**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:  279, 885, 964, 1381 |
| Date Submitted | October 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*” |
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# CID #279, 885 (Revised)

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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. " |
| 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. |

**Resolution:**

No changes to Table 23. Revise the sentences in line 4-5, page 125, as follows

“To facilitate interworking and reduced testing, a subset of allowed configurations is specified as a mandatory operating parameter set that shall be supported by compliant devices. A set of combinations of MMRS code index and gap size is recommended in Table 21. In the case of NBA UWB MMS, Table 22 lists the mandatory configurations for RSF-only operations and Table 23 lists the mandatory configurations for mixed MMS operations with both RSF and RIF. In the case of UWB Driven MMS, the mandatory parameter sets are given in Table 24.

Although only a subset of the MMRS configurations in Table 21 is utilized in Table 22 and Table 23 to reduce the burden of testing, it should be noted that system performance in the presence of interference would be improved when different MMRS configurations from Table 21 and different MMRS code sequences from Table 63 are employed efficiently.”

# CID #964 (Revised)

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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}. |

**Resolution:**

Revise the sentences in lines 15-25, page 192

from:

“Where X and Y are the number of RSF and RIF fragments respectively in the MMS UWB packet, the following are the combinations that should be supported by the HRP-ARDEV in the case of NBA UWB MMS operations:

⎯ RSF only MMS packets, i.e., where Y=0 and X ∈ {1, 2, 4, 8, 16}.

⎯ RIF only MMS packets, i.e., where X=0 and Y ∈ {1, 2, 4, 8}.

⎯ Mixed RSF/RIF packets, i.e., where X ∈ {1, 2, 4, 8}, Y ∈ {1, 2, 4, 8}.

In the case of UWB-driven UWB MMS operations, the following are the combinations that should be supported by the HRP-ARDEV:

⎯ RSF only MMS packets, i.e., where Y=0 and X ∈ {1, 2, 4, 8}.

⎯ RIF only MMS packets, i.e., where X=0 and Y ∈ {1, 2, 4, 8}.

⎯ Mixed RSF/RIF packets, i.e., where X ∈ {1, 2, 4, 8}, Y ∈ {1, 2, 4, 8}.”

to:

“Where X and Y are the number of RSF and RIF fragments respectively in the MMS UWB packet, the following are the combinations that should be supported by the HRP-ARDEV either in the case of NBA UWB MMS operations or in the case of UWB-driven UWB MMS operations:

⎯ RSF only MMS packets, i.e., where Y=0 and X ∈ {1, 2, 4, 8, 16}.

⎯ RIF only MMS packets, i.e., where X=0 and Y ∈ {1, 2, 4, 8}.

⎯ Mixed RSF/RIF packets, i.e., where X ∈ {1, 2, 4, 8}, Y ∈ {1, 2, 4, 8}.”

# 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 sentences in lines 3-5, page 192

from:

“The MMS UWB packet consists of multiple fragments which are classified intro three types: a fragment consisting of SYNC and SFD defined in 16.2.6, ranging sequence fragments (RSF) defined in 16.2.11.2 and ranging integrity fragments (RIF) defined in 16.2.11.3.”

to:

“Each fragment within an UWB MMS ranging packet falls into one of the following three types: a fragment consisting of SYNC and SFD defined in 16.2.6, ranging sequence fragments (RSF) defined in 16.2.11.2 and ranging integrity fragments (RIF) defined in 16.2.11.3. Figure 23 in 10.38.1 depicts NBA UWB MMS ranging transmission. Figure 24 in 10.38.1 depicts UWB driven UWB MMS ranging transmission.”