**IEEE P802.15**

**Wireless Personal Area Networks**

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| Project | IEEE P802.15 Working Group for Wireless Personal Area Networks (WPANs) |
| Title | Updates to RX enable for non-interleaved MMS  |
| Date Submitted | 10 June 2025 |
| Source | Billy Verso (Qorvo),  | billy.verso at qorvo.com |
| Re: | IEEE P802.15.4ab |
| Abstract | Comment Resolutions for selected comments on the LB213 / P802.15.4ab D02. |
| Purpose | This document provides text changes intended to be part of the final IEEE Std 802.15.4ab (amendment to IEEE Std 802.15.4), as part of resolving selected comments from the consolidated spreadsheet (DCN 15-25-0174) that have been assigned to the author to resolve. |
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| Comments addressed here: |

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# Comment Index # 633

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| **Ind** | **pg** | **clause** | **line** | **Comment** | **Proposed Change** |
| 633(Billy) | 20 | 8.2.7.3 | 6.5 | For non-interleaved MMS ranging, the MLME-RX-ENABLE.request needs to include the start time in ranging counter units and the clock offset information to enable the blind RX of the fragments that are invisible until  | Update the MLME-RX-ENABLE.request primitive accordingly. |

**Discussion:**

In MMS UWB ranging if we want to support reception of an MMS UWB packet (i.e., without interleaved transmissions) then we need to use the MLME-RX-ENABLE.request primitive, and for NBA we need to supply the “assisting” information gleaned from the poll or response packet that precedes the MMS UWB packet.

As per the comment the MLME-RX-ENABLE.request primitive needs modification to include the parameters to specify the clock offset information and to specify the starting time accurately.

Reviewing the MLME-RX-ENABLE primitive, there is an RxInstanceDescriptor structured parameter that includes an RxOnTime value and other parameters, (p123 of IEEE Std 802.15.4-2024). This is an appropriate place to incorporate the required changes/additions.

Also, we need an additional status in the confirm primitive, to cover the case where non-interleaved reception isn’t supported.

**Proposed Disposition:** Revised.

**Disposition Detail:** Modify the MLME-RX-ENABLE primitive text as shown below:

***Change the RxOnTime parameter in Table 8-14 “Elements of the RxInstanceDescriptor” as shown:***

| **Name** | **Type** | **Valid Range** | **Description** |
| --- | --- | --- | --- |
| RxOnTime | Unsigned  | 0x00000000–0xffffffff | Specifies the time when the receiver is enabled. In PAN using superframe structure this parameter is specified as the number of symbols measured from the start of the superframe. If the issuing device is the PAN coordinator, the term *superframe* refers to its own superframe. Otherwise, the term refers to the superframe of the coordinator through which the issuing device is associated.For ERDEV, this parameter is specified in RSTUs, as defined in 10.29.1.5.For MMS UWB packet reception, this parameter specifies the expected arrival time of the first fragment in the units defined in 10.29.1.4.For PANs not using superframe structure this is specified as timestamp symbols as defined in 6.5.3.For PANs not using superframe structure, if the RxOnTime is 0x000000 then the receiver is enabled immediately. |

***Insert new parameters MmsRxClockTrackInterval and MmsRxClockTrackOffset into Table 8-14, as shown:***

| **Name** | **Type** | **Valid Range** | **Description** |
| --- | --- | --- | --- |
| MmsRxClockTrackInterval | Unsigned Integer | 0x00000000–0xffffffff | For MMS UWB packet reception this parameter along with the MmsRxClockTrackOffset specifies the clock offset for the fragment receptions.The MmsRxClockTrackInterval represents the duration over which the MmsRxClockTrackOffset was measured during the reception of the packet used to estimate the remote device's clock offset, as per the definition in 10.29.1.6.3. |
| MmsRxClockTrackOffset | Integer | 0x00000000–0xffffffff | For MMS UWB packet reception this parameter along with the MmsRxClockTrackInterval specifies the clock offset for the fragment receptions.The MmsRxClockTrackOffset gives a count of the time units slipped or advanced by the radio tracking system over the MmsRxClockTrackInterval used to estimate the remote device's clock offset, as per the definition in 10.29.1.6.2. |

***Modify the Status parameter in Table 8-16 “MLME-RX-ENABLE.confirm parameters” as shown (only changed lines shown):***

| **Name** | **Type** | **Valid Range** | **Description** |
| --- | --- | --- | --- |
| Status | Enumeration | SUCCESS, PAST\_TIME, ON\_TIME\_TOO\_LONG,UNSUPPORTED\_MODE, RANGING\_NOT\_SUPPORTED.Also see 8.2.2. | The result of the request to enable or disable the receiver. |

***Modify the sixth paragraph of 8.2.7.4 “MLME-RX-ENABLE.confirm” as shown:***

A Status value of RANGING\_NOT\_SUPPORTED is returned if an MLME-RX-ENABLE.request primitive is issued with a RangingControl parameter value of RANGING\_ON to a non-RDEV. A Status value of UNSUPPORTED\_MODE is returned if the configured packet type or mode is not supported.

*<END>*