IEEE P802.11
Wireless LANs

|  |
| --- |
| PDT MAC MLO: NSTR blindness additional rules |
| Date: 2021-02-14 |
| Author(s): |
| Name | Affiliation | Address | Phone | email |
| Dibakar Das | Intel |  |  | Dibakar.das@intel.com |
| Laurent Cariou |  |  | Laurent.cariou@intel.com |
| Dmitry Akhmetov |  |  | Dmitry.akhmetov@intel.com |
| Duncan Ho | Qualcomm |  |  | dho@qti.qualcomm.com |
| George Cherian |  |  | gcherian@qti.qualcomm.com |
| Alfred Asterjadhi |  |  |  |
| Ming Gan | Huawei |  |  | ming.gan@huawei.com |
| Yunbo Li | Huawei |  |  | liyunbo@huawei.com |
| Jay Yang | Nokia |  |  | zhijie.yang@nokia-sbell.com |
| Chunyu Hu | Facebook  |  |  | chunyuhu@fb.com |
| Morteza Mehrnoush |  |  | mmehrnoush@fb.com |
| Matt Fischer | Broadcom |  |  |  |

Abstract

This submission proposes additional rules to the Medium synchronization recovery procedure in 0132r3 and resolve the following TBD:

“While the MediumSyncDelay timer is running at a STA, it shall perform CCA and shall not transmit a frame that initiates a TXOP except under TBD conditions.”

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 TGbe Draft. The introduction and the explanation of the proposed changes are not part of the adopted material.

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

**This document proposes spec text contribution for the following highlighted TBD in the following motions that passed in 11be:**

In R1, if during a transmission of a STA (STA-1) of a non-STR non-AP MLD, another STA (STA-2) of the same MLD cannot detect its medium state when required (due to STA-1’s UL transmission interference), STA-2 shall start a MediumSyncDelay timer at the end of STA-1’s transmission, unless the STA-2 ended a transmission at the same time.

* The MediumSyncDelay timer expires after a duration value that is either assigned by AP or a default value in the specification or if at least either of the following events happens:
	+ any received PPDU with a valid MPDU,
	+ a received PPDU whose corresponding RXVECTOR parameter TXOP\_DURATION is not UNSPECIFIED,

whichever happens first.

* STA-2 shall perform CCA until the MediumSyncDelay timer expires. Additional TBD exceptions may be considered.

NOTE – It is TBD whether STA-2 is required to start the MediumSyncDelay timer if the transmission of STA-1 is shorter than TBD duration.

[Motion 150, #SP373, [92] and [273]]

**Proposed spec text:**

***TGbe editor: Modify the following text in 35.3.13.7 Medium synchronization recovery procedure in 132r3 as follows:***

**35.3.13.7 Medium synchronization recovery procedure**

A non-AP STA with a nonzero MediumSyncDelay timer may attempt to obtain a TXOP using EDCA channel access. The non-AP STA that attempts to obtain a TXOP using EDCA channel access shall satisfy the following rules:

* It shall not attempt to initiate more than MSD\_TXOP\_MAX TXOPs.
* It shall transmit an RTS as the first frame of any TXOP attempt.
* It shall use a CCA\_ED threshold that is equal to dot11MSDOFDMEDthreshold.

A non-AP STA shall set MSD\_TXOP\_MAX and dot11MSDOFDMEDthreshold to the values in the MSD\_TXOP\_MAX and MSD OFDM ED Threshold subfields, respectively, contained in the most recently received TBD element received from its associated AP. If no TBD element has been received from its associated AP, the STA shall set MSD\_TXOP\_MAX to 1 and dot11MSDOFDMEDthreshold to -62 dBm. An AP that transmits the TBD element shall set the value of the MSD OFDM ED Threshold subfield to -62dBm or less.

Note- If either the intra-BSS NAV or the inter-BSS NAV is non-zero in a STA when it starts the MediumSyncDelay timer, the STA does not initiate any TXOP or respond to an RTS or MU-RTS frame until both NAVs expire.

If the received signal strength on the STA's operating channel exceeds the ED threshold and no start of a PPDU is detected during the aCCAtime (see 36.3.19.6.3 CCA sensitivity for occupying the primary 20 MHz channel) following the end of the transmission event that caused loss of medium synchronization, it is TBD whether the STA shall defer for EIFS as described in 10.3.2.3.7 (EIFS).

While the MediumSyncDelay timer is running at a STA, the AP to which the STA is associated should transmit a Trigger frame to the STA that solicits an UL PPDU if both of the following conditions are true

* The AP does not have frame exchanges already scheduled with another STA.
* Another AP, that is affiliated to the same AP MLD as this AP, has received a frame from another STA affiliated to the same MLD as the STA which indicates the link identifier of the AP and indicates a request for a Trigger to be transmitted by that AP.

A STA shall not transmit a frame which indicates the link identifier of an AP and an indication of a request for a Trigger to be transmitted by that AP if that AP does not support reception of a frame containing such information.

**References:**