IEEE P802.11  
Wireless LANs

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| **CC40 CR of 6 CIDs related to R2R** |
| **Date:** 2023-01-04 |
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Abstract

This submission proposes the resolution for following 6 CID:

* 6, 254, 375, 381, 460, and 486

Revisions:

* Rev 0: Initial version of the document.

Interpretation of a Motion to Adopt

A motion to approve this submission means that the editing instructions and any changed or added material are actioned in the TGbf D0.5 Draft. This introduction is not part of the adopted material.

***Editing instructions formatted like this are intended to be copied into the TGbf D0.5 Draft (i.e. they are instructions to the 802.11 editor on how to merge the text with the baseline documents).***

***TGbf Editor: Editing instructions preceded by “TGbf Editor” are instructions to the TGbf editor to modify existing material in the TGbf draft. As a result of adopting the changes, the TGbf editor will execute the instructions rather than copy them to the TGbf Draft.***

#### *CID 460*

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| **CID** | **Clause** | **PP.LL** | **Comment** | **Proposed Change** | **Resolution** |
| 460 | 3.2 | 0.00 | Add the definition of responder-to-responder (R2R) sensing into Section 3.2. Use "responder-to-responder sensing (R2R) in the main body. | Responder-to-Responder (R2R) Sensing: A sensing method in which a non-AP STA as a responder obtains sensing measurements by transmission from another non-AP STA as a responder. | Rejected.  In the previous discussion, we defined that SR2SR sounding is one phase of the TB sensing measurement instance. And SR2SR operation including the definition is defined by DCN 22/1917r3 in the additional subclause. so, we don't need to define the additional definition for SR2SR. |

Discussion : 22/1917r3

11.55.1.5.2.1 General

TB sensing measurement instance is the trigger-based variant of a sensing measurement instance. It is applicable to scenarios where an AP is the sensing initiator, and one or more non-AP STAs are the sensing responders. It includes one or more of the following phases: Polling phase, NDPA sounding phase, Trigger frame (TF) sounding phase, SR2SR sounding phase, and reporting phase.

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.

The reporting phase of a TB sensing measurement instance has two variants: The basic reporting phase (see 11.55.1.5.2.5 (Reporting phase)), and the threshold-based reporting phase (see 11.55.1.5.2.5.2 (Thresholdbased reporting phase)).

The TB sensing measurement instance initiated by an AP optionally allows a sensing responder to measure an NDP transmitted by another sensing responder, as described in 11.55.1.5.2.x (SR2SR Sounding phase).

11.55.1.5.2.x SR2SR sounding phase

In the SR2SR sounding phase, the AP transmits a Sensing SR2SR Sounding Trigger frame to solicit NDP transmission from one non-AP STA, on which one or more non-AP STAs perform sensing measurement. The SR2SR sounding phase may be present in a TB sensing measurement instance if

* one non-AP STA that is an SR2SR sensing transmitter in this SR2SR sounding phase and that is not assigned to be polled or has responded in the polling phase, and
* at least one non-AP STA that is an SR2SR sensing receiver in this SR2SR sounding phase and that is not assigned to be polled or has responded in the polling phase.

Implementation of SR2SR sounding phase is optional. When supported, the AP shall transmit a Sensing SR2SR Sounding Trigger frame to one non-AP STA that is an SR2SR sensing transmitter and one or more non-AP STAs that are SR2SR sensing receivers, and are not assigned to be polled or have responded in the polling phase of the TB sensing measurement instance to solicit SR2SR NDP transmission. The Sensing SR2SR Sounding Trigger frame shall allocate spatial resources for the SR2SR NDP transmission covering the full bandwidth. The SR2SR NDP may be transmitted with more than one spatial stream. The non-AP STA indicated as an SR2SR sensing transmitter by a Transmitter User Info field in a Sensing SR2SR Sounding Trigger frame shall transmit an SR2SR NDP a SIFS after receiving the Sensing SR2SR Sounding Trigger frame. Any non-AP STA indicated as an SR2SR sensing receiver by a Receiver User Info field in the Sensing SR2SR Sounding Trigger frame shall perform sensing measurement on the SR2SR NDP sent by the SR2SR sensing transmitter.

Note - The AP may be one of the sensing receivers and perform sensing measurement on the SR2SR NDP.

When a PPDU bandwidth is less than or equal to 160 MHz, the format of the SR2SR NDP in the SR2SR sounding phase of a TB sensing measurement instance is an HE Ranging NDP, as described in 27.3.18a.1 (HE Ranging NDP).

In an SR2SR sounding phase, 320 MHz operation is not supported.

#### *CID 375,* 486

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| **CID** | **Clause** | **PP.LL** | **Comment** | **Proposed Change** | **Resolution** |
| 375 | 9.4.2.317 | 33.03 | We need to include parameter(s) to enable R2R sensing during a sensing measurement setup | As in the comment. | Revised  The indication of SR2SR is included in the sensing field of the sensing element and the TB Specific subelement in the sensing measurement parameters element by the DCN 1998r1. So, we don't need to define the additional indication for SR2SR.  TGbf Editor: No further change needs. |
| 486 | 9.4.2.26 | 32.57 | Doesn't the capability of the sensing responder to sensing responder (R2R) sounding as an optional AP initiated sounding procedure need to be included in Extended Capabilities field? We need to clarify if some capability announcement from a STA supporting R2R sounding is required (e.g. reception of NDP from the other non-AP STA responder) and define it if needed. In addition, the spec needs more details on the related procedure(setup, measurement instance..), parameters, etc., for D1.0. | As in comment. | Revised.  The indication of SR2SR is included in the sensing field of the sensing element and the TB Specific subelement in the sensing measurement parameters element by the DCN 1998r1. So, we don't need to define the additional indication for SR2SR.  TGbf Editor: No further change needs. |

Discussion:

In DCN 1998r1

The Sensing field is defined in Figure 9-1002bb (Sensing field format).

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Responders Needed | BW | Max Tx STS ≤ 80 MHz | Max Tx STS = 160 MHz | Max Tx STS = 320 MHz |

Bits: 1 3 3 3 3

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Max Rx STS ≤ 80 MHz | Max Rx STS = 160 MHz | Max Rx STS =320 MHz | Max Tx HE-LTF Repetition | Max Rx HE-LTF Repetition |

Bits: 3 3 3 3 3

|  |  |  |
| --- | --- | --- |
| Max Tx HE-LTF Total | Max Rx HE-LTF Total | Max Rx EHT-LTF Total |

Bits: 2 2 3

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Device Class | Full Bandwidth UL MU-MIMO | Max number of Supported Setups as Responder | MinTIme between measurements | Poll Required | Threshold-based Reporting |

Bits: 1 1 4 23 1 1

|  |  |  |
| --- | --- | --- |
| SR2SR Support | Maximum Number of Rx Antennas | Reserved |

Bits: 1 3 2

Figure 9-1002bb—Sensing field format (#5)

The format of the TB Specific subelement is as shown in Figure 9-1002az (TB Specific subelement format).

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Subelement ID | | Length | AID/USID | Poll Assigned | CSI Variation Threshold | SR2SR | Reserved | Availability Window |
| Bits: | 8 | | 8 | 16 | 1 | 4 | 1(#5) | 2 | 64 |
|  | | * **TB Sensing Specific subelement format (#5)** | | | | | | | |

The SR2SR subfield is set to 1 to indicate that the TB sensing measurement instance includes an SR2SR sounding phase and is set to 0 otherwise (#5).

#### *CID 6*

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| **CID** | **Clause** | **PP.LL** | **Comment** | **Proposed Change** | **Resolution** |
| 6 | 9.4.2.317 | 33.24 | Operational attributes may include roles like 'collaborative sensing recevier' 'SBP initiator' etc, which may also needed to be included in sensing measurement parameters field. | The sensing measurement parameter field may include operational roles for STA such as SBP initiator, SBP responder, collaorative sensing recevier, etc. | Rejected.  We agreed that we don’t need to define the additional role for the SBP procedure. And, the role of the SBP initiator and SBP responder is determined by the setting of the SBP field of the Extended Capabilities element. |

Discussion: It was already described how to be determined the SBP initiator or SBP responder in clause 11.55.2.1 of 11bf D0.4. Please see the below.



#### *CID 254*

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| **CID** | **Clause** | **PP.LL** | **Comment** | **Proposed Change** | **Resolution** |
| 254 | 9.4.2.317 | 33.58 | In the responder to responder sensing measurement initiated by the AP case, the AP may be the sensing receiver and may obtain the measurement report from the responder, in such case the sentence "If the sensing initiator is a sensing receiver, it is reserved" is not correct. | change the sentence as in responder to responder measurement initiated by AP the measurement report type subfield indicates the type of measurement result reported in sensing measurement instance(s) corresponding to the measurement setup ID. | Rejected.  In the previous CC, we agreed to delete the measurement report type subfield in the 11bf spec because we only support the CSI feedback report. And since the Sensing Measurement Report Container field includes the measurement setup ID, measurement instance ID, TX STA ID, and RX STA ID, by using the above information, whether the feedback is SR2SR or not is distinguished. |

P33L58 in D0.1



 

#### *CID 381*

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| **CID** | **Clause** | **PP.LL** | **Comment** | **Proposed Change** | **Resolution** |
| 381 | 11.21.18.4 | 67.03 | For sensing measurement setup, we need normative behavior(s) of 11bf STAs which would operate R2R sensing | As in the comment. | Revised  Based on the DCN 1998r1, related description is added. So, we don’t need to add the additional description for that.  TGbf Editor: No further change needs. |

Discussion:

By the DCN 1998r1, the SR2SR support field and SR2SR field are defined in the sensing measurement parameter fields and sensing field, respectively. And in each field, how to set those fields is described. So, we don’t need to add the additional text for that.