IEEE P802.11  
Wireless LANs

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Misc CR for 11.22.6.3.3 and clause 9 | | | | |
| Date: 2020-10-10 | | | | |
| Author(s): | | | | |
| Name | Affiliation | Address | Phone | email |
| Ali Raissinia | Qualcomm |  |  | alirezar@qti.qualcomm.com |
| Christian Berger | NXP |  |  | Christian.berger@nxp.com |
| Dibakar Das | Intel |  |  | [Dibakar.das@intel.com](mailto:Dibakar.das@intel.com) |
| Jonathan Segev | Intel |  |  | Jonathan.segev@intel.com |

Abstract

This submission proposes the comment resolution of following CIDs in 11.22.6.3.3: 3606, 3607, 3616, 3620, 3886, 3700.

Rev0: initial draft.

Rev1: Add CID 3700

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **CID** | **Line** | **Clause** | **Comment** | **Proposed Change** | **Resolution** |
| **3606** | 122.39 | 11.22.6.3.3 | Why is this a bullet? | Debulletise | **Revised.**  Agreed in principle.  See the changes as per 11-20-1392.  TGaz editor make the changes identified below. |
| **3607** | 122.39 | 11.22.6.3.3 | " When an RSTA has set the Phase Shift Feedback Support field to 1 in the Extended 39  Capabilities element, an ISTA may set the R2I TOA Type subfield in the Ranging 40  Parameter field in an initial Fine Timing Measurement Request frame to 1 to activate the 41  phase shift feedback mode for the RSTA2ISTA LMR. The RSTA may set the R2I TOA 42  subfield in the Ranging Parameter field in an initial Fine Timing Measurement frame to 1 to confirm phase shift feedback in the RSTA2ISTA LMR." -- constructs of the form "may set to x to do y" are ambiguous (might mean "sets to x to do y" or "does y and might or might not choose to indicate this by setting x"). Also no "R2I TOA subfield" | Change to "To activate the  phase shift feedback mode for the RSTA2ISTA LMR when an RSTA has set the Phase Shift Feedback Support field to 1 in the Extended Capabilities element, an ISTA shall set the R2I TOA Type subfield in the Ranging Parameter field in the initial Fine Timing Measurement Request frame to 1. The RSTA shall set the R2I TOA Type subfield in the Ranging Parameter field in the initial Fine Timing Measurement frame to 1 to confirm phase shift feedback in the RSTA2ISTA LMR." | **Revised.**  Agreed in principle. See the changes as per 11-20-1392.  TGaz editor make the changes identified below. |
| **3616** | 123.9 | 11.22.6.3.3 | Why is this a bullet? | Debulletise | **Revised.**  Agreed in principle.  See the changes as per 11-20-1392.  TGaz editor make the changes identified below. |
| **3620** | 122.39 | 11.22.6.3.3 | the Phase Shift Feedback Support field to 1 in the Extended 39  Capabilities element, an ISTA may set the R2I TOA Type subfield in the Ranging 40  Parameter field in an initial Fine Timing Measurement Request frame to 1 to activate the 41  phase shift feedback mode for the RSTA2ISTA LMR. The RSTA may set the R2I TOA 42  subfield in the Ranging Parameter field in an initial Fine Timing Measurement frame to 1 to confirm phase shift feedback in the RSTA2ISTA LMR." -- constructs of the form "may set to x to do y" are ambiguous (might mean "sets to x to do y" or "does y and might or might not choose to indicate this by setting x"). Similarly "an ISTA 29  with dot11SecureLTFImplemented equal to true may set the Secure LTF Required subfield in the 30  Ranging Parameters field in an initial Fine Timing Measurement Request frame to 1 to activate a 31  secure LTF measurement exchange mode between the ISTA and the RSTA." at 123.29 | Reword in a form like "may do X; it does so by doing Y (e.g. setting blah to 1)" | **Revised.**  Agreed in principle.  See the changes as per 11-20-1392.  TGaz editor make the changes identified below. |
| **3886** | 46.0 | 9.3.1.22.10 | Definition of token subfield is missing | Add defintion of token subfield below figure 9-61d.x | **. Revised.**  The definition is included later in the section. To improve readability, we move the definition of Token and Sounding Dialog Token Number sub-fields so as to appear in the order in which they are present in the Trigger Dependent Common Info field. See 11-20-1666  TGaz editor make the changes identified below. |
| **3700** | 122.19 | 11.22.6.3.3 | "-- maximum number of LTF repetitions it is capable of transmitting in the preamble of the 19  R2I NDP frames, (referred to as RSTA Assigned R2I Rep), which shall be no greater than 20  the value in the corresponding IFTMR, in the Max R2I Rep subfield of the Ranging 21  Parameters field. " is not clear: is the thing in "the Max R2I Rep subfield of the Ranging  Parameters field" the "maximum number of LTF repetitions it is capable of transmitting" or is it "the value in the corresponding IFTMR"? Ditto next bullet | As it says in the comment | **Revised.**  We clarify that it is a function of the value carried in the IFTMR frame. See changes as per 11-20-1666r1.  TGaz editor: make the changes identified below. |

11.22.6.3.3 Negotiation for TB and non-TB Ranging measurement exchange

***TGaz Editor: Remove the bullet under the paragraph starting in P127L11 of draft 2.3 as follows:***

An RSTA in which dot11PhaseShiftFeedbackImplemented is true shall set the Phase Shift  
Feedback Support field in the Extended Capabilities element to 1 to indicate RSTA’s capability. To activate the phase shift feedback mode for the RSTA2ISTA LMR if an RSTA has set the Phase Shift Feedback Support field to 1 in the Extended Capabilities element, an ISTA shall set the R2I TOA Type subfield in the Ranging Parameter field in an IFTMR frame to 1. The RSTA shall set the R2I TOA subfield in the Ranging Parameter field in an initial Fine Timing Measurement frame to 1 to confirm phase shift feedback in the RSTA2ISTA LMR (#3607), otherwise set to 0. If the RSTA sets the R2I TOA Type subfield in the Ranging Parameter field in an initial Fine Timing Measurement frame to 1, the RSTA shall carry the phase shift tp2 of I2R NDP in the RSTA2ISTA LMR. (#**1581, 3606**)

An ISTA which has set the I2R LMR feedback subfield to 1 and is capable to transmit LMR  
carrying phase shift feedback may set the I2R TOA Type subfield to 1 in the Ranging Parameter  
field in an initial Fine Timing Measurement Request frame to indicate the ISTA’s capability. To activate the phase shift feedback mode in the ISTA2RSTA LMR, ISTA shall set the I2R LMR feedback field to 1 and the I2R TOA Type subfield to 1 in the Ranging Parameters field in an initial Fine Timing Measurement Request frame.The RSTA shall set the I2R TOA Type subfield in the Ranging parameters field of an initial Fine Timing Measurement frame to 1 to confirm phase shift feedback mode in ISTA2RSTA LMR, otherwise set to 0. (#3620) If the RSTA sets the I2R TOA Type subfield in the Ranging parameters field of an initial Fine Timing Measurement frame to 1, the ISTA shall carry the phase shift tp4 of R2I NDP in the ISTA2RSTA LMR (#**1581, 3616**).

***TGaz Editor: Move the text starting in P49L1 to appear after Table 9-31ka. Next move parts of the text in the paragraph starting in P47L14 as:***

The format of the Trigger Dependent Common Info subfield of Ranging Trigger frame of  
subvariant Passive TB Sounding is shown in Figure 9-64lb.

|  |  |  |
| --- | --- | --- |
| Ranging Trigger Subtype | Reserved | Sounding Dialog Token Number |

Bits: 4 6 6

**Figure 9-64lb—Trigger Dependent Common Info subfield of Ranging Trigger frame of** **subvariant Passive TB Sounding (#3015)**

The value of the Ranging Trigger Subtype for the Ranging Trigger frame is defined in Table 9-  
31ka (Ranging Trigger Subtype field encoding): **(#1391*)***

**Table 9-31ka — Ranging Trigger Subtype field encoding**

|  |  |
| --- | --- |
| **Ranging Trigger Subtype field value** | **Ranging Trigger frame subvariant** |
| 0 | Poll |
| 1 | Sounding |
| 2 | Secure Sounding |
| 3 | Report |
| 4 | Passive TB Sounding |
| 5-15 | Reserved |

(#**1888**) The Token field is reserved in Ranging Trigger other than TF Ranging Poll . In a TF  
Ranging Poll , the Token field is used to match the TF Ranging Poll with the partial TSF time in  
Ranging NDP Announcement frame.

(#3886)

(#**1114**, #**1390**, **#1391)**The RA field and the CS Required, 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) and  
9.3.1.22 (Trigger frame format), except that the RA field in Ranging Trigger frames with only one  
User Info field can be either unicast or broadcast.  
  
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.  
  
 The TA field for the Ranging Trigger frame set to the address of the RSTA transmitting the Trigger  
frame if the Trigger frame is addressed only to ISTAs with which that RSTA has a TB Ranging  
 measurement exchange (11.21.6.4.3). The TA field is the transmitted BSSID if the Trigger frame  
 is addressed to set of ISTAs in which at least two ISTAs have a TB Ranging Measurement exchange  
 with a different BSSID in the Multiple BSSID set of the RSTA (#**1115**).

The format of the User Info field in the Ranging Trigger frame of Poll and Report subvariants is  
defined in Figure 9-64lc (User Info field for Ranging Trigger frame of subvariant Poll and Report).  
The format of the User Info field in the Ranging Trigger frame of Sounding and Secured Sounding  
subvariants is defined in Figure 9-64ld (User Info field for Sounding subvariant), and Figure 9-64le  
(User Info field for Secured Sounding subvariant) respectively (#**2048**, #**1391***)*.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 UL Target RSSI subfield is identical to the corresponding subfield in the Basic Trigger frame;  
see 9.3.1.22 (Trigger Frame format.) (#**1615**)

***TGaz Editor: Modify the text starting in P127L11 as:***

For TB Ranging and Non-TB Ranging, if the negotiation is successful, the corresponding initial  
Fine Timing Measurement frame from the RSTA shall include a Ranging Parameters element with  
the parameters that defines the negotiated range measurement session. The RSTA shall indicate  
the following parameters in the Ranging Parameters field: (#**3591, #TC707r3**)

— In the Max R2I Rep field, either the maximum number of LTF repetitions it is capable of transmitting in the preamble of the R2I NDP or the value in the corresponding IFTMR frame, whichever is smaller (referred to as *RSTA Assigned R2I Rep)*.  
— In the Max I2R Rep subfield, either the maximum number of LTF repetitions it is capable of receiving in the preamble of the I2R NDP (referred to as *RSTA Assigned I2R Rep*), or the value in  
the corresponding IFTMR frame, whichever is smaller (referred to as *RSTA Assigned I2R Rep)*.  
— In the Max R2I STS ≤ 80 MHz subfield, either the maximum number of space-time streams it is capable of transmitting in the R2I NDP for bandwidths less than or equal to 80 MHz, or the value in the corresponding IFTMR, whichever is smaller ((referred to as RSTA Assigned R2I STS ≤ 80 MHz)..  
— In the Max R2I STS > 80 MHz subfield, either the maximum number of space-time streams it is capable of transmitting in the R2I NDP for bandwidths greater than 80 MHz, or the value in the corresponding IFTMR (referred to as RSTA Assigned R2I STS > 80 MHz).  
—In the Max I2R STS ≤ 80 MHz subfield, either the maximum number of space-time streams it is capable of receiving in the I2R NDP for bandwidths less than or equal to 80 MHz, or the value in the corresponding IFTMR, whichever is smaller (referred to as RSTA Assigned I2R STS ≤ 80 MHz).  
— In the Max I2R STS > 80 MHz subfield, either the maximum number of space-time streams it is capable of receiving in the I2R NDP for bandwidths greater than 80 MHz, or the value in the corresponding IFTMR, whichever is smaller (referred to as RSTA Assigned I2R STS > 80 MHz).

— In the Max R2I LTF Total subfield, either the maximum number of LTFs in total it is capable of transmitting, including all repetitions, in the R2I NDP, or the value in the corresponding IFTMR, whichever is smaller (referred to as RSTA Assigned R2I LTF Total).  
— In the Max I2R LTF Total subfield, either the maximum number of LTFs in total it is capable of receiving, including all repetitions, in the I2R NDP, or the value in the corresponding IFTMR, whichever is smaller (referred to as RSTA Assigned I2R LTF Total) .