**IEEE P802.15**

**Wireless Personal Area Networks**

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| Project | IEEE P802.15 Working Group for Wireless Personal Area Networks (WPANs) |
| Title | Proposed Resolutions for CIDs:  93, 174, 279, 664, 884, 885, 962, 964, 1376, 1381 |
| Date Submitted | September 2024 |
| Sources | Xiliang Luo (Apple) |
| Re: |  |
| Abstract |  |
| Purpose | To propose resolutions to comments for “*P802.15.4ab™/D01 Draft Standard for Low-Rate Wireless Networks*” |
| Notice | This document does not represent the agreed views of the IEEE 802.15 Working Group or IEEE 802.15.4ab Task Group. It represents only the views of the participants listed in the “Sources” field above. It is offered as a basis for discussion and is not binding on the contributing individuals. The material in this document is subject to change in form and content after further study. The contributors reserve the right to add, amend or withdraw material contained herein. |

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# CID #93 (Rejected)

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| **Name** | **Idx #** | **Cat.** | **Pg.** | **Sub-clause** | **Line #** | **Comment** | **Proposed Change** |
| Mickael Maman | 93 | Technical | 192 | 16.2.11.1 | 14 | Where the MMS packet consists of both RSF and RIF fragments, the time between the start of the last RSF and the start of first RIF shall be at least two milliseconds. | as in comment |

**Comment:**

The time spacing between the last RSF and the first RIF shall be 2 ms exactly. The original text in D1 spec is correct.

# CID #174 (Revised)

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| **Name** | **Idx #** | **Cat.** | **Pg.** | **Sub-clause** | **Line #** | **Comment** | **Proposed Change** |
| Bin Qian | 174 | Technical | 126 | 10.38.11.2 | 15 | What does it mean of the last sentence | As in the comment |

**Resolution:**

Revise the sentence in line 15, page 126

from:

“MMRS Config Set #37 has zero mean.”

to:

“MMRS Code Index #37 from Table 63 has zero mean.”

# CID #279 (Rejected, more discussions)

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| **Name** | **Idx #** | **Cat.** | **Pg.** | **Sub-clause** | **Line #** | **Comment** | **Proposed Change** |
| Jarek Niewczas | 279 | Technical | 127 | 10.38.11.4 | 12 | the purpose of variable gap length was to reduce interference. Using the same gap length for all mandatory configs contradicts that purpose. remove column "MMRS config" | Remove "MMRS Config" columns from Table 23, and add below the  statement: "For the Mixed MMS configurations of Table 23, the device  shall support MMRS Config Set numbers 21 to 49 as given in  Table 16-9. " |

**Discussions:**

The purpose of the parameter sets listed in Table 23 are for inter-op. Accordingly, we have agreed to keep it at minimum size. Otherwise, the combinations will grow exponentially. For interference reduction and operating performance, devices should select different MMRS code sequences from Table 63 and apply different gap sizes.

# CID #664 (Revised)

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| **Name** | **Idx #** | **Cat.** | **Pg.** | **Sub-clause** | **Line #** | **Comment** | **Proposed Change** |
| Tero Kivinen | 664 | Technical | 125 | 10.38.10.1 | 1 | The macMmsRpDuration max value is wrong. | It is 12 bit field thus max value is 4095, not 4096. Change 4096 to 4095. |

**Resolution:**

Revise the range of *macMmsRpDuration* to “0-4095”.

# CID #884 (Revised)

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| **Name** | **Idx #** | **Cat.** | **Pg.** | **Sub-clause** | **Line #** | **Comment** | **Proposed Change** |
| Carl Murray | 884 | Technical | 127 | 10.38.11.3 | 2 | Ambiguous statement "These combine a larger gap size with a smaller MSR."  Larger than what, smaller than what? Note that for some of the specified configurations the MSR is larger than the gap size. | Remove statement |

**Resolution:**

Remove the following sentence in line 2, page 127:

“~~These combine a larger gap size with a smaller MSR~~.”

# CID #885 (Rejected, more discussions)

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| **Name** | **Idx #** | **Cat.** | **Pg.** | **Sub-clause** | **Line #** | **Comment** | **Proposed Change** |
| Carl Murray | 885 | Technical | 127 | 10.38.11.4 | 12 | The mandatory configurations given in Table 23 are very limited. For example they only use one MMRS Config Set #. Historically mandatory parameters are the only parameters that multiple vendors can rely on to interoperate. For example the mandatory set all use the same gap size but variable gap size is what gives interference protection. | Expand the number of mixed MMS configuration sets to include a broader range of configurations sets from Table 21. |

**Discussions:**

As pointed out, the purpose of the parameter sets listed in Table 23 are for inter-op. Accordingly, we have agreed to keep it at minimum size. Otherwise, the combinations will grow exponentially. For interference reduction and best operating performance, devices should utilize different MMRS code sequences from Table 63 and apply different gap sizes.

# CID #962 (Revised)

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| **Name** | **Idx #** | **Cat.** | **Pg.** | **Sub-clause** | **Line #** | **Comment** | **Proposed Change** |
| Riku Pirhonen | 962 | Technical | 192 | 16.2.11.1 | 32 | Add word typically to reflect that also non-interleaved packets could be used in case of proposed non-interleaved mode. | … the fragment transmissions of the transmitted MMS packets are typically interleaved … |

**Resolution:**

Revise the sentence in line 31-32, page 192

from:

“For two-way ranging (TWR) with MMS packets, the fragment transmissions of the transmitted MMS packet are interleaved with fragment receptions of the received MMS response packet.”

to:

“For two-way ranging (TWR) with MMS packets, the fragment transmissions of the transmitted MMS packet are typically interleaved with fragment receptions of the received MMS response packet.”

# CID #964 (Rejected, more discussions)

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| **Name** | **Idx #** | **Cat.** | **Pg.** | **Sub-clause** | **Line #** | **Comment** | **Proposed Change** |
| Riku Pirhonen | 964 | Technical | 192 | 16.2.11.2 | 23 | In UWB-driven operation RSF (X) length is given as 1 to 8. To align with the NBA mode, RSF could take values up to 16. | RSF only MMS packets, i.e., where Y=0 and X ∈ {1, 2, 4, 8, 16}. |

**Discussions:**

In UWB-driven operation, the overall performance is limited by the initial sync performance. Unless the whole 4ab group agrees to change the PHY at this late stage, we would recommend keeping the original design here.

# CID #1376 (Revised)

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| **Name** | **Idx #** | **Cat.** | **Pg.** | **Sub-clause** | **Line #** | **Comment** | **Proposed Change** |
| Pooria Pakrooh | 1376 | Technical | 127 | 10.38.11.4 | 8 | Change "mandatory set of configs for UWB MMS" to "mandatory set of configs for NBA UWB MMS" | Change "mandatory set of configs for UWB MMS" to "mandatory set of configs for NBA UWB MMS" |

**Resolution:**

Revise the sentence in line 8, page 127

“Table 23 provides a mandatory set of configurations for UWB MMS packets …”

to:

“Table 23 provides a mandatory set of configurations for NBA UWB MMS packets …”

# CID #1381 (Revised)

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| **Name** | **Idx #** | **Cat.** | **Pg.** | **Sub-clause** | **Line #** | **Comment** | **Proposed Change** |
| Pooria Pakrooh | 1381 | Technical | 192 | 16.2.11.1 | 4 | Figure 198 and text below it are confusing. SYNC/SFD are part of UWB driven packet, not NBA packet. | Specify that " SYNC/SFD are part of UWB driven packet, not NBA packet. |

**Resolution:**

Revise the sentence in line 4, page 192

“… a fragment consisting of SYNC and SFD defined in16.2.6, …”

to:

“… a fragment consisting of SYNC and SFD defined in 16.2.6 in the case of UWB-driven UWB MMS operation, …”