IEEE P802.11
Wireless LANs

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| CC40 CR for Instance CIDs – Part 2 |
| Date: 2022-11-xx |
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**Abstract**

This contribution presents CR for CIDs 95, 496, 756, 791 and 541, which are related to the order of TF sounding and NDPA sounding.

R0: initial version.

# CID 95, 756, 496, 541

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| --- | --- | --- | --- | --- |
| **CID** | **Subclause** | **Page** | **Comment** | **Proposed change** |
| 496 | 11.21.18.6 | 68.37 | Since the order of TF sounding and NDPA sounding as shown in example 3, example 4, and example 5 is TBD as in Editor's Note, wouldn't it need to specify how the sequences are accommodated with a certain order in order for the STAs to prepare the sounding and reporting efficiently? | Specify how the order of sounding will be as in comment. |
| 541 | 11.21.18.6 | 68.55 | As shown in figure 11-41c, various sounding configurations are considered in the TB sensing measurement. So, it needs to be signalled this configuration information if TB sensing measurement is used. Almost sensing parameters are determined by using the sensing measurement setup phase so that this information can be indicated during the sensing measurement setup phase. | Add the information for the configuration of sensing measurement instance in the sensing measurement setup frame. |
| 95 | 11.21.18.6 | 68.36-40 | Define the order of the TF sounding and NDPA sounding phases. | Define the order as follows: Polling phase, NDPA sounding phase, and TF sounding phase (in this order). This order is preferred because it gives more time to clients to prepare measurement reports. Delete Editor's Note (other TBDs in this note have already been addressed). Also delete Figure 11-41c (no longer necessary) and paragraph in lines 25-34. Invert order of NDPA sounding and TF sounding phases in Figure 11-41d. |
| 756 | 11.21.18.6 | 68.36-40 | Suggest defining the order of TB sounding to be before the NDPA sounding (now is TBD) so that it provides additional parsing time for receiver responder to be ready for immediate reporting when reporting phase begins. | As per comment |

**Proposed resolution**: REVISED. Please incorporate the changes in 11/22-1918r0 under “Modification” for CIDs 95, 756, 496 and 541.

**Discussion**:

CIDs 496 and 541 suggest specifying the order of sounding and CIDs 95 and 756 suggest defining the order of sounding. I agree with the commenters that the order of sounding shall be determined before the sensing measurement instance, if both TF sounding and NDPA sounding are needed. Based on the comments, we may have two possibilities for modification:

1. Only allow a fixed order: NDPA sounding first and then TF sounding
* Reason given: NPDA first allows more time for the sensing receiver to prepare the measurement report.
1. Allow two orders: A certain order needs be specified or determined during the measurement setup.
* Reason given: Knowing the order, the STA can prepare for sounding or reporting accordingly.

To start with, I prefer not to put strong constraints. We could make the order of sounding negotiable between the sensing initiator and the sensing responder. It might be helpful for the unassociated STA (U-STA) to participate in sensing as a sensing responder. If a U-STA only participates in a TB sensing as a sensing transmitter/receiver, it may want to perform the TF/NDPA sounding right after the polling to leave time for other things. And for the sensing responder that participates in both TF and NDPA sounding, it might want to schedule the sounding by a certain order. The bottom line is that the order shall be fixed for a measurement setup.

**Modifications (#95, #756, #496, #541):**

***TGbf Editor: Please delete “The order of TF sounding and NDPA sounding as shown in example 3, example 4, and example 5 is TBD.” in the Editor’s Note from L64 to L65 on P104 in D0.4.***

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**9.4.2.319 Sensing Measurement Parameters element**

***TGbf Editor: Please modify Figure 9-1002ax as follows on P50 in D0.4.***

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | Sensing Transmitter | Sensing Receiver | Sensing Measurement Report Requested | Sensing Measurement Report Type | Measurement Setup Expiry Exponent | Sounding Order | TBD |
| Bits: | 1 | 1 | 1 | 3 | 4 | 1 | TBD |

**Figure 9-1002ax— Sensing Measurement Parameters field format(#224, #255, #587, #837, #902, #488, #7, #470, #509, #51, #175, #568, #569, #95, #756, #496, #541)**

***TGbf Editor: Please add the following text after P50L49 in D0.4.***

If both NDPA sounding phase and TF sounding phase are scheduled in the same TB sensing measurement instance, the Sounding Order subfield is set to 1 to indicate that the AP shall proceed with the NDPA sounding phase first and then the TF sounding phase, and it is set to 0 to indicate that the AP shall proceed with the TF sounding phase first and then the NDPA sounding phase. The default value of the Sounding Order subfield is set to 1. (#95, #756, #496, #541)

NOTE – If at least one non-AP STA that is a sensing transmitter and at least one non-AP STA that is a sensing receiver are assigned to be polled, or if at least one non-AP STA that is a sensing transmitter and a sensing receiver, the presence of NDPA sounding phase and/or TF sounding phase depends on the response results of the polling phase. (#95, #756, #496, #541)

# CID 791

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| --- | --- | --- | --- | --- |
| **CID** | **Subclause** | **Page** | **Comment** | **Proposed change** |
| 791 | 11.21.18.6.2 | 69.61 | Do you mean the sounding phase starts SIFS after the polling phase ? | Assuming the NDPA Sounding phase starts after the polling phase, mention in the first paragraph that "the NDPA Sounding phase, when present, starts SIFS after the Polling phase". Similarly, if the NDPA Sounding follows after the TF sounding phase. |

**Proposed resolution**: REVISED. Please incorporate the changes in 11/22-1918r0 under “Modification” for CID 791.

**Discussion**: I agree with the commenter that the IFS shall be specified for the sounding phase in a TB measurement instance.

**Modifications (#791):**

**11.55.1.5.2.3 NDPA sounding phase**

***TGbf Editor: Please add the following text to P107L29 in D0.4.***

In the NDPA sounding phase, the AP, which is a sensing transmitter, sends an SI2SR NDP to one or more STAs, on which the one or more STAs perform sensing measurement (#123, #309, #862). The NDPA sounding phase shall be present in a TB sensing measurement instance if at least one STA that is a sensing receiver in this NDPA sounding phase and that is not assigned to be polled or has responded in the polling phase(#761). If the NDPA sounding phase is the only sounding phase present in a TB sensing measurement instance, and if the polling phase is present, the NDPA sounding phase shall start a SIFS after the polling phase. If the NDPA sounding phase follows after the TF sounding phase, it shall start a SIFS after the TF sounding phase. (#791)

**1111.55.1.5.2.4 TF sounding phase**

***TGbf Editor: Please add the following text to P107L49 in D0.4.***

In the TF sounding phase, the AP, which is a sensing receiver, solicits NDP transmissions from one or more STAs, on which to perform sensing measurement (#864). The 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(#622, #623, #764). If the TF sounding phase is the only sounding phase present in a TB sensing measurement instance, and if the polling phase is present, the TF sounding phase shall start a SIFS after the polling phase. If the TF sounding phase follows after the NDPA sounding phase, it shall start a SIFS after the NDPA sounding phase. (#791)