IEEE P802.11
Wireless LANs

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| Resolutions for Instance Comments in CC40 - Part 3 |
| Date: 2022-09-29 |
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Abstract

This submission proposes resolutions to editorial comments submitted in CC40. The text used as reference is D0.3.

CIDs: 202 315 482 567 633 769 768

Revision history:

R0: Original version

R1: Updated the document based on agreements achieved at the ad-hoc call:

* Got rid of the term “delayed reporting” and “immediate reporting”. However, the AP is allowed to send sensing measurement results corresponding to either the current non-TB sensing measurement instance or the previous non-TB sensing measurement instance in the reporting phase.
* Updated the field/subfield name from “Min Time Between Non-TB Sensing Measurement Instances” to be “Min Time Between Measurements” to be consistent with the field name defined in DCN1577r2.
* Updated the field/subfield name to “Sensing Measurement Report” to “Sensing Measurement Report Requested” to be consistent with latest contributions.

R2:

* As discussed and agreed at the TGbf call on Oct. 31st, we removed the paragraph about reporting in non-TB sensing measurement instances from DCN882r5 and inserted it in this document.
* Also added a new field “Invalid Measurement” to the Sensing Measurement Report frame to indicate whether a reported measurement result is valid or not.

R3

* Made several edits during the presentation at the TGbf call on Nov. 1st.

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| **CID** | **Clause** | **Page** | **Comment** | **Proposed change** |
| 202 | 11.21.18.7 | 71.49 | Reporting phase of the non-TB sensing measurement instance should be specified. | Specify the reporting phase of the non-TB sensing measurement instance. |
| 315 | 11.21.18.7 | 72.46 | The reporting phase should also be applicable to the non-TB Sensing measurements. | Add the reporting phase for non-TB Sensing measurements. |
| 482 | 11.21.18.7 | 72.46 | The reporting phase for the non-TB case is not required? | Reporting phase for non-TB case must be added |
| 567 | 11.21.18.7 | 72.18 | When I2R NDP is used in the non-TB sensing measurement instance, the feedback reporting should be present to get the measurement results from the AP. So, the description or related text should be added. | Add the description for the feedback report and modify figure 11-41f to apply the feedback report. |
| 633 | 11.21.18.7 | 71.04 | What's the reporting procedure of a non-TB instance? | Report could be delayed. The delayed report of a non-TB instance may be solicited by the initiator in a separate TXOP. |
| 769 | 11.21.18.6.6 | 72.20 | Add both normative text and a figure mod to include sensing measurement report fame in the sequence | As per comment |

**Proposed resolution**: Revised to all.

**Discussion**: We have had extensive discussions with the TTT members both offline and through an ad-hoc call. We have reached the following agreement in terms of defining the reporting in a non-TB sensing measurement instance:

* The same with reporting in a TB sensing measurement instance, the reporting in a non-TB sensing measurement instance is only present if the Sensing Measurement Report subfield within the Sensing Measurement Setup Request frame that resulted in the non-TB sensing measurement instance is set to 1.
* If present, the reporting is as follows: The AP sends a Senisng Measurement Report frame SIFS after the SR2SI NDP.
* The conclusion we reached at the ad-hoc call was that for non-TB sensing measurement instances, we would allow the AP to either report the results obtained form the current instance or the previous instance. This was captured in DCN882 too. The corresponding paragraph was removed in DCN882 and inserted it here as discussed in the TGbf call on Oct. 31st.

***TGbf Editor: Please make the specified changes shown in Page 4 in the spec.***

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| **CID** | **Clause** | **Page** | **Comment** | **Proposed change** |
| 768 | 11.21.18.6.6 | 71.51 | The text "Whenever the medium is available, the non-AP STA may initiate a non-TB sensing measurement instance." implies that non-AP STA can begin the NTB sequence anytime. This behavior can limit AP's data communication functionality in addition to readiness for delayed reporting of I2R NDP hence we would need to add a MinBetweenMeassurment timer as part of the MS Req/Res frame exchanges | Add MinBetweenMeasurement timer as a parameter to the MS Req/Res frame exchange and modify this text to reflect when non-AP STA can begin NTB sensing measurement sequence |

**Proposed resolution**: Revised.

**Discussion**: Agree with the commenter in principle. In 11az, we defined a similar parameter “Min Time Between Measurements” to indicate the minimum time between two consecutive non-TB ranging measurements.

**11.21.18.7 Non-TB sensing measurement instance**

**11.21.18.7.1 General**Non-TB sensing measurement instance is the non-trigger-based variant of a sensing measurement instance. It is applicable in scenarios where a non-AP STA is the sensing initiator, and an AP is the sensing responder. Whenever the medium is available, the non-AP STA may initiate a non-TB sensing measurement instance. The AP may limit the frequency with which the non-AP STA can initiate a non-TB sensing measurement instance, by assigning a minimum time interval between two consecutive non-TB sensing measurement instances.

A non-TB sensing measurement instance shall always consist of a measurement sounding phase. It shall also consist of a reporting phase if the Sensing Measurement Report Requested subfield within the Sensing Measurement Setup Request frame that resulted in the non-TB sensing measurement instance is set to 1.

The non-AP STA shall set the Min Time Between Measurements field in the Sensing Measurement Setup Request frame taking into account the measurement exchange duration and the AP’s capability indicated in the Min Time Between Measurements subfield carried in the Sensing element.

The non-AP STA shall not initiate a new non-TB sensing measurement instance associated with a same measurement setup until the assigned minimum time interval between two consecutive non-TB sensing measurement instances has elapsed.

**11.21.18.7.1 Measurement sounding phase**
A non-AP STA, acting as a sensing initiator, shall initiate a non-TB sensing measurement instance by transmitting a Sensing NDP Announcement frame addressed to the AP, followed by an SI2SR NDP after SIFS. The non-AP STA shall transmit the SI2SR NDP with the same bandwidth as the PPDU carrying the Sensing NDP Announcement frame (#564). In response to the correctly received Sensing NDP Announcement frame addressed to itself, SIFS after the SI2SR NDP, the AP shall transmit an SR2SI NDP to the non-AP STA. The AP shall transmit the SR2SI NDP with the same bandwidth as the PPDU carrying the Sensing NDP Announcement frame (#564).

If the non-AP STA is only the sensing transmitter, the Sensing NDP Announcement frame should configure the SR2SI NDP to be transmitted with the minimum possible length of one LTF symbol (#436). If the nonAP STA is only the sensing receiver, the Sensing NDP Announcement frame should configure the SI2SR NDP to be transmitted with the minimum possible length of one LTF symbol (#436).

*Editor’s Note: The formats of the Sensing NDP Announcement frame, SI2SR NDP, and SR2SI NDP are
TBD.*

**11.21.18.7.2 Reporting phase**

The reporting phase shall only be present if the Sensing Measurement Report Requested subfield within the Sensing Measurement Setup Request frame that resulted in the non-TB sensing measurement instance is set to 1.

If the reporting phase is present, the AP shall send a Sensing Measurement Report frame to the non-AP STA SIFS after transmitting the SR2SI NDP.

Figure 11-41i (Non-TB sensing measurement instance (#174, #566)) shows a non-TB sensing measurement instance consisting of a measurement sounding phase and a reporting phase.



Figure 11-41i---A Non-TB sensing measurement instance consisting of a measurement sounding phase and a reporting phase (#174, #566)

The AP shall transmit a Sensing Measurement Report frame corresponding to the sensing measurement results of the SI2SR NDP for either the current non-TB sensing measurement instance (see Figure 11-41x) or for the previous non-TB sensing measurement instance (see Figure 11-41y) consistently throughout all the subsequent non-TB sensing measurement instances associated with the same measurement setup. In the latter case, in the first non-TB sensing measurement instance for a given sensing measurement setup, the AP shall set the Invalid Measurement subfield in the Sensing Measurement Report frame to 1.



Figure 11-41x---Example where the AP reports sensing measurement results corresponding to the current non-TB sensing measurement instance.

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Figure 11-41y--- Example where the AP reports sensing measurement results corresponding to the previous non-TB sensing measurement instance.

***TGbf editor:***

***Make the following changes to the Report Type and Segmentation Control subfield within the Sensing Measurement Report Container field in the Sensing Measurement Report frame***

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Sensing Measurement Report Type | Report Control Present | Measurement Setup ID | Measurement Instance ID | Sensing Transmitter STA ID | Sensing Receiver STA ID | Remaining Report Segments | First Report Segment | Invalid Measurement | Reserved |
| Bits | 3 | 1 | 3 | 6 | 12 | 12 | 5 | 1 | 1 | 4 |

The Invalid Measurement subfield indicates whether the reported measurement result is invalid. An Invalid Measurement field value of 1 indicates that the reported measurement result is invalid. A value of 0 indciates that the reported measurement result is valid.

## SP

Do you support the proposed resolutions to the following CIDs and incorporate the text changes into the latest TGbf draft: 202 315 482 567 633 769 768?

Y/N/A