**IEEE P802.15**

**Wireless Personal Area Networks**

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| Project | IEEE P802.15 Working Group for Wireless Personal Area Networks (WPANs) |
| Title | **Comment resolution – 31, 40, (187)** |
| Date Submitted | Nov 14th, 2024 |
| Sources | Riku Pirhonen (NXP) |
| Abstract | Comment resolution for 31, 40, 187 |
| Purpose | Propose resolutions to comments received on IEEE P802.15.4ab/D01, June 2024. |
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# Summary of comments

The following comments are offered a resolution in this document:

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| **Name** | **Index #** | **Page** | **Sub-clause** | **Line #** | **Comment** | **Proposed Change** |
| Mickael Maman | 31 | 55 | 10.38.1 | 21 | In UWB driven UWB MMS, a value of 1 ms shall be supported for time interval A. Does it means that UWB packet for Initiator and responder are interleaved in 1ms? | two options: clarify interleaved UWB SP0 packet or define two values for A as done in NBA UWB MMS. In the first case, new values for macMmsRcpPollNSlots, macMmsRcpRespNSlots and optionnaly macMms1stReportNSlots in Table 20 should be defined. |
| Mickael Maman | 40 | 67 | 10.38.4 | 21 | Clarify if the UWB MMS control phase is defined for both PHYs (UWB and OQPSK) and if they are using the same packet format (POLL and RESP compact frame) | as in comment |
| Wenzheng Li | 187 | 68 | 10.38.5 | 23 | In this sub-clause, the ranging phase only for NBA UWB MMS is stated. For the UWB driven UWB MMS, the initial exchanged MMS fragment shall be SYNC+SFD. | The UWB driven UWB MMS with initial SYNC+SFD fragments exchange shall be added to be described in this sub-clause |

Resolution proposals

## Comment 31

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| **Name** | **Index #** | **Page** | **Sub-clause** | **Line #** | **Comment** | **Proposed Change** |
| Mickael Maman | 31 | 55 | 10.38.1 | 21 | In UWB driven UWB MMS, a value of 1 ms shall be supported for time interval A. Does it means that UWB packet for Initiator and responder are interleaved in 1ms? | two options: clarify interleaved UWB SP0 packet or define two values for A as done in NBA UWB MMS. In the first case, new values for macMmsRcpPollNSlots, macMmsRcpRespNSlots and optionnaly macMms1stReportNSlots in Table 20 should be defined. |

The supported value for (A) is 1 ms and with that value control packets are interleaved within 1 ms with a 500 μs offset, which is aligned with the MMS packet interleaving. To have (A) value equal to 1 ms, *macMmsRcpPollNSlots* and *macMmsRcpRespNSlots* are both set to have value 1. See figure 35 for definition for *macMmsRcpPollNSlots* and *macMmsRcpRespNSlots*.

If longer separation between start of control and ranging packet is desired, value 2 for *macMmsRcpPollNSlots* and *macMmsRcpRespNSlots* results to (A) to be 2 ms for initiator and 1.5 ms for responder like in the NBA case, because MMS packet interleaving remains as one slot (500 μs). If *macMmsRcpPollNSlots* and *macMmsRcpRespNSlots* have value 0, the SP0 packets are not sent at all.

**Resolution:** Add the text shown in red starting on page 55, line 21

In the figures, the time interval, A, is the time interval between the start of the packet in the control phase and the start of the MMS packet in the ranging phase as described in 10.38.4 and 10.38.5 respectively. For the NBA UWB MMS case, of Figure 23, values of ~~1.5 ms and 2 ms~~ 2 ms and 1.5 ms shall be supported for this time interval and *macMmsRcpPollNSlots* and *macMmsRcpRespNSlots* are set to value 2 (see Figure 35). In the UWB driven case of Figure 24, the HRP UWB PHY MMS packet includes the initial SYNC and SFD fragment as specified in 16.2.11.~~, and a~~ A value of 1 ms shall be supported for time interval A between the start of a UWB data packet and start of the MMS packet by setting *macMmsRcpPollNSlots* and *macMmsRcpRespNSlots* values to 1, which will result in the same 600 RSTU (500 μs) offset between data packets as the MMS fragments.

## Comment 40

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| **Name** | **Index #** | **Page** | **Sub-clause** | **Line #** | **Comment** | **Proposed Change** |
| Mickael Maman | 40 | 67 | 10.38.4 | 21 | Clarify if the UWB MMS control phase is defined for both PHYs (UWB and OQPSK) and if they are using the same packet format (POLL and RESP compact frame) | as in comment |

Poll compact frame and response compact frame can use either NB or UWB data packets. The payload is the same compact frame. In case there is no need to send payload, the control frame can be skipped in UWB driven mode, as the UWB PHY MMS packet has the SYNC and SFD for signal frequency and timing acquisition, and this is indicated by setting the report period length to 0. Control and report phase modulation can be clarified by adding a reference to the Management PHY Configuration field.

**Resolution:** Add the text shown in red on page 67, line 24

The UWB MMS control phase begins the UWB MMS ranging exchange and includes (macMmsRcpPollNSlots + macMmsRcpRespNSlots) ranging slots for peer-to-peer ranging. Control phase modulation is defined by the Management PHY Configuration field, see 10.38.9.3.17.

**Resolution:** Add the text shown in red on page 69, line 21

UWB MMS ranging reports may be transferred during the optional report phase. The report phase is configured as part of UWB MMS ranging session configuration as described in 10.38.3.7. If it is enabled, the report phase starts when the ranging phase ends. The macMmsReportSender attribute enables reporting and selects whether the initiator, the responder or both send report packets. Report phase modulation is defined by the Management PHY Configuration field, see 10.38.9.3.17.

## Comment 187

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| Wenzheng Li | 187 | 68 | 10.38.5 | 23 | In this sub-clause, the ranging phase only for NBA UWB MMS is stated. For the UWB driven UWB MMS, the initial exchanged MMS fragment shall be SYNC+SFD. | The UWB driven UWB MMS with initial SYNC+SFD fragments exchange shall be added to be described in this sub-clause |

**Resolution:** See DCN 15-24-0470-01-04ab