IEEE P802.11Wireless LANs

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Proposed Resolutions to Miscellaneous CIDs of 11az SAB1 | | | | |
| Date: 2022-04-04 | | | | |
| Author(s): | | | | |
| Name | Company | Address | Phone | email |
| Qi Wang | Apple Inc. |  |  | qi\_wang2@apple.com |
| Tianyu Wu | Apple, Inc. |  |  | tianyu@apple.com |
|  |  |  |  |  |

Abstract

This submission proposes the resolutions to 11az SAB1 CID- 7285, 7286, 7204, 7205, 7284, and 7288.

The page and line numbers refer to those in 11az Draft 4.1 [1].

**Introduction**

This submission proposes the resolutions to miscellaneous 11az SAB1 CID- 7285, 7286, 7204, 7205, 7284, and 7288.

The page and line numbers refer to those in 11az Draft 4.1 [1].

**Comments:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| CID | Page/Line | Clause | Comment | Proposed change | Resolution |
| 7285 | P132/L22 | 11.21.6.3.3 | "When an ISTA has included the Secure LTF subelement in the Ranging Parameters element in its 22 IFTMR frame and sets the value of the Secure LTF Required field to 1, the ISTA shall set the Max 23 R2I Rep and Max I2R Rep subfields to a value greater than 0, and both RSTA Assigned R2I Rep 24 and RSTA Assigned I2R Rep shall be greater than 0." There is no technical reason for the requirement to always use >1 repetitions | remove | Reject.  The 11az group discussed the mandating of repetition when using Secure HE-LTF several times, and the agreement within the group was that repetition shall be used in a secure HE-LTF session. |
| 7286 | P133/L05 | 11.21.6.3.3 | "NOTE 1—The setting of the I2R LMR Feedback subfield to 1 in the Ranging Parameters field in the Ranging Parameters element contained in the IFTMR frame and IFTM frame respectively is based on higher layer agreements." - always? How about headless devices? | Change to "NOTE 1—The setting of the I2R LMR Feedback subfield to 1 in the Ranging Parameters field in the Ranging Parameters element contained in the IFTMR frame and IFTM frame respectively may be based on higher layer agreements." | Reject.  NOTE1 indicates that, if/when an ISTA's location information is shared with an RSTA at the MAC layer, it relies on the pre-existing trusting relationship between the ISTA and the RSTA which is established at a layer above the MAC.  A headless device  (ISTA) will only share its location information with a trusted network (RSTA).  This note applies to all devices categories (including headless devices).  No spec change is needed. |
| 7204 | P154/L03 | 11.21.6.4.3.3 | "The number of LTF repetitions in the R2I Rep subfield shall be set to a value not to exceed the RSTA Assigned R2I Rep, for the correponding ISTA." Please clarify in the STA Info field for different users, the value for the R2I Rep shall be the same when secure LTF is not used. | As in comment. | Revised.  Agree with the commenter. When considering this comment, TGaz agrees that the spec needs to also specify that the N\_STS for different users shall be same when secure HE-LTF is not used.  TGaz editor: please incorporate the text change in this document (22/605r1) with tag (# 7204).  Insert link.  <https://mentor.ieee.org/802.11/dcn/21/11-22-0605-01-00az-proposed-resolutions-to-miscellaneous-CIDs-of-11az-SAB1.docx> |
| 7205 | P46/L01 | 9.3.1.19 | "I2R Rep" in STA Info field fomat in the Raniging NDPA shall be specified as "reserved" for TB ranging, because I2R Rep is included in TF\_sounding for TB ranging. | As in comment. | Revised.  Agree with the commenter. When considering this comment, TGaz agrees that I2R N\_STS shall also be reserved in the Ranging NDPA for TB ranging.  TGaz editor: please incorporate the text change in this document (22/605r1) with tag (# 7205).  <https://mentor.ieee.org/802.11/dcn/21/11-22-0605-01-00az-proposed-resolutions-to-miscellaneous-CIDs-of-11az-SAB1.docx> |
| 7284 | P132/L22 | 11.21.6.3.3 | "When an ISTA has included the Secure LTF subelement in the Ranging Parameters element in its 22 IFTMR frame and sets the value of the Secure LTF Required field to 1, the ISTA shall set the Max 23 R2I Rep and Max I2R Rep subfields to a value greater than 0, and both RSTA Assigned R2I Rep 24 and RSTA Assigned I2R Rep shall be greater than 0." Should be in subclause 11.21.6.3.4 | as per comment | Revised.  The 11az\_D4.0 text that the commenter refers to is already modified in 11az\_D4.1. However, agree with the commenter that the text relevant only to secure HE-LTF can be moved from 11.21.6.3.3 to 11.21.6.3.4.  TGaz editors: please incorporate the text changes shown in this submission (22/605r1) with tag (#7284)  <https://mentor.ieee.org/802.11/dcn/21/11-22-0605-01-00az-proposed-resolutions-to-miscellaneous-CIDs-of-11az-SAB1.docx> |
| 7288 | P134/L31 | 11.21.6.4.3.3 | "When the Secure LTF Required subfield of the Ranging Parameters field is equal to 1, the RSTA 31 shall set the Max R2I Rep subfield to a value equal to the corresponding value in the IFTMR frame, 32 and the RSTA shall set the Max I2R Rep subfield to a value greater than 0 and less than or equal 33 to the corresponding value in IFTMR frame." - no technical resason to require > 0 value; also should be in 11.21.6.3.4 if needed | remove or move to section on secure LTF | Revised.  The 11az group discussed the mandating of repetition when using Secure HE-LTF several times, and the agreement within the group was that repetition shall be used in a secure HE-LTF session.  The 11az\_D4.0 text that the commenter refers to is already modified in 11az\_D4.1. However, agree with the commenter that the text relevant only to secure HE-LTF can be moved from 11.21.6.3.3 to 11.21.6.3.4.  TGaz editors: please incorporate the text changes shown in this submission (22/605r1) with tag (#7288)  <https://mentor.ieee.org/802.11/dcn/21/11-22-0605-01-00az-proposed-resolutions-to-miscellaneous-CIDs-of-11az-SAB1.docx> |

**Proposed resolution**

***TGaz Editors: Change the text in 11.21.6.4.3.3, page 153, line 21-32. as follows: (# 7204)***

Similarly, in the Ranging NDP Announcement frame, the RSTA shall set the R2I N\_STS subfield and R2I Rep subfield of the STA Info fields corresponding to each of the ISTAs, addressed by that frame in the following way

* The R2I N\_STS subfield value shall not exceed the *RSTA assigned R2I STS ≤ 80 MHz* for the corresponding ISTA, if the TXVECTOR parameter CH\_BANDWIDTH for this Ranging NDP Announcement frame is less than or equal to 80 MH, and not exceed *RSTA assigned R2I STS > 80 MHz* for the corresponding ISTA otherwise.
* The number of LTF repetitions in the R2I Rep subfield shall be set to a value not to exceed the *RSTA Assigned R2I Rep*, for the corresponding ISTA. (#3699)
* When secure HE-LTF is not used, the R2I N\_STS subfield and the R2I Rep subfield in the STA Info field for different users shall be set to the same value.
* The combination of the values of the R2I N\_STS and the R2I Rep shall not lead to a total number of LTF that exceeds the *RSTA Assigned R2I LTF Total* for each corresponding ISTA.

***TGaz Editors: Change Figure 9-61da on page 46 as follows: (# 7205)***

* Change the field name from “I2R Rep” to “I2R Rep or Reserved”
* Change the field name from “I2R N\_STS” to “I2R N\_STS or Reserved”.

***TGaz Editors: Change the text in 9.3.1.19, page 46, line 34- 36 as follows: (# 7205)***

The R2I N\_STS and I2R N\_STS subfields indicate the number of spatial streams of the corresponding NDP and is set to the number of spatial streams minus 1. (#**7025**) In the case of TB ranging measurement exchange, see 11.22.6.4.3 (TB ranging measurement exchange) and 11.21.6.4.5.2 (TB ranging measurement exchange with secure LTF), the I2R N\_STS subfield is reserved.

***TGaz Editors: Change the text in 9.3.1.19, page 47, line 1-4 as follows: (# 7205)***

The R2I Rep and I2R Rep subfields are set to the number of HE-LTF repetitions of the corresponding HE Ranging NDP minus 1; see 27.3.18a (HE Ranging NDP). If the I2R and R2I Rep subfields have a value equal to 0, then there is no repetition in the I2R and R2I NDP respectively. (#**5435**, #**5452**, #**5376**, #**7026**) In the case of TB ranging measurement exchange, see 11.22.6.4.3 (TB ranging measurement exchange) and 11.21.6.4.5.2 (TB ranging measurement exchange with secure LTF), the I2R Rep subfield is reserved.

* + - * 1. **Negotiation for TB and non-TB ranging measurement exchange**

***TGaz Editors: detele the text in 11.21.6.3.3 P132 Line 18-21 as follows: (# 7284, 7288)***

***TGaz Editors: replace the text in 11.21.6.3.3 P134 Line 35-40 with the following new text: (# 7284, 7288)***

In Ranging Parameters field of the Ranging Parameters element of the IFTM frame, an RSTA sets the Max R2I Repetition subfield to *RSTA Assigned R2I Rep that is* less than or equal to the Max R2I Repetition subfield value in the IFTMR frame, and sets the Max I2R Repetition subfield to *RSTA Assigned I2R Rep that is* less than or equal to the Max I2R Repetition subfield value in the IFTMR frame*.*

When *RSTA Assigned R2I Rep* is equal to 0, LTF\_REP in the corresponding HE Ranging NDP is equal to 1 and there is a single HE-LTF Repetition Block within an HE-LTF User Block; when *RSTA Assigned R2I Rep* is greater than 0, LTF\_REP in the corresponding HE Ranging NDP is greater than 1, and there are multiple HE-LTF Repetition Blocks within an HE-LTF User Block. When *RSTA Assigned I2R Rep* is equal to 0, LTF\_REP in the corresponding HE Ranging NDP or HE TB Ranging NDP is equal to 1 and there is a single HE-LTF Repetition Block within an HE-LTF User Block; when *RSTA Assigned I2R Rep* is greater than 0, LTF\_REP in the corresponding HE Ranging NDP or HE TB Ranging NDP is greater than 1, and there are multiple HE-LTF Repetition Blocks within an HE-LTF User Block.

***TGaz Editors: insert the new text in 11.21.6.3. as follows: (# 7284, 7288)***

* + - * 1. **Negotiation for secure LTF in the TB and non-TB ranging measurement exchange (#1817, #1818, #1824, #2321)**

…

When 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**)

When an ISTA has included the Secure LTF subelement in the Ranging Parameters element in an IFTMR frame, then to assign a secure LTF measurement exchange mode with the ISTA, an RSTA with dot11SecureLTFImplemented equal to true shall include a Secure LTF subelement in the Ranging Parameters element in an IFTM and set its Secure LTF Required field to 1. (#**3620**)

(#**7283**) (#**7344**)When an ISTA has included the Secure LTF subelement in the Ranging Parameters element in its IFTMR frame and sets the value of the Secure LTF Required field to 1, the ISTA shall set the Max R2I Repetition and Max I2R Repetition subfields to a value greater than 0. (#**5435**, #**5452**, #**5376, #7345)**

(#**7283**) (#**7344**)When an ISTA has included the Secure LTF subelement in the Ranging Parameters element in its IFTMR frame and sets the value of the Secure LTF Required field to 1, the ISTA shall set the Max R2I Repetition and Max I2R Repetition subfields to a value greater than 0. (#**5435**, #**5452**, #**5376, #7345)**

When the Secure LTF Required subfield of the Secure LTF subelement in the Ranging Parameters field is equal to 1, the RSTA shall set the RSTA Assigned R2I Rep to the Max R2I Repetition subfield value in the IFTMR frame, and the RSTA shall set RSTA Assigned I2R Rep to a value greater than 0 and less than or equal to the Max I2R Repetition subfield value in the IFTMR frame, where the RSTA Assigned R2I Rep and RSTA Assigned I2R Rep specify the number of HE-LTF repetitions in the preamble of the R2I and I2R NDP for this session respectively. (#**7346**)

**References**

[1] IEEE P802.11az™/D4.1, Draft Standard for information technology – Telecommunications and information exchange between systems Local and metropolitan area networks – Specific requirements, Part 11: Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) Specifications, Amendment 4: Enhancements for positioning