IEEE P802.11  
Wireless LANs

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| CR for Misc CIDs on 9.4.2.279 | | | | |
| Date: 2019-08-27 | | | | |
| Author(s): | | | | |
| Name | Affiliation | Address | Phone | email |
| Dibakar Das | Intel |  |  | [Dibakar.das@intel.com](mailto:Dibakar.das@intel.com) |
| Ganesh Venkatesan | Intel |  |  | [Ganesh.venkatesan@intel.com](mailto:Ganesh.venkatesan@intel.com) |
| Tulasidas, Tulasi Sivanesan | Intel |  |  | tulasi.sivanesan.tulasidas@intel.com |
| Chittabrata Ghosh | Intel |  |  | [Chittabrata.ghosh@intel.com](mailto:Chittabrata.ghosh@intel.com) |
| Feng Jiang | Intel |  |  | Feng1.jiang@intel.com |
| Jonathan Segev | Intel |  |  | Jonathan.segev@intel.com |
| Qi Wang | Apple |  |  | Qi.wang2@apple.com |

Abstract

This document resolves following CIDs: 1123 1125 1127 1386 1462 1648 1709 2437 1581 1658 1711.

R0: initial version

R1: revision following discussion in ad-hoc

R2: Remove CID 1468 from Abstract and copy 1648.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **CID** | **Page** | **Clause** | **Comment** | **Proposed Change** | **Resolution** |
| 1123 | 49.0 | 9.4.2.279 | Remove "Secure LTF Support" from the Ranging Parameter field as it creates confusion during the secure negotiation. The addition of Secure LTF Required and Secure LTF supported in the Extended capability field satisfy all use cases. | As per comment | **Rejected.**  As per the resolution of CID 1119 in document 11-19-0704r5, the addition of the bit ‘Secure LTF Required’ was rejected. Hence, we need the existing bits in Ranging Parameters for signalling. |
| 1125 | 50.26 | 9.4.2.279 | Non-TB Specific parameter should also be added as part of IFTM frame and not just IFTMR | Edit the text to include inclusion of the subelement in IFTMR as well. | **Revised.**  Agreed in principle. However, this has already been resolved in 1.2 as: below:  “The Non-TB Specific Parameters subelement is included in the initial Fine Timing Measurement Request to describe the requested set of parameters that the initiator proposes to use and in the initial Fine Timing Measurement, if the initiator and the responder successfully negotiate and FTM session where the negotiated ranging protocol is Non-TB.” |
| 1127 | 51.22 | 9.4.2.279 | TB Specific parameter should be also added as part of IFTM frame and not IFTMR frame. | Edit the text to include inclusion of the subelement in IFTMR as well. | **Revised.**  Agreed in principle. However, this has already been resolved in 1.2 as: below:  “The TB Specific Parameters subelement is included in the initial Fine Timing Measurement Request to describe the requested set of parameters that the initiator proposes to use and in the initial Fine Timing Measurement, if the initiator and the responder successfully negotiate and Fine Timing Measurement session where the negotiated ranging protocol is TB.” |
| 1386 | 48.16 | 9.4.2.279 | "...when included in the Initial Fine Timing Measurement frame indicates that the RSTA requires a LMR report from the ISTA at the end of each ranging exchange..." The RSTA should not be able to require an ISTA to share privacy sensitive information. | Change "the RSTA requires a LMR report" to "the RSTA requests a LMR report" | **Revise**  Refer to submission 11-19-481r6 for a complete description of the ISTA2RSTA LMR functionality. |
| 1462 | 47.16 | 9.4.2.279 | The ranging protocol should support to not include the LMR at the end of the measurement phase. This option can be used to do bidirectional implicit beamforming with a smaller airtime overhead. When a STA includes the "only sounding mode supported" flag in its ranging capabilities, RSTA shall not send the LMR to this ISTA. | Add "Sounding mode supported" and "only sounding mode supported" to the Ranging parameters subfield inside the Ranging Parameters element. | **Rejected.**  The 11az spec is primarily for ranging operations and not for data. As such RSTA to ISTA LMR is required to enable this behaviour. Enabling the behaviour as requested by the commenter is out of scope of this amendment. |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **CID** | **Page** | **Clause** | **Comment** | **Proposed Change** | **Resolution** |
| 1709 | 61.00 | 9.4.2.279 | Please clarify the following text:  "and is similar to AID and is assigned by the responder to identify the unassociated initiator. The Ranging ID and the AID are derived the same space and are non-conflicting. The RID/AID field is set to the value of the Ranging ID or the AID of the ISTA. " | Please clarify what similar means in the text.  What is intended seems to be  - For an Associated STA: RID is nothing but the AID of the STA  - For un-Associated STA: RID is assigned by the Responder and it is the same length as AID field. A Responder will not assign an RID to a STA, if that RID is already assigned to another un-associated STA, or if the same value of RID is assigned as an AID to an Associated STA. | **Revised.**  We clarify by modifying the text as below:  “The Ranging ID is the AID if the initiator is associated with the responder; and has the same length as the AID field and is assigned by the responder to identify the unassociated initiator. The Ranging ID and the AID are derived the same space and are non-conflicting. The AID/RID field is set to the value of the Ranging ID or the AID of the ISTA.” See document 11-19-1461.  RID is now Ranging Session ID (RSID). Submission 11-19-0662. |
| 2437 | 53.01 | 9.4.2.279 | Is there any case that the AP becomes ISTA? I think there isn't. Then the description should be devided into cases when an AP is RSTA and ISTA is associated with that AP and when ISTA is not associated with that AP.  Also, delete the part that the Randing ID is similar to AID, as it doesn't give useful info. | As in comment. | **Revised.**  ISTA/RSTA Terminology is independent of the AP/STA roles. In addition see below (11-19-1461) of how Ranging ID definition is reworded. |

***TGaz Editor: Modify the text in P61L18of draft 1.3 as:***

.

The AID/RID field contains an identifier for the ISTA for the duration of the FTM session. If the ISTA is associated with the RSTA the value is set to the ISTA’s AID. If the ISTA is not associated with the RSTA the AID/RID field is set to the Ranging ID which has the same length as the AID and is assigned by the responder to identify the unassociated ISTA. The Ranging ID and the AID are derived the same space and are non-conflicting (#1709, 2437).

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **CID** | **Page** | | **Clause** | **Comment** | **Proposed Change** | **Resolution** |
| 1581 | 53.14 | 9.4.2.279 | | In Figure 9-610d, the field RSTA-to-ISTA Phase Shift Feedback and the field ISTA-to-RSTA Phase Shift Feedback serve the same purpose as the fields R2I ToA Type and I2R ToA Type. The fields RSTA-to-ISTA Phase Shift Feedback and the field ISTA-to-RSTA Phase Shift Feedback are redundant and should be deleted. | as proposed in comment | **Revised.**  Agreed in principle with the reviewer. The RSTA-to-ISTA Phase Shift Feedback and the field ISTA-to-RSTA Phase Shift Feedback fields are not in the Figure but are refered elsewhere in the spec. We replace them with R2I ToA Type and I2R ToA Type subfield respectively everywhere as per document 11-19-1461. |

***TGaz Editor: Modify the text starting at P101L13 as:***

When an RSTA has set the Phase Shift Feedback Support field to 1 in the Extended  
Capabilities element, an ISTA may set the R2I ToA Type subfield in  
the Ranging Parameter field in an initial Fine Timing Measurement Request frame to 1 to  
activate the phase shift feedback mode for the RSTA2ISTA LMR.  
The RSTA may set the R2I ToA Type subfield in the Ranging  
Parameter field in an initial Fine Timing Measurement frame to 1 to confirm phase shift feedback in the RSTA2ISTA LMR. When 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 UL NDP in the RSTA2ISTA LMR (#1581).

An ISTA which has set the ISTA-2-RSTA LMR feedback subfield to 1 and which is capable to send  
LMR carrying phase shift feedback shall set the I2R ToA Type field to 1 in the Ranging Parameter field in an initial Fine Timing Measurement Request frame to indicate the  
ISTA’s capability.  
 — When an ISTA has set the ISTA-2-RSTA LMR feedback subfield to 1 and has set the  
I2R ToA Type subfield to 1 in the Ranging Parameter field in an  
initial Fine Timing Measurement Request frame, an RSTA may set the I2R ToA Type subfield to 1 in the Ranging Parameter field in an initial Fine  
Timing Measurement frame to activate the phase shift feedback mode in the ISTA2RSTA LMR. Otherwise, RSTA shall set I2R ToA Type subfield in the ranging parameter field of an initial Fine Timing Measurement frame to 0. When RSTA sets I2R ToA Type subfield in the ranging  
parameter field of an initial Fine Timing Measurement frame to 1, the ISTA shall carry  
the phase shift tp4 of DL NDP in the ISTA2RSTA LMR (#1581).

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **CID** | **Page** | | **Clause** | **Comment** | **Proposed Change** | **Resolution** |
| 1658 | 53 | 9.4.2.279 | | "One or more of the Non-TB specific or the TB specific subelements are included in the initial FTM Request. Only one of the Non-TB specific or the TB specific subelement shall be included in the Ranging Parameters element contained in the initial FTM ". Can the IFTMR include two or more non-TB Specific; and/or two or more TB Specific subelements? I think not. The intent is that in IFTMR the ISTA could include a non-TB Specific subelement and/or a TB Specific subelement. | Replace with "The initial FTM Request may include a non-TB specific sublement and a TB specific subelement; and the corresponding intitial FTM shall include a non-TB specific subelement or a TB specific subelement in the Ranging Parameters element, if the Status Indication subfield in the Ranging Parameters field is set to Success" | **Revised.**  Modified the text mostly as suggested by the commenter. See document 11-19-1461. |

***TGaz Editor: Modify text starting at end of P62L5 as:***

The Ranging Parameters element in the intial Fine Timing Measurement Request frame includes a non-TB specific sublement and/or a TB specific subelement; and the Ranging Parameters element in the corresponding initial Fine Timing Measurement frame includes either a non-TB specific subelement or a TB specific subelement, if the Status Indication subfield in the Ranging Parameters field is set to Success

to indicate the range measurement protocol selected by the responder for the negotiated FTM session (#1658).

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **CID** | **Page** | | **Clause** | | **Comment** | **Proposed Change** | **Resolution** |
| 1711 | | 56.14 | | 9.4.2.279 | Remove this text "when included in the initial fine timing measurement frame indicates that the RSTA requires a LMR report from the iSTA at the end of each ranging exchange" It makes meaning more confusing | Remove this text "when included in the initial fine timing measurement frame indicates that the RSTA requires a LMR report from the iSTA at the end of each ranging exchange". | REVISE. Refer to submission 11-19-481r6. |
| 1648 | | 49 | | 9.4.2.279 | R2I ToA Type and R2I AoA Requested subfields are set (based on the RSTA advertizing support for Phase Shift Feedback and AoA Measurements) by the ISTA in IFTMR to request how ToA is estimated and if AoA measurement should be performed at the RSTA. How are these set by the RSTA in IFTM?  Also I2R ToA Type and I2R AoA Requested in IFTMR should be set in IFTMR by the ISTA to indicate if it supports Phase Shift Feedback and AoA Measurements respectively. The RSTA would then use these values to determine what it requires from the ISTA in ISTA2RSTA LMR. This is not clear in the description of these subfields. | At the end of P49L19 add the following: "The R2I ToA Type subfield is set to 1 in the initial Fine Timing Measurement frame to indicate that the RSTA estimates ToA using phase shift; and set to 0 to indicate that the RSTA estimates ToA using first path reporting."  At the end of P49L28 add the following: "The R2I AoA Requested subfield is set to 1 in the initial Fine Timing Measurement frame to indicate that the RSTA requires AoA estimates to be included in ISTA-to-RSTA LMR." | **Revised.**  See document 11-19-1461. |

***TGaz Editor: Add text starting at end of P66L21 as:***

The R2I ToA Type subfield is set to 1 in the initial Fine Timing Measurement Request frame to  
set the ToA feedback type in the RSTA2ISTA LMR to phase shift which corresponds to the  
average linear phase across the subcarriers. Otherwise, the R2I ToA Type is set to 0 and the  
RSTA2ISTA LMR ToA feedback type will be first path reporting. The R2I ToA Type subfield is set to 1 in the initial Fine Timing Measurement frame to indicate that the RSTA estimates ToA using phase shift; and set to 0 to indicate that the RSTA estimates ToA using first path reporting (#1648).

***TGaz Editor: Add text starting at end of P66L32 as:***

The R2I AoA Requested subfield is set to 1 in the initial Fine Timing Measurement Request  
frame by the ISTA when it requests the RSTA to include AoA measurements in the RSTA2ISTA LMR in the AoA feedback field. The R2I AoA Requested subfield is set to 1 in the initial Fine Timing Measurement frame to indicate that the RSTA includes the AoA measurements in the RSTA2ISTA LMR (#1648).