IEEE P802.11  
Wireless LANs

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| LB266 CR for MSD timer reset | | | | |
| Date: 2022-11-09 | | | | |
| Author(s): | | | | |
| Name | Affiliation | Address | Phone | email |
| Greg Geonjung Ko | WILUS Inc. |  |  | greg.ko@wilusgroup.com |
| John (Ju-Hyung) Son |  |  | john.son@wilusgroup.com |
| Sanghyun Kim |  |  | shawn.kim@wilusgroup.com |
| Jin Sam Kwak |  |  | jinsam.kwak@wilusgroup.com |

Abstract

This contribution proposes resolutions for the following CIDs for TGbe LB266:

12743, 13848, 13955

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 TGbe Draft. This introduction is 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).***

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

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **CID** | **Commenter** | **Clause** | **Page** | **Comment** | **Proposed Change** | **Resolution** |
| 12743 | Liuming Lu | 35.3.16.8.1 General | 459.59 | The STAs affiliated with different MLDs can have their respective nonzero MediumSyncDelay timers. For example, when an AP affiliated with an AP MLD can solicit TB PPDUs from multiple MLDs operating on NSTR link pairs, the solicited STAs affiliated with the different MLDs start their MediumSyncDelay timers. In this case, if one of the multiple STAs transmits an RTS frame as the initial frame, all other STAs can reset its timer mistakenly based on the RTS frame, even though there is no response to the RTS frame. | The events which cause the timer to reset to zero need to be clarified. | Revised  Agree with the commenter in principle.  Modified the reset condition to handle the case of receiving an RTS frame.  TGbe editor, please make changes as shown in 11-22/1920r0 tagged as #12743. |
| 13848 | Sanghyun Kim | 35.3.16.8.1 | 459.62 | A non-AP STA should not reset the MediumSyncDelay timer when it receives RTS frame that is transmitted by a STA has non-zero MediumSyncDelay timer. | As in comment. | Revised  Agree with the commenter in principle.  Modified the reset condition to handle the case of receiving an RTS frame.  TGbe editor, please make changes as shown in 11-22/1920r0 tagged as #12743. |
| 13955 | Geonjung Ko | 35.3.16.8.1 | 459.62 | Multiple STAs can have a nonzero MediumSyncDelay timer. For example, when an AP solicits TB PPDUs from multiple MLDs operating on NSTR link pair, the solicited STAs would set its MediumSyncDelay timer. In this case, if one of the multiple STAs transmits an RTS frame as the first frame, all other STAs can reset its timer based on the overheard RTS frame, even though there is no response to the RTS frame. | The timer should not be reset when the received frame is an RTS frame. | Revised  Agree with the commenter in principle.  Modified the reset condition to handle the case of receiving an RTS frame.  TGbe editor, please make changes as shown in 11-22/1920r0 tagged as #12743. |

***TGbe editor: Please note that the baseline is 11be D2.2.***

***TGbe editor: Please make the following changes in subclause 35.3.16.8.1.***

**35.3.16.8 Medium access recovery procedure**

**35.3.16.8.1 General**

A (#12242)non-AP STA affiliated with a non-AP MLD or an NSTR mobile AP MLD that operates on an NSTR link pair (#10850)is considered to have lost medium synchronization when the other STA, which is affiliated with the same MLD and operates on that link pair, transmits a PPDU, except when both STAs ended a transmission at the same time.

A STA that has lost medium synchronization as described above shall start a MediumSyncDelay timer (#10422)and begin counting down from the end of that transmission if that transmission is longer than aMediumSyncThreshold unless its previous MediumSyncDelay timer has not expired. The STA (#11580)may choose not to (re)start the MediumSyncDelay timer if the transmission event is shorter than or equal to aMediumSyncThreshold. The aMediumSyncThreshold is set to 72 µs.

NOTE 1—The value of 72 µs is chosen to cover at least the PPDU lengths of RTS/CTS/ACK frames using non-HT or (#11451)non-HT duplicate PPDU format with (#10133)6 Mb/s data rate, as well as the PPDU lengths of most typical BlockAck frames.

When a non-AP MLD is operating in the EMLSR mode, a (#12242)non-AP STA affiliated with a non-AP MLD that is operating on one of the EMLSR links is considered to have lost medium synchronization if it is not able to perform CCA during frame exchanges that includes the link switch delays between an AP affiliated with an AP MLD and one of the other STAs operating on the other EMLSR links, which are affiliated with the same non-AP MLD. The STA that has lost medium synchronization shall start a MediumSyncDelay timer (#10422)and begin counting down immediately after returning to the listening operation if the duration of the loss of medium synchronization is longer than aMediumSyncThreshold; otherwise, the STA may not start the MediumSyncDelay timer.

NOTE 2—The link switch delays include the delay switching from the listening operation to the frame exchanges and the delay switching from the frame exchanges to the listening operation.

(#11137)A STA shall not start a MediumSyncDelay timer unless the STA is one of the following:

* a non-AP STA affiliated with a non-AP MLD operating on an NSTR link pair or
* a non-AP STA affiliated with a non-AP MLD operating on an EMLSR link or
* an AP affiliated with an NSTR mobile AP MLD operating on the nonprimary link of an NSTR link pair.

The MediumSyncDelay timer is a single timer, shared by all EDCAFs within a STA, whose value is set to dot11MSDTimerDuration. The STA initializes dot11MSDTimerDuration to aPPDUMaxTime defined in Table 36-70 (EHT PHY characteristics). A non-AP STA shall update dot11MSDTimerDuration with the value contained in the (#13867)Medium Synchronization Delay Information field, if present, of the Basic Multi-Link element in the most recent frame received from its associated AP. In addition, the timer resets to zero when any of the following events occur:

* The STA receives a PPDU with a valid MPDU(#12743) that does not contain an RTS frame.
* The STA receives a PPDU whose corresponding RXVECTOR parameter TXOP\_DURATION is not UNSPECIFIED.

(#12743) The STA may reset the MediumSyncDelay timer to zero when the STA receives a PPDU with a valid MPDU that contains an RTS frame from the associated AP not affiliated with an NSTR mobile AP MLD.

If a STA that operates on a NSTR link pair has lost medium synchronization, due to transmission by another STA that is affiliated with the same MLD and operates on that link pair, and its previous MediumSyncDelay timer has not expired, then at the end of that transmission it shall continue the previous MediumSyncDelay timer except that the STA shall update the timer value as described above if that transmission is longer than aMediumSyncThreshold.