.10 | The Trigger Dependent Common Info subfield of the Ranging Trigger frame of subvariant Passive TB Sounding, depicted in Figure 9-64lb, is different from the Trigger Dependent Common Info subfield for the Ranging Trigger variant, depicted in Figure 9-64la. This subfield is used both the TB and Passive TB Ranging. To reduce the number of options in the standard it we should make these the same. | Change the Trigger Dependent Common Info subfield of the Ranging Trigger frame of subvariant Passive TB Sounding, depicted in Figure 9-64lb, to be the same as the Trigger Dependent Common Info subfield for the Ranging Trigger variant, depicted in Figure 9-64la. | **Rejected.**  There is no obvious efficiency gains in combining the two Trigger types as the range of the Token and Sounding Dialog Token Number subfield are different. |
| 5229 | 188 | 7 | 11.21.6.6.2 | What happens to an FTM session after a STA becomes associated or disassociated ? | Add a rule clarifying that an FTM session is terminated during an ongoing association or disassociation prcoedure. | **Revised**  Agreed in principle. Added text to clarify that the ranging session is terminated following a successful association or disassociation procedure.  **TGaz editor:** make the changes identified below in https://mentor.ieee.org/802.11/dcn/21/11-21-0967-00-00az-CR-misc-cids-part1.docx. |
| 5218 | 78 | 3 | 9.4.2.298 | In order to allow for more sounding, reduce the units of Max Time Between Measurements field to a value less than 10 millisecond | Change "...in units of 10 millisecond" to "...in units of X millisecond", where X is a TBD value to be discussed by the 802.11az participants | **Rejected.**  The frequency of sounding is lower bounded by the Min Time Between Measurements field whose lowest value is 100us. |
| 5196 | 146 | 16 | 11.21.6.4.3.2 | "If there are no additional polling/sounding/reporting triplets in the same availability window, the RSTA shall set the More TF subfield in the Common Info field to 0 and the RA field to the broadcast address in the TF Ranging Poll frame, and in TFs in subsequent Measurement Sounding and Measurement Reporting phases (#1978) in the same availability window." - what is the effect on the RA field?  20 window." | Either clarify if the setting of the RA field is affected by the More TF subfield and how, or remove reference to it. | **Revised.**  Agree with the commenter. When the More TF field is set to 1, the RA field needs to be broadcast to let other STAs know there is going to be another measurement exchange opportunity in this Availability Window. However, when its set to 0, we don’t need to mandate this. Deleted the corresponding text in the spec.  **TGaz editor:** make the changes identified below in https://mentor.ieee.org/802.11/dcn/21/11-21-0967-00-00az-CR-misc-cids-part1.docx. |
| 5195 | 48 | 9 | 9.3.1.22.10 | "The More TF subfield of the Common Info field of the Ranging Trigger frame is set to 1 and the RA field is set to the broadcast address to indicate that a subsequent Ranging Trigger frame of Poll subvariant is scheduled for transmission within the availability window as defined in Subclause 11.21.6.1.1 (EDCA based Ranging and TB Ranging overview). The More TF subfield of the Common Info field of the Ranging Trigger frame is set to 0 and the RA field is set to the broadcast address to indicate that no subsequent Ranging Trigger frame of Poll subvariant is scheduled for transmission within the availability window." - unclear what the effect on RA is, both cases state broadcast. | Either clarify if the setting of the RA field is affected by the More TF subfield and how, or remove reference to it. | **Revised.**  Agree with the commenter. When the More TF field is set to 1, the RA field needs to be broadcast to let other STAs know there is going to be another measurement exchange opportunity in this Availability Window. However, when its set to 0, we don’t need to mandate this. Deleted the corresponding text in the spec.  **TGaz editor:** make the changes identified below in https://mentor.ieee.org/802.11/dcn/21/11-21-0967-00-00az-CR-misc-cids-part1.docx. |
| 5194 | 145 | 1 | 11.21.6.4.3.2 | "Each Polling phase instance includes at east one (#1890) Ranging Trigger frame of subvariant Poll and at most one for which it receives response from an ISTA (#3116); see 9.3.1.22.10 (Ranging Trigger variant)." - seems swapped | Change to "Each Polling phase instance includes at east one (#1890) Ranging Trigger frame of subvariant Poll, see 9.3.1.22.10 (Ranging Trigger variant), and no more than one for which it receives a response from at least one ISTA (#3116)." | **Accept**  **TGaz editor:** please make the change as suggested. |
| 5180 | 80 | 5 | 9.4.2.298 | "The Ranging Parameters element in the IFTMR frame includes a Non-TB specific subelement and/or a TB specific subelement;" - why would it include both? | Remove the whole paragraph | **Rejected.**  An ISTA may want to signal its parameters for both NTB Ranging and TB Ranging in the same IFTMR frame. The RSTA uses this information and assign the ISTA to either a TB or NTB Ranging session. |
| 5174 | 74 | 1 | 9.4.2.298 | Not clear how is the dependance on 'requested by RSTA"? "-to 0 to indicate that it does not transmit I2R LMR at the end of each measurement exchange, if requested by the RSTA, or - to 1 to indicate that transmits I2R LMR at the end of each measurement exchange, if requested by the RSTA." | Change to "-to 0 to indicate that it will not transmit an I2R LMR at the end of each measurement exchange, or - to 1 to indicate that it will transmit an I2R LMR at the end of each measurement exchange, if requested by the RSTA." | **Accept**  **TGaz editor:** please make the change as suggested. |
| 5172 | 49 |  | 9.3.1.22.10.3 | State that the User Info field format is described in Figure 9-64le--User Info field for Secured Sounding subvariant | Add "The User Info field format in the Secured Sounding subvariant is described in Figure 9-64le (User Info field for Secured Sounding subvariant)." | **Revised**  Agree with the commenter. Added the corresponding text in the section 9.3.1.22.10.3  **TGaz editor:** make the changes identified below in https://mentor.ieee.org/802.11/dcn/21/11-21-0967-00-00az-CR-misc-cids-part1.docx. |
| 5171 | 49 | 8 | 9.3.1.22.10.2 | State that the User Info field format is described in Figure 9-64ld--User Info field for Sounding subvariant | Add "The User Info field format in the Sounding subvariant is described in Figure 9-64ld (User Info field for Sounding subvariant)." | **Revised**  Agree with the commenter. Added the corresponding text in the section 9.3.1.22.10.2  **TGaz editor:** make the changes identified below in https://mentor.ieee.org/802.11/dcn/21/11-21-0967-00-00az-CR-misc-cids-part1.docx. |
| 5170 | 50 | 7 | 9.3.1.22.10.4 | State that the User Info field format is described in Figure 9-64lc--User Info field for Ranging Trigger frame of subvariant Poll and Report | Add "The User Info field format in the Report subvariant is described in Figure 9-64lc (User Info field for Ranging Trigger frame of subvariant Poll and Report)." | **Revised**  Agree with the commenter. Added the corresponding text in the section 9.3.1.22.10.4  **TGaz editor:** make the changes identified below in https://mentor.ieee.org/802.11/dcn/21/11-21-0967-00-00az-CR-misc-cids-part1.docx. |
| 5169 | 49 | 5 | 9.3.1.22.10.1 | State that the User Info field format is described in Figure 9-64lc--User Info field for Ranging Trigger frame of subvariant Poll and Report | Add "The User Info field format in the Poll subvariant is described in Figure 9-64lc (User Info field for Ranging Trigger frame of subvariant Poll and Report)." | **Revised**  Agree with the commenter. Added the corresponding text in the section 9.3.1.22.10.1  **TGaz editor:** make the changes identified below in https://mentor.ieee.org/802.11/dcn/21/11-21-0967-00-00az-CR-misc-cids-part1.docx. |
| 5135 | 133 | 15 | 11.21.6.3.6 | "Secure RTT Supported field in the EDMG Capabilities field to 1."- the Secure RTT supported is part of the EDMG Capabilities fields | replace with "Secure RTT Supported field in the RSNXE" | **Accept**  **TGaz editor:** please make the change as suggested. |
| 5042 | 131 |  | 11.21.6.3.4 | The text '-- An RSTA received an IFTMR frame where the Secure LTF Required subfield in the Ranging Parameters field in the received IFTMR frame is equal to 1.' seems unnecessary as when RSTA sets the Secure LTF Required subfield in the Ranging Parameters field to 1, is when ISTA has already set the Secure LTF Required subfield in IFTMR to one, which is a sufficient case covered in the next paragraph. | As per comment | **Revised.**  We added text to clarify (a) when the RSTA shall assign a secure LTF measurement exchange mode and (b) RSTA includes Secure LTF Parameters element in IFTM if the Secure LTF subelement was included in IFTM and Secure LTF Required was set to 1.  **TGaz editor:** make the changes identified below in https://mentor.ieee.org/802.11/dcn/21/11-21-0967-00-00az-CR-misc-cids-part1.docx. |

***TGaz editor: Modify the following text in P125L26 of 11az draft 3.1 as follows:***

A DMG or EDMG STA may use Protected Fine Timing frames in a DMG of EDMG EDCA based ranging session respectively (#5393).

***TGaz editor: Modify the following text in P76L27 of 11az draft 3.1 as follows:***

The maximum number of LTFs limits the allowed combinations of number of space-time streams and LTF repetitions(#5428).

***TGaz editor: Modify Table 9-322h23fc***  ***in P76L33 of 11az draft 3.1 as follows:***

**Table 9-322h23fc—Max R2I/I2R LTF Total subfields**

|  |  |
| --- | --- |
| Field value | Max Number of LTFs (#5427) |
| 0 | 4 |
| 1 | 8 |
| 2 | 16 |
| 3 | 64 (#5428) |

***TGaz editor: Add the following text in P194L6 of 11az draft 3.1 as follows:***

**11.21.6.6 Fine Timing Measurement session termination**

**11.21.6.6.1 EDCA based Ranging session termination (#5229)**

An EDCA based Ranging session between an ISTA and its associated RSTA is considered to be terminated by those STAs after the issuance of either a MLME-DISASSOCIATE.indication or MLME-DISASSOCIATE.confirm primitive by their corresponding MLMEs following the rules described in 11.3.5 (Association, reassociation, and disassociation).

An EDCA based Ranging session between an ISTA and its unassociated RSTA is considered to be terminated by those STAs after a successful association or reassociaton between those two STAs following the rules described in 11.3.5 (Association, reassociation, and disassociation).

***TGaz editor: Add the following text in P195L1 of 11az draft 3.1 as follows:***

**11.21.6.6.2 TB Ranging and Non-TB Ranging session termination (#5229)**

An EDCA based Ranging session between an ISTA and its associated RSTA is considered to be terminated by those STAs after the issuance of either a MLME-DISASSOCIATE.indication or MLME-DISASSOCIATE.confirm primitive by their corresponding MLMEs following the rules described in 11.3.5 (Association, reassociation, and disassociation).

An EDCA based Ranging session between an ISTA and its unassociated RSTA is considered to be terminated by those STAs after a successful association or reassociaton between those two STAs following the rules described in 11.3.5 (Association, reassociation, and disassociation).

***TGaz editor: Revise the following paragraph in P149L19 of 11az draft 3.1 as follows:***

**11.21.6.4.3.2 Polling Phase of TB Ranging**

If the available bandwidth does not allow for the polling of all ISTAs assigned to this availability  
window using a single TF Ranging Poll frame, the RSTA shall attempt to schedule one or more  
extra polling/sounding/reporting triplets within the availability window. The RSTA shall indicate  
the extra polling/sounding/reporting triplets by setting the More TF subfield in the Common Info field to and the RA field to the broadcast address in the TF Ranging Poll frame, and in TFs in  
subsequent Polling, Measurement Sounding and Measurement Reporting phases in the same  
availability window. If there are no additional polling/sounding/reporting triplets in the same  
availability window, the RSTA shall set the More TF subfield in the Common Info field to 0 in the TF Ranging Poll frame, and in TFs in subsequent  
Measurement Sounding and Measurement Reporting phases (**#1978**) in the same availability  
 window(#5196).

***TGaz editor: Revise the following paragraph in P48L6 of 11az draft 3.1 as follows:***

**9.3.1.22 Trigger frame format**

**9.3.1.22.10 Ranging Trigger variant**

The More TF subfield of the Common Info field of the Ranging Trigger frame is set to 1 and the  
RA field is set to the broadcast address to indicate that a subsequent Ranging Trigger frame of Poll  
 subvariant is scheduled for transmission within the availability window as defined in Subclause  
11.21.6.4.3 (TB Ranging measurement exchange) (#**5164**) The More TF subfield of the Common  
Info field of the Ranging Trigger frame is set to 0   
to indicate that no subsequent Ranging Trigger frame of Poll subvariant is scheduled for  
transmission within the availability window (#5195).

***TGaz editor: Delete the paragraph in P48L24 of 11az draft 3.1:***

***TGaz editor: Add the following text in P48L35 of 11az draft 3.1:***

**9.3.1.22.10.1 Poll subvariant**

The format of the User Info field in the Ranging Trigger frame of Poll subvariant is  
defined in Figure 9-64lc (User Info field for Ranging Trigger frame of subvariant Poll and Report).

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.) (#5169)

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

**9.3.1.22.10.2 Sounding subvariant**

The format of the User Info field in the Ranging Trigger frame of Sounding subvariant is defined in Figure 9-64ld (User Info field for Sounding subvariant*) (#5171)*.

***TGaz editor: Add the following text in P49L16 of 11az draft 3.1:***

**9.3.1.22.10.3 Secured Sounding subvariant (#1707, #1389, #1958)**

The format of the User Info field in the Ranging Trigger frame of Sounding and Secured Sounding  
subvariants is defined in Figure 9-64le (User Info field for Secured Sounding subvariant) (#5172).

***TGaz editor: Add the following text in P50L2 of 11az draft 3.1:***

**9.3.1.22.10.4 Report subvariant**

The format of the User Info field in the Ranging Trigger frame of Report subvariant is  
defined in Figure 9-64lc (User Info field for Ranging Trigger frame of subvariant Poll and Report) and the subfields of the User Info field are identical to the corresponding subfields in the Ranging Trigger frame of subvariant Poll (#5170).

***TGaz editor: Add the following text in P134L9 of 11az draft 3.1:***

If an ISTA has included the Secure LTF subelement in the Ranging Parameters element in its IFTMR frame and set the value of the Secure LTF Required field to 1, the RSTA shall assign a secure LTF measurement exchange mode with the ISTA. (#5042)

***TGaz editor: Modify the following text in P134L18 of 11az draft 3.1:***

The RSTA shall include a Secure LTF Parameters element in the IFTM frame that contains an LTF  
Generation SAC and a Secure LTF Counter (#**2289**) if it included a Secure LTF subelement in the Ranging Parameters element and set its Secure LTF Required field to 1. (#5042)