IEEE P802.11
Wireless LANs

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| CR for CIDs in 9.4.2.321 and 11.55.1.4.1 |
| Date: 2023-10-23 |
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Abstract

This submission proposes resolutions for following CIDs:

 3043 3042 3092 3305 3041 3039 3371 3470 3418 3040 3198 3226 3327 3326 3167 3423 3130 3166 3165 3341 3164 3163 3485 3484 3403

Revisions:

* Rev 0: Initial version.

The changes are relative to 11bf draft 2.1

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| --- | --- | --- | --- | --- | --- |
| CID | Clause | Page | Comment | Proposed Change | Resolution |
| 3043 | 9.4.2.321 | 77.60 | "Number of" in the name is unnecessary. | Change the name to "Max Rx Antennas" | **Accept.**Note to TGbf editor: replace all instances in the spec of the term “Maximum Number of Rx Antennas" with "Max Rx Antennas" . |
| 3042 | 9.4.2.321 | 77.53 | Using an equation as a name makes for difficult reading. | Change the name to "Large Ng Support" or "High Compression Support" | **Revised.** Agree with the commenter;"High Compression Support" seems more appropriate. **TGbf editor:** replace all instances of “Ng = 16” field name in the spec with “High Compression Support”. |
| 3092 | 9.4.2.321 | 77.42 | "Measurement Session Query frame" shall be "Sensing Measurement Query frame". | As in comment. | **Accept.**  |
| 3305 | 9.4.2.321 | 77.41 | Listing out the frames is not the best practice. | Change to: that the AP supports. This field is reserved in aframe sent by a non-AP STA. | **Accept.**  |
| 3041 | 9.4.2.321 | 77.40 | "Min Time Between Measurements" is just a long way of saying "Min Measurement Interval" | Change the name of the "Min Time Between Measurements" to "Min Measurement Interval" throughtout. | **Accept.**  |
| 3039 | 9.4.2.321 | 77.36 | The field name "Max Number of Supported Sessions as Responder" is unnecessarily long. Its purpose can be made clear in the definition; the full purpose does not need to be part of the name. Use of "corresponds" is inappropriate; "indicates" is more accurate. There is a technical issue here as well: the max is with respect to the recipient, not an overall max. | Change the field name to "Max Supported Sessions". Change field defnition to "The Max Supported Sessions field indicates the maximum number of concurrent sensing measurement sessions that the STA supports as a sending responder with the STA that is the recipient of the Sensing Capabilities element as the sensing initiator." If the group does not accept the name change, then at least capitalize the prepositions in the name (Of/As) to avoid ambiguity. | **Accept.**  |
| 3371 | 9.4.2.321 | 77.36 | AP STA can currently set 'max number of supported sessions as responder' to 0 and disable all STA-initiated sensing. | If the dot11SensingImplemented is set to true, AP STA should not set 'max number of supported sessions as responder' to 0. | **Reject.** Due to AP resource limitation, its reasonable for an AP to temporarily disallow new STA initiated sensing sessions.  |
| 3470 | 9.4.2.321 | 77.36 | AP STA can currently set 'max number of supported sessions as responder' to 0 and disable all STA-initiated sensing. | If the dot11SensingImplemented is set to true, AP STA should not set 'max number of supported sessions as responder' to 0. | **Reject.** Due to AP resource limitation, its reasonable for an AP to temporarily disallow new STA initiated sensing sessions.  |
| 3418 | 9.4.2.321 | 77.19 | There is a reference to "Table 9-322h23fc (Max R2I/I2R LTF Total subfields)", in which the "encoding of the Max TX HE-LTF Total and the Max RX HE-LTF Total fields is given". The reference is correct for 11az D7.0, but should be updated to 802.11az-2022 Table 9-322am. | As in comment | **Revised.** After 11az is incorporated into REVme, the recent most table number is Table 9-411 in REVme 2.1.**TGbf editor: :** please implement changes as shown in doc 11-23/1828r0 tagged as #3418 |
| 3040 | 9.4.2.321 | 76.05 | The "=" in the field names is misleading and unnecessary. Misleading because it seems to equate Tx STS with 230 MHz. | Change the field names by removing the "=", or, alternatively, replacing the "=" with "For". E.g., "Max TX STS 160 MHz" or "Max TX STS For 160 MHz". | **Revised.** Even though there is a “<= “ being used for the preceding field, it makes sense for clarity to rename the field names that use “=”.**TGbf editor:** replace all instances of “Max TX STS = 160 MHz”, “Max TX STS = 320 MHz”, “Max RXSTS = 160MHz” and “Max RXSTS = 320MHz” with “Max TX STS for 160 MHz”, “Max TX STS for 320 MHz”, “Max RXSTS for 160MHz”and “Max RXSTS for 320MHz” respectively.   |
| 3198 | 9.4.2.320 | 73.23 | The BSS color can also be transmitted by an EHT AP according the descrpition in 11be D4.0, please add the sentence. | as in comment | **Reject.** The BSS Color field is contained in HE Operation element even in EHT AP. As such the current sentence, which does not restrict this to only HE AP, would also apply to EHT AP.  |
| 3226 | 9.4.2.320 | 72.42 | "The RX HE-LTF Repetition field is set to the requested number of HE-LTF repetitions that the sensing responder uses in the reception of an SI2SR or SR2SR NDP that is ..." - This language is confusing. The number of sequences that an RX STA uses is something the standard does not control. The terminology should be that the receiver should expect such a number of LTFS. | Replace the term "uses" with something better as suggested | **Revised.** Agree in principle. Replace “uses in reception of..” with “receives in..”**TGbf editor:**please implement changes as shown in doc 11-23/1828r0 tagged as #3226 |
| 3327 | 11.55.1.4.1 | 141.34 | typo "This value shall be 16 if the Ing field is set to 1, and shall be either 4 or 8 if theINg field is set to 0." | Change to "This value shall be 16 if the Ing field is equal to 1, and shall be either 4 or 8 if theINg field is equal to 0." | **Accept.**  |
| 3326 | 11.55.1.4.1 | 141.32 | typo "if the INb field is set to 1, and shall be 8 bits if the field Inb is set to 0" | Change to "if the INb field is equal to 1, and shall be 8 bits if the field INb is equal to 0." | **Accept.**  |
| 3167 | 11.55.1.4.1 | 141.13 | Change "space-streams' to " space-time streams" | As per comment | **Revised.** Agree in principle. **TGbf editor:**please implement changes as shown in doc 11-23/1828r0 tagged as #3167 |
| 3423 | 11.55.1.4.1 | 141.07 |  According to Motion 372 in 11-23/0410r33 and document 11-23/123r1, the first sentence of the second bullet should read "- The requested number of HE-LTF repetitions that the sensing responder receives in an SI2SR or SR2SR NDP that is either (#1997) a HE Ranging NDP in the RX HE-LTF Repetition field." | Please change the first bullet as agreed in Motion 372 in 11-23/0410r33 | **Revised.** Agree in principle. **TGbf editor:**please implement changes as shown in doc 11-23/1828r0 tagged as #3423 |
| 3130 | 11.55.1.4.1 | 141.06 | Typo | Change SR2SR to SI2SR. | **Revised.** Agree in principle. **TGbf editor:**please implement changes as shown in doc 11-23/1828r0 tagged as #3423 |
| 3166 | 11.55.1.4.1 | 140.65 | Should the phrase "Sensing Bandwidth" be changed to "aSensingBandwidth" like other labels? | As per comment | **Accept.** Note to TGbf editor: replace all instances in the spec of the term “Sensing Bandwidth" with " aSensingBandwidth " . |
| 3165 | 11.55.1.4.1 | 140.33 | There are two places where normative text specified for CSI Variation Threshold field; in P140 L5-8 & L33-46. Suggest combining the relevant text and place it under the bulleted item withing L5-8. | As per comment | **Revised.** Agree in principle. **TGbf editor:**please implement changes as shown in doc 11-23/1828r0 tagged as #3165 |
| 3341 | 11.55.1.4.1 | 140.24 | "Sensing Measurement Session Query frame" is undefined, and should be "Sensing Measurement Query frame". | As in comment | **Accept.** |
| 3164 | 11.55.1.4.1 | 140.15 | Change the order of between paragraph in P140 L15-21 and L21-24 so that 'positive case' is first and then negative case. | As per comment | **Revised.** Agree in principle. **TGbf editor:**please implement changes as shown in doc 11-23/1828r0 tagged as #3164 |
| 3163 | 11.55.1.4.1 | 140.09 | Change "shall" to "may" as the use of SR2SR should be purgative of application interface and not responder's capability | As per comment | **Revised.** Agree in principle. **TGbf editor:**please implement changes as shown in doc 11-23/1828r0 tagged as #3163 |
| 3485 | 11.55.1.4.1 | 140.09 | SR2SR field being 1 in Sensing Capabilities element does not necessarily mean the sensing initiator will definitely assign this STA using Sensing Measurement Parameter element to perform SR2SR sounding in TB sensing. | Change "The SR2SR field shall be set to 1 only if the SR2SR subfield in the last Sensing Capabilities element received from the sensing responder is set to 1.'to " The SR2SR field shall be set to 0 if the SR2SR subfield in the last Sensing Capabilities element received from the sensing responder is set to 0. The SR2SR field shall be set to 1 if the SR2SR subfield in the last Sensing Capabilities element received from the sensing responder is set to 1 and the sensing initiator intends to assign this sensing responder to participate in the SR2SR variant of a TF sounding phase." | **Revised.** Agree in principle. However, it may be simpler to just change “shall” to “may. **TGbf editor:**please implement changes as shown in doc 11-23/1828r0 tagged as #3163 |
| 3484 | 11.55.1.4.1 | 139.65 | In TB sensing specific subelement, the AID/USID field contains 16 bits, not 12 bits. | Change "12bit" to "16-bit" | **Revised.** We clarify that the 12 bit is for the AID or USID contained in the 16bit “AID/USID field”.**TGbf editor:**please implement changes as shown in doc 11-23/1828r0 tagged as #3484 |
| 3403 | 9.6.7.50 | 140.24 | Change to "Sensing Measurement Query frame | As in comment | **Accept.**  |

***Please revise the following paragraph in P77L15 of 11bf draft 2.1******as follows:***

The Max TX HE-LTF Total field and the Max RX HE-LTF Total field indicate the maximum number of HE-LTFs that the STA supports in the transmission and the reception, respectively, of an SI2SR, SR2SI, or SR2SR NDP that is either an HE Ranging NDP or an HE TB Ranging NDP. The encoding of the Max TX HE-LTF Total and the Max RX HE-LTF Total fields is given in Table 9-411(#3418) (Max R2I/I2R LTF Total subfields).

***Please revise the following paragraph in P72L42 of 11bf draft 2.1******as follows:***

The RX HE-LTF Repetition field is set to the requested number of HE-LTF repetitions that the sensing responder receives in (#3226) an SI2SR or SR2SR NDP that is a HE Ranging NDP or a HE TB Ranging NDP. The field is set to the number of HE-LTF repetitions minus 1

***Please revise the following paragraph in P72L52 of 11bf draft 2.1******as follows:***

The RX STS field indicates for bandwidths less than or equal the value signaled in the BW field, the requested number of space-time streams that the sensing responder receives in(#3226) an SI2SR or SR2SR NDP in TB or non-TB sensing measurement exchanges minus 1.

***Please revise the following paragraph in P141L5 of 11bf draft 2.1******as follows:***

If a Sensing Measurement Parameters element is included in the Sensing Measurement Request frame, the sensing initiator shall assign the following parameters in the Sensing Measurement Parameters field after accounting for the sensing capabilities of the sensing responder known from last received Sensing Capabilities element from that STA:

— The requested bandwidth to be used in the transmission of SI2SR NDP, SR2SI NDP, and SR2SR

NPD. This value shall not be greater than the maximum bandwidth the sensing responder supports for sensing. This value is referred to as Sensing Bandwidth.

— The requested number of HE-LTF repetitions that the sensing responder transmits in an SR2SI NDP or SR2SR NDP that is a HE Ranging NDP or a HE TB Ranging NDP in the TX HE-LTF Repetition field. This value shall not be greater than the maximum number of HE-LTF repetitions that the sensing responder is capable of transmitting. This value is referred to as *aSensingSRTXRep*.

— The requested number of HE-LTF repetitions that the sensing responder receives in an SI2SR(#3423) or

SR2SR NDP that is either a HE Ranging NDP in the RX HE-LTF Repetition field. This value shall not be greater than the maximum number of HE-LTF repetitions that the sensing responder is capable of receiving. This value is referred to as *aSensingSRRXRep*.

— The requested number of space-time streams the sensing responder receives in an SI2SR or SR2SR NDP in the RX STS field. This value shall not be greater than the maximum number of space-time(#3167) streams that the sensing responder is capable of receiving for all bandwidths smaller than or equal to the maximum bandwidth used in TB and non-TB sensing measurement exchanges. This value is referred to as *aSensingSRRXSTS*.

— The requested number of space-time streams the sensing responder transmits in an SR2SI or SR2SR NDP in the TX STS field. This value shall not be greater than the maximum number of space-time (#3167) streams that the sensing responder is capable of transmitting for all bandwidths smaller than or equal to the maximum bandwidth used in TB and non-TB sensing measurement exchanges. This value is referred to as *aSensingSRTXSTS*.

— The requested number of antennas to be used in the reception of SI2SR and SR2SR NDPs by the

sensing responder. This value shall not be greater than the maximum number of antennas the sensing responder is capable of using in the reception of SI2SR and SR2SR NDPs.

— The number of bits used in the encoding of each CSI value reported in a Sensing Measurement

Report frame by the sensing responder in the field. This value shall be 10 bits if the field is set to 1, and shall be 8 bits if the field is set to 0.

— The subcarrier grouping to be used in a Sensing Measurement Report frame by sensing responder in the field. This value shall be 16 if the field is set to 1, and shall be either 4 or 8 if the field is set to 0 (see 9.4.1.73.3 (Sensing Measurement Report Control field)).

***Please revise the following paragraph in P139L61 of 11bf draft 2.1******as follows:***

If the sensing initiator is an AP and it intends to assign operational parameters to a sensing responder, it shall include a TB Sensing Specific subelement in the Sensing Measurement Parameters element in a Sensing Measurement Request frame and shall assign the following:

 — The AID or USID in the AID/USID (#3484) field.

— The Poll Assigned field shall be set to 1 if the Poll Required field within the last Sensing Capabilities element received from the sensing responder is set to 1, or it intends to poll the non-AP STA in the TB sensing measurement exchange.

—If the Sensing Receiver field or the Sensing Measurement Report Requested field of the Sensing Measurement Parameters is set to 0, then the CSI Variation Threshold field is reserved. If the last Sensing Capabilities element received from the STA addressed by the AID/USID field has the Threshold-based Reporting field set to 1, and the sensing initiator intends to use threshold-based reporting in the corresponding TB sensing measurement exchanges, then the CSI Variation Threshold field shall be set to a value in the range of 0 to 10 to indicate the CSI variation threshold (see Table 9-401u (CSI Variation Threshold field definition)). Otherwise, the CSI Variation Threshold field shall be set to 15 to indicate basic reporting is used in the corresponding TB sensing measurement exchanges(#3165).

— The SR2SR field may (##3163 **)** be set to 1 only if the SR2SR subfield in the last Sensing Capabilities element received from the sensing responder is set to 1.

— The RSTA Availability Information field in the RSTA Availability Window element containing

exactly one Availability Window Information field. The Availability Window Broadcast Format subfield in the Header subfield in the RSTA Availability Information field in this RSTA Availability Window element shall be set to 0 (see 9.4.2.297 (RSTA Availability Window element)). (#3164) If the sensing responder is not available in the sensing availability window provided by the AP, the sensing responder shall set the STATUS CODE to REJECTED\_WITH\_SUGGESTED\_CHANGES and include a TB sensing specific subelement in the Sensing Measurement Response frame. The TB sensing specific subelement shall include an ISTA availability window element (see 9.4.2.296

(ISTA Availability Window element)). (#3164)

Figure 9-788edk (Example of a bitmap with 200 TU periodicity signalled in the ISTA Availability Window element), 9-788edl (Example of mapping of ISTA's availability bitmap to RSTA's TSF) and 9-788edm (Example of how an RSTA assigns an Availability Window to an ISTA) together also show an example of how an AP (sensing initiator) assigns an availability window from the received Availability Window element of a non-AP STA (sensing responder).

(#3165)