IEEE P802.11
Wireless LANs

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| SA Comment Resolution for 5 CIDs |
| Date: 2025-03-04 |
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Abstract

This contribution attempts to provide the resolution for R1-1, R1-2, R1-3, R1-4 and R1-16 (total of 5).

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| CID | Page | Comment | Proposed Change | Resolution |
| R1-1 | 93.41 | In order to align the design approach for RSTA to send 'update" (i.e. TPE or new Disabled Subchannel Bitmap) it is advisable to transmit the new Disable Subchannel Bitmap as a new optional field in the R2I LMR similar to the TPE. The suggestion is to add a new field in LMR and a normative text to transmit the new field when needed. Additionally, I noticed that the puncture pattern change for associated devices occur by transmitting CSA element (channel Switch Announcement) in beacons with 'Channel Switch Count' which counts number of TBTTs in which the change would occur. My suggestion is to also add similar 'counter' as part of the new field for the unassociated STA to be aware of when the actual change occurs. | Delete P93L41-L43 and P94L1-2 and add a new normative text. | Revised.TGbk editor make changes identified in <https://mentor.ieee.org/802.11/dcn/25/11-25-0291-02-00bk-sa-comment-resolution-for-5-cids.docx> |
| R1-2 | 36.09 | Add the text "and shall be ordered based on the corresponding rules for the Transmit Power 32 Envelope element defined in 10.22.4 (Operation with the Transmit Power Envelope element)" at the end of the line after the word "RSTA". The change make the spec text the same as the one in P39L32-33 for the subclause 11-21.6.3.3 (NT&TB). | As per comment | RejectedThe format of the TPE is already described in clause 9 hence no need to restate it. |
| R1-3 | 93.41 | In order to align the design approach for RSTA to send 'update" (i.e. TPE or new Disabled Subchannel Bitmap) it is advisable to transmit the new Disable Subchannel Bitmap as a new optional field in the R2I LMR similar to the TPE. The suggestion is to add a new field in LMR and a normative text to transmit the new field when needed. Additionally, I noticed that the puncture pattern change for associated devices occur by transmitting CSA element (channel Switch Announcement) in beacons with 'Channel Switch Count' which counts number of TBTTs in which the change would occur. My suggestion is to also add similar 'counter' as part of the new field for the unassociated STA to be aware of when the actual change occurs. | Proposed Change: Delete P93L41-L43 and P94L1-2 and add a new normative text. | Revised.TGbk editor make changes identified in <https://mentor.ieee.org/802.11/dcn/25/11-25-0291-02-00bk-sa-comment-resolution-for-5-cids.docx> |
| R1-4 | 36.09 | Add the text "and shall be ordered based on the corresponding rules for the Transmit Power 32 Envelope element defined in 10.22.4 (Operation with the Transmit Power Envelope element)" at the end of the line after the word "RSTA". The change make the spec text the same as the one in P39L32-33 for the subclause 11-21.6.3.3 (NT&TB). | As per comment. | RejectedThe format of the TPE is already described in clause 9 hence no need to restate it. |
| R1-16 | 93.41 | "If an ISTA is not associated with the RSTA and has an ongoing 320 MHz FTM session, the RSTA shall notify any change in Disabled Subchannel Bitmap field by transmitting an A-MPDU containing an FTM frame tha" - so why do we have this mechanism of updating ISTAs usign AMPDU LMR+FTM for puncturing, but we use something completely different for TPE? | Unify procedure to update un-associated ISTAs with TPE and disabled subchannel bitmap | Revised.TGbk editor make changes identified in <https://mentor.ieee.org/802.11/dcn/25/11-25-0291-02-00bk-sa-comment-resolution-for-5-cids.docx> |

####  Discussion: The commenter suggests aligning the implementation of ‘updates’ between TPE and the Puncture Pattern for NTB/TB ranging measurement exchange since current normative text uses transmission of R2I LMR with TPE field vs. transmission of FTM frame aggregated with R2I LMR for the Puncture Pattern. Furthermore, the commenter suggests adding the concept of ‘time’ as to when the Puncture Pattern update is to be activated for unassociated ISTA. The inclusion of ‘time’ introduces unnecessary complexity and when discussed with TG members, the new proposed solution is to add a Puncture Pattern field in R2I LMR just like TPE. As such RSTA can notify the un-associated STA with the updated content and let ISTA to decide as to how to proceed. The unassociated ISTA can proceed with options below:

#### Receive RSTA’s beacon to find out when the new Puncture Pattern is to be activated and manage its ranging measurement exchanges with RSTA, i.e., before activation use the exiting Puncture Pattern and after activation use the new puncture pattern.

#### It doesn’t support the new puncture pattern thus complete all remaining ranging measurement exchange with the exiting Puncture Pattern and then terminate the FTM session (implicitly or explicitly).

#### *Resolution for R1-1, R1-3 and R1-16:*

#### *Instruction to 11bk editor: Change Figure 9-1234 (LMR frame Action field format) in 9.6.7.49 LMR frame format as shown* (#R1-1, #R1-3, #R1-16)

#### 9.6.7.49 LMR frame format

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |
|  | Category | Public Action | Dialog Token | TOD | TOA | TOD Error | TOA Error |
| Octets: | 1 | 1 | 1 | 6 | 6 | 1 | 1 |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | CFO Parameter | R2I NDP Tx PWR | I2R NDP Target RSSI | Secure HE-LTF Parameters (optional) | AOA Feedback(optional) | TPE(optional) | Puncture Pattern (optional) |
| Octets: | 2 | 1 | 1 | 14 | 9 | variable |  5 |

**Figure 9-1234—LMR frame Action field format**

***Insert the following paragraph at the end of clause 9.6.7.49 (LMR frame format):***

The Puncture Pattern field is optionally present. If present, it contains a Puncture Pattern element as defined in 9.4.2.xxx Puncture Pattern element. (#R1-1, #R1-3, #R1-16)

#### *Instruction to 11bk editor: Add the following paragraph as a new element to subclause 9.4.2 Elements*

9.4.2.1 Elements

9.4.2.1 General

**Table 9-130 – Element IDs**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Element | Element ID | Element ID Extension | Extensible | Fragmentable |
| … |  |  |  |  |
| Puncture Pattern Element | 254 | ANA | Yes | No |

9.4.2.xxx Puncture Pattern element (#R1-1, #R1-3, #R1-16)

The format of the Puncture Pattern element is shown in Figure [9-xxxx](#F09o1048) (Puncture Pattern element format).

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | B0 B7 | B8 B15 | B16 B23 | B24 B39 |
|  | Element ID | Length | Element ID Extension | Puncture Pattern |
| Octets: | 1 | 1 | 1 | 2 |

1. Figure 9-xxx—Puncture Pattern element format

The Element ID, Length, and Element ID Extension fields are defined in 9.4.2.1 (General).

The Puncture Pattern field in the Puncture Pattern element has the same format and value as the Disabled Subchannel Bitmap field sent in the EHT Operation element (9.4.2.321 EHT Operation element) as part of the Beacon transmissions.

***Instruction to 11bk editor: Delete subclause 11.21.6.5.2 as below***

~~11.21.6.5.2 Operation in the 6 GHz band~~

~~If an ISTA is not associated with the RSTA and has an ongoing 320 MHz FTM session, the RSTA shall notify any change in Disabled Subchannel Bitmap field by transmitting an A-MPDU containing an FTM frame that includes a 320 MHz Ranging subelement with an updated Puncturing Pattern field and an R2I LMR whenever the RSTA is permitted to transmit such an LMR to the ISTA.~~

***Instruction to 11bk editor*: Add the paragraph below in P39 right after Table 11-14aa**

If an RSTA has an ongoing 320 MHz FTM session and is including the Disabled Subchannel Bitmap field in the EHT Operation element (9.4.2.321 EHT Operation element) as part of the Beacon transmissions, the RSTA shall also include the Puncture Pattern field in the LMR sent to an unassociated ISTA.

Upon the reception of a new puncturepattern, the unassociated ISTA shall either:

* Receive Beacons from the RSTA to learn the switching time and activate the new puncture pattern before performing ranging measurement exchange(s) with the new puncture pattern.
* Terminate the FTM session if it is not able to support the new puncture pattern.

Once the new puncture pattern takes effect, the RSTA and ISTA shall use the new puncture pattern to perform ranging measurement exchanges. **(#R1-1, #R1-3, #R1-16**)

**References: 802.11bk D4.0**