IEEE P802.11
Wireless LANs

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| Resolutions for Instance Comments in LB272 - Part 3 |
| Date: 2023-05-12 |
| Author(s): |
| Name | Affiliation | Address | Phone | email |
| Cheng Chen | Intel |  |  | cheng.chen@intel.com |

Abstract

This submission proposes resolutions to the following comments submitted in LB272 under Instance topic. The CIDs are referring to D1.0. The text used as reference is D1.0.

CIDs: 2150 2196 1744 1604

Revision history:

R0: Original version

R1: Updated the resolutions to CID 2150 and CID 2196 based on offline discussions.

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| **CID** | **Clause** | **Page** | **Comment** | **Proposed change** |
| 2150 | 11.55.1.5.2.1 | 176.35 | It is not clear whether Table 11-29b contains all "relevant" or valid combinations. | List all valid combinations in Table 11-29b |
| 2196 | 11.55.1.5.2.1 | 176.43-176.57 | Table 11-29b lacks a combination of polling phase, NDPA sounding phase and reporting phase. | Add the combination as in the comment. |

**Proposed resolution**: Revised to both.

**Discussion**: Among a total of 15 possible combinations of different phases:

* There are seven combinations in Table 11-29b of D1.0.
* CID 2196 suggests one new combination “polling phase + NDPA sounding phase + reporting phase”, which is indeed a valid combination.
* The following three new combinations are also considered valid based on discussions with members:
	+ Polling phase + TF sounding phase + reporting phase
	+ TF sounding phase + reporting phase
	+ NDPA sounding phase + TF sounding phase
* “Polling phase only” is considered as one exception. It only happens when all STAs are assigned to be polled but none responds with a CTS-to-self.
* The following three combinations are considered invalid based on discussions with members:
	+ Polling phase + reporting phase (i.e., without any sounding phase)
	+ Reporting phase only.
	+ NDPA sounding phase only

Reference spec text for the reason why NDPA sounding phase only is not a valid combination:

* + If a sensing initiator assigns in a Sensing Measurement Setup Request frame only the role of sensing receiver to the sensing responder and sets the Sensing Measurement Report Requested subfield to 0, the sensing initiator shall also assign the sensing responder to be polled in the TB sensing measurement instance by setting the Poll Assigned subfield of the Sensing Measurement Parameters field within the Sensing Measurement Setup Request frame to 1.

As a result, instead of listing all possible combinations, an easier way is to specify the three invalid combinations in. In this case, we can delete Table 11-29b.

***TGbf editor, make the following change in D1.0:***

A TB sensing measurement instance may include~~s~~ polling phase, NDPA sounding phase, Trigger frame (TF) sounding phase, and reporting phase. ~~with relevant combinations as shown in Table 11-29b (Combinations of different phases present in a TB sensing measurement instance).~~ A TB sensing measurement instance shall not consist of a reporting phase alone and shall not solely consist of a polling phase and a reporting phase. A TB sensing measurement instance shall not consist of an NDPA sounding phase alone.

***TGbf editor, delete Table 11-29b in D1.0.***

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| **CID** | **Clause** | **Page** | **Comment** | **Proposed change** |
| 1744 | 11.55.1.5.3.2 | 186.29 | Add a new paragraph to include normative text for transmission of STA Info with AID subfield equal to 2045 and its subfields for the Sensing NDP Announcement frame | Add a new paragraph such as "When transmitting a Sensing NDP Announcement frame as part of the Non-TB sensing measurement instance the non-AP STA shall transmit once STA info field with AID subfield set to 0 with unicast RA field set to the AP's MAC address. It shall also include in the first STA Info field with AID11 subfield equal to 2045 the corresponding Measurement Setup ID subfield and the SI2SR NDP TX power subfield set to indicate the TX power of the following SI2SR NDP in addition to the SI2SR NDP RSSI Target Power subfield representing the preferred receive power of SR2SI NDP in the next Non-TB sensing measurement instance" or equivalent. |

**Proposed resolution**: Revised.

**Discussion**: Similar normative text also exists in 11az spec. The proposed text from the commenter needs some minor revision.

Moreover, currently in 9.3.1.19.5 Sensing NDP Announcement frame format, the descriptions for the two fields, namely, SI2SR NDP TX Power and SR2SI NDP Target RSSI fields, are missing. We need to add the descriptions for these two fields. Since these two fields are also used in 11az, we can simply use similar description texts here.

In 11az, we have similar behaviors specified as follows:

…the NDP Announcement frame shall contain another STA Info field with AID11 subfield set to 2045, and the I2R Tx Power subfield shall be set to indicate the TX power of the following I2R NDP. If the STA Info field with AID11 subfield set to 2045 is included, the ISTA shall set the R2I NDP Target RSSI subfield to either its preferred receive signal power or a reserved value.

***TGbf editor, make the following change in D1.0:***

***Add the following paragraph at the end of Section 11.55.1.5.3.2***

In a non-TB sensing measurement instance, the Sensing NDP Announcement frame shall be transmitted by the non-AP STA as unicast with the RA field set to the address of the AP and contain one STA Info field with the AID11 field set to 0. It shall include another STA Info field with AID11 field set to 2045, and the SI2SR NDP TX Power field shall be set to indicate the TX power of the following SI2SR NDP. The SR2SI NDP RSSI Target field shall be set to the preferred receive power of the following SR2SI NDP or a reserved value.

***Add the following paragraph in Section 9.3.1.19.5***

The STA Info field with AID11 subfield equal to 2045 is used in the non-TB sensing measurement instance (see 11.55.1.5.3 (Non-TB sensing measurement instance)) to carry the SI2SR NDP TX Power and SR2SI NDP Target RSSI subfields. It is also used in a TB sensing measurement instance (see 11.55.1.5.2 (TB sensing measurement instance)) to carry the SI2SR NDP TX Power, while the SR2SI NDP Target RSSI subfield is reserved.

The SI2SR NDP TX Power field indicates the combined average power per 20 MHz bandwidth referenced to the antenna connector, of all antennas used to transmit the following SI2SR NDP. The transmit power is reported with a resolution of 1 dB, with values in the range 0 to 60 representing -20 dBm to 40 dBm, respectively. Values above 60 are reserved.

The SR2SI NDP Target RSSI field indicates the preferred receive signal power, averaged over the non-AP STA’s antenna connectors, for future SR2SI NDPs to be transmitted by the AP. The preferred receive signal power in units of dBm is Target RSSI = -110 + FVal, where FVal is the value of the SR2SI NDP Target RSSI field, except that values above 90 indicate that the non-AP STA has no receive signal power preference for the SR2SRI NDPs.

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| **CID** | **Clause** | **Page** | **Comment** | **Proposed change** |
| 1604 | 11.55.1.5.2.2 | 176.64 | What if the TXOP extends outside the sensing availability window as illustrated in Figure 11-74e? shall the TXOP be contained in the sensing availability window and does not extend beyond it? | Specify whether the TXOP may extend outside the sensing availability window or not |

**Proposed resolution**: Revised.

**Discussion**:

1. In Section 11.55.1.5.2.1, we already have the following rule:

All TB sensing measurement instances shall take place within a sensing availability window. Each sensing availability window may consist of one or more TXOPs, and each TXOP may consist of one or more TB sensing measurement instances.

1. During the sensing availability window, the AP and non-AP STAs shall only do sensing-related transmission and not any other data transmissions. In 11az we have the following rules regarding ranging in availability windows. We need to add similar rules for 11bf as well.

Within each availability window the RSTA and ISTAs shall not transmit or trigger transmission of any Data frames; they shall only perform ranging activities related to Polling, MeasurementSounding and Measurement Reporting phases, as well as signaling of modification of availabilitywindow parameters; see 11.21.6.5.1 (Availability window parameter modification), and TBranging session termination, see 11.21.6.6.2 (TB ranging and non-TB ranging session termination).

1. Once we add the rules, then it will be clear that the TXOP within an availability window cannot exceed the sensing availability window.

***TGbf editor, make the following change in D1.0:***

***Add the following paragraph in Section 11.55.1.5.2.1***

A sensing availability window is a period of time during which an AP and one or more STAs are assigned to participate in TB sensing measurement instance(s). All TB sensing measurement instances shall take place within a sensing availability window. Each sensing availability window may consist of one or more TXOPs, and each TXOP may consist of one or more TB sensing measurement instances.

Within each availability window the sensing initiator and sensing responder(s) shall not transmit or trigger transmission of any Data frames; they shall only perform sensing activities related to polling, NDPA sounding, TF sounding, and reporting phases, as well as sensing measurement setup termination, see 11.55.1.6 (Sensing measurement setup termination).

## SP

Do you support the proposed resolutions to the CIDs and incorporate the text changes into the latest TGbf draft?

Y/N/A