IEEE P802.11
Wireless LANs

|  |
| --- |
| LB272 CR for CIDs on TF Sounding Phase – Part 2 |
| Date: 2023-06-30 |
| Author(s): |
| Name | Company | Address | Phone | email |
| Dong Wei | NXP | 6501 W. William Cannon Dr, Austin, TX, U.S.A. |  | dong.wei@nxp.com |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

Abstract

This document aims to resolve the following 18 LB272 comments: CIDs 1013, 1453, 1573, 1610, 1612, 1613, 1615, 1617, 1689, 1712, 1733, 1866, 2014, 2034, 2035, 2037, 2282, and 2286.

R0: Initial version

R1: Add CIDs 1453, 1610, and 1612

R2: Changes made during the ad hoc meeting on July 6

##### ****CID 1689****

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **CID** | **Clause**  | **Page** | **Comment** | **Proposed Change** |
| 1689 | 9.3.1.22.14.6 | 81.09 | Add to the section 9.3.1.22.14.6 SR2SR Sounding Trigger text that includes User Info field with AID=2008 such as | "The format of the User Info field in the SR2SI Sounding Trigger frame is defined in Figure 9-98e (User Info field for SR2SI Sounding Trigger frame if the AID12/USID12 subfield is equal to 2008) if the AID12/USID12 subfield is equal to 2008"since "TSF synchronization" can also be exploited in SR2SR sequence |

**Proposed resolution**: Accepted

##### ****CID 1712****

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **CID** | **Clause**  | **Page** | **Comment** | **Proposed Change** |
| 1712 | 11.55.1.4 | 174.27 | Delete the text "In TB sensing measurement instances, the sensing initiator shall not assign any RU to a sensing responder in a Sensing Report Trigger frame if the sensing initiator assigns in a Sensing Measurement Setup Request frame the role of sensing receiver to the sensing responder and also sets the Sensing Measurement Report Requested subfield to 0" | As per commentas it describe what not to do which can be many scenarios |

**Proposed resolution**: Accepted

##### ****CID 2282****

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **CID** | **Clause**  | **Page** | **Comment** | **Proposed Change** |
| 2282 | 11.55.1.5.2.1 | 176.40 | In 11.55.11, it says "A STA acting as a sensing initiator ...neither a sensing transmitter nor a sensing receiver", i.e. AP can be neither sensing rx and sening tx in a TB measurement instance with only SR2SR soundingIn 9.3.1.22..14.6 it says "The SR2SR Sounding Trigger frame contains one Transmitter User Info field and one or more Receiver User Info fields" i.e. if there are more than 1 sensing receivers (one of them could be SBP initiator), then the measurement report from the sensing receiver which is not SBP initiator should be sent back to AP.The above indicates the spec supports a TB measurement instance consists of a TF sounding phase with only SR2SR sounding, and a reporting phase. However, the Table 11-29b does not have this combination. | add one row in table 11-29b with TF sounding phase and reporting phases checked |

**Discussion:**

Due to the resolution of CIDs 2150 and 2196, additional TB sensing measurement instances (including the one described in CID 2282) are allowed.

**Proposed resolution**: Revised

*TGbf Editor: No change to D1.2 is needed.*

##### ****CID 2034****

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **CID** | **Clause**  | **Page** | **Comment** | **Proposed Change** |
| 2034 | 11.55.1.5.2.4 | 180.64 | "In the SR2SI variant of a TF sounding phase, the AP, which is a sensing receiver, solicits NDP transmissions from one or more STAs,". A figure would be nice to illustrate "TF sounding phase - SR2SI variant" | See comment |

**Proposed resolution**: Rejected

**Discussion:**

Since the TB sensing measurement exchange example shown in Figure 11-74c in D1.2 includes the SR2SI variant of a TF sounding phase, another figure illustrating this variant is not needed.

##### ****CID 1013****

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **CID** | **Clause**  | **Page** | **Comment** | **Proposed Change** |
| 1013 | 11.55.1.5.2.4 | 180.65 | The sentence is lacks a verb in the conditional clause (after the "if"): "The SR2SI variant of a TF sounding phase shall be present in a TB sensing measurement instance if at least one STA that is a sensing transmitter in this TF sounding phase and that is not assigned to be polled or has responded in the polling phase." | Clarify the requirement - perhaps "The SR2SI variant of a TF sounding phase shall be present in a TB sensing measurement instance if there exists at least one STA that is a sensing transmitter in this TF sounding phase and that is not assigned to be polled or has responded in the polling phase. |

**Proposed resolution**: Accepted

##### ****CIDs 1733, 2286****

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **CID** | **Clause**  | **Page** | **Comment** | **Proposed Change** |
| 1733 | 11.55.1.5.2.4 | 181.02 | Change the text "TB sensing measurement instance if at least one STA that is a sensing transmitter in this TF sounding phase" to | TB sensing measurement instance if at least one STA that is a sensing transmitter to which AP is an sensing receiver in this TF sounding phase |
| 2286 | 11.55.1.5.2.4 | 180.65 | "The SR2SI variant of a TF sounding phase shall be present in a TB sensing measurement instance if at least one STA that is a sensing transmitter in this TF sounding phase and that is not assigned to be polled or has responded in the polling phase."The sounding transmitter could be SR2SR and in this case SR2SI variant does not need to exist | change to "The SR2SI variant of a TF sounding phase shall be present in a TB sensing measurement instance if at least one STA that is a sensing transmitter in this TF sounding phase to be triggered by SR2SI sounding trigger frame and that is not assigned to be polled or has responded in the polling phase" |

**Proposed resolution**: Revised

*TGbf Editor: Please revise the sentence starting at Line 52 on Page 142 of D1.2 as follows.*

The SR2SI variant of a TF sounding phase shall be present in a TB sensing measurement exchange if at least one STA that is a sensing transmitter to which the AP is a sensing receiver in this TF sounding phase and that is not assigned to be polled or has responded in the polling phase.

##### ****CID 1610****

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **CID** | **Clause**  | **Page** | **Comment** | **Proposed Change** |
| 1610 | 11.55.1.5.2.4 | 181.08 | What does "the full bandwidth" refer to? Is this the sensing bandwidth as negotiated in the corresponding sensing measurement setup? | Change the text to " ... covering the full bandwidth as negotiated in the corresponding sensing measurement setup ..." OR "... covering the full sensing bandwidth ..." |

**Discussion:**

We agree in principle with the commenter. The phrase “covering the full bandwidth” is vague and does not provide more useful information since it is stated in the context that the SR2SI NDP shall be transmitted using uplink MU-MIMO if there are multiple sensing responders.

**Proposed resolution**: Revised

*TGbf Editor: Please revise the sentence starting at Line 61 on Page 142 of D1.2 as follows.*

The SR2SI Sounding Trigger frame shall allocate spatial resources for one or more SR2SI NDP transmissions.

##### ****CID 1453****

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **CID** | **Clause**  | **Page** | **Comment** | **Proposed Change** |
| 1453 | 11.55.1.5.2.4 | 181.10 | "The R2I NDP may be transmitted with more than 1 spatial streams." should be "The R2I NDP may be transmitted in an uplink MU-MIMO manner, and may be transmitted with more than 1 spatial streams per sensing responder and with more than 1 LTFs per sensing responder". It is not clear whether "more than 1 spatial streams" means "more than 1 spatial streams across all the sensing responders" or "more than 1 spatial streams per sensing responder". "More than 1 spatial streams per sensing responder" automatically means "more than 1 spatial streams across all the sensing responders" and thus, we do not need any further clarification sentence for the number of spatial streams across all the sensing responders. | "The R2I NDP may be transmitted with more than 1 spatial streams." should be "The R2I NDP may be transmitted in an uplink MU-MIMO manner, and may be transmitted with more than 1 spatial streams per sensing responder and with more than 1 LTFs per sensing responder". |

**Proposed resolution**: Revised

*TGbf Editor: Please revise the sentence starting at Line 62 on Page 142 of D1.2 as follows.*

A sensing responder may transmit an SR2SI NDP using more than one spatial stream. The SR2SI NDP shall be transmitted using uplink MU-MIMO if there are multiple sensing responders.

##### ****CID 1866****

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **CID** | **Clause**  | **Page** | **Comment** | **Proposed Change** |
| 1866 | 11.55.1.5.2.4 | 181.15 | The first statement of the pragaraph is inaccurate, it compares a number of transmitters with uplink resources | Delete: "If the number of available sensing transmitters exceeds the available uplink resources" and start the paragraph with "An AP may perform the frame exchange ....." |

**Proposed resolution**: Accepted

##### ****CID 1612****

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **CID** | **Clause**  | **Page** | **Comment** | **Proposed Change** |
| 1612 | 11.55.1.5.2.4 | 181.17 | Is it allowed to trigger the same sensing transmitter multiple times in the same TF sounding phase which contains multiple SR2SI Sounding Trigger frames. | Specify that the same sensing transmitter can be triggered at most once in the same TF sounding phase which contains multiple SR2SI Sounding Trigger frames. |

**Proposed resolution**: Reject

**Discussion:**

There is no reason to limit the AP from triggering the same sensing responder multiple times in a TF sounding phase.

##### ****CID 1613****

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **CID** | **Clause**  | **Page** | **Comment** | **Proposed Change** |
| 1613 | 11.55.1.5.2.4 | 181.36 | It is not clear what the PPDU bandwidth is referring to. | Change the text to "The format of the SR2SI NDP in the TF sounding phase of a TB sensing measurement instance shall be an HE TB Ranging NDP, as described in 27.3.18a.2 (HE TB Ranging NDP) for sensing bandwidths less than or equal to 160MHz." |

**Discussion:**

Since 320 MHz operation is not supported is not supported in the SR2SI variant of a TF sounding phase, it is not needed to have the condition on PPDU bandwidth.

**Proposed resolution**: Revised

*TGbf Editor: Please revise the 1st paragraph below Figure 11-74f of D1.2 as follows.*

The format of the SR2SI NDP in the TF sounding phase of a TB sensing measurement exchange shall be an HE TB Ranging NDP, as described in 27.3.18a.2 (HE TB Ranging NDP).

##### ****CIDs 2035, 2014****

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **CID** | **Clause**  | **Page** | **Comment** | **Proposed Change** |
| 2035 | 11.55.1.5.2.4 | 182.01 | "The uplink power control, timing, and frequency synchronization requirements of unassociated STAs performing TB measurement instance shall follow the same rules as those of associated HE STAs". Add reference to the relevant section. | Add reference to 27.3.15 (presumably) |
| 2014 | 11.55.1.5.2.4 | 182.02 | It is unnecessary to indicate 'HE' for associated STAs. | Change 'the same rules as those of associated HE STAs.' to 'the same rules as those of associated STAs.' |

**Proposed resolution**: Revised

*TGbf Editor: Please revise the paragraph on lines 54 and 55 on page 143 of D1.2 as follows.*

The uplink power control, timing, and frequency synchronization requirements of unassociated STAs performing TB measurement exchange shall follow the same rules as those of associated HE STAs, as described in 27.3.15 (Transmit requirements for PPDUs sent in response to a triggering frame).

##### ****CID 2037****

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **CID** | **Clause**  | **Page** | **Comment** | **Proposed Change** |
| 2037 | 11.55.1.5.2.5 | 182.34 | "The SR2SR Sounding Trigger frame shall allocate spatial resources for the SR2SR NDP transmission covering the full bandwidth.". What does "full bandwidth" mean here? How are the STAs capabilities (specifically BW support) taken into account? | Clarify "full bandwidth" |

**Discussion:**

We agree in principle with the commenter. The phrase “covering the full bandwidth” is vague and does not provide more useful information since it is stated in the context that the SR2SI NDP shall be transmitted using uplink MU-MIMO if there are multiple sensing responders.

**Proposed resolution**: Revised

*TGbf Editor: Please revise the sentence starting at Line 22 on Page 144 of D1.2 as follows.*

The SR2SR Sounding Trigger frame shall allocate spatial resources for the SR2SR NDP transmission.

##### ****CIDs 1617****

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **CID** | **Clause**  | **Page** | **Comment** | **Proposed Change** |
| 1617 | 11.55.1.5.2.5 | 182.46 | It is not clear what the PPDU bandwidth is referring to. | Change the text to "The format of the SR2SR NDP in the TF sounding phase of a TB sensing measurement instance shall be an HE TB Ranging NDP, as described in 27.3.18a.2 (HE TB Ranging NDP) for sensing bandwidths less than or equal to 160MHz." |

**Proposed resolution**: Rejected

**Discussion:**

Since 320 MHz operation is not supported is not supported in the SR2SR variant of a TF sounding phase, it is not needed to have the condition on PPDU bandwidth.

##### ****CIDs 1615****

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **CID** | **Clause**  | **Page** | **Comment** | **Proposed Change** |
| 1615 | 11.55.1.5.2.5 | 182.47 | The format of SR2SR NDP is specified in informative text while it should be specified in normative text is clause 11 | Change the text in " ... the SR2SR NDP in the TF sounding phase of a TB sensing measurement instance is an ... " to " ... the SR2SR NDP in the TF sounding phase of a TB sensing measurement instance shall be an ... " |

**Proposed resolution**: Accepted

##### ****CID 1573****

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **CID** | **Clause**  | **Page** | **Comment** | **Proposed Change** |
| 1573 | 11.55.1.5.4 | 188.31 | MAC frames has no bandwidth of its own, the bandwidth is for the PPDU carrying the frame. | " ... The bandwidth of the PPDUs carrying the frames transmitted in a TB or non-TB sensing measurement instance |

**Proposed resolution**: Accepted

**Note: the proposed resolution is consistent with the approved resolutions of CIDs 1569 (23/0872r1), 1570 (23/0828r1), 1571 (23/0828r1), and 1572 (23/0641r3).**

**SP:** Do you agree to the resolutions provided in the document 11-23/1126for the following 18 CIDs: 1013, 1453, 1573, 1610, 1612, 1613, 1615, 1617, 1689, 1712, 1733, 1866, 2014, 2034, 2035, 2037, 2282, and 2286?