**IEEE P802.15**

**Wireless Specialty Networks**

|  |  |  |
| --- | --- | --- |
| Project | IEEE P802.15 Working Group for Wireless Specialty Networks (WSNs) | |
| Title | **Remaining items to address for the UWB PHY** | |
| Date Submitted | February 20th, 2023 | |
| Source | Marco Hernandez1,2, Ryuji Kohno1,3, Takumi Kobayashi1,3, Minsoo Kim1, Daisuke Anzai4 | 1YRP-IAI, Japan, 2CWC Oulu Univ. Finland, 3YNU, Japan, 4Nagoya I.T., Japan |
| Abstract | Call for Proposals | |
| Purpose | Announce Call for Proposals to develop the IEEE 802.15.6ma standard specification. | |
| Notice | This document has been prepared to assist the IEEE P802.15.6ma. It is offered as a basis for discussion and is not binding on the contributing individual(s) or organization(s). The material in this document is subject to change in form and content after further study. The contributor(s) reserve(s) the right to add, amend or withdraw material contained herein. | |
| Release | The contributor acknowledges and accepts that this contribution becomes the property of IEEE and may be made publicly available by P802.15.6ma. | |

## 

The remaining items to address for the 15.6ma revision UWB PHY are as follows:

**1. Harmonization (4ab) of PSDU construction**

|  |  |
| --- | --- |
| 15.6 | Scrambler + FEC + Interleaver + UWB symbol-modulation |
|  |  |
| 15.6ma | Scrambler + **FEC** + Interleaver + *External FEC* + **UWB symbol-modulation** |
| 15.6ma | Scrambler + HARQ + **UWB symbol-modulation** |

**Bold:** compatible with 4ab.

**TBD:** External FEC. Check: Interleaver.

**2. Harmonization (4ab) of SHR**

|  |  |
| --- | --- |
| 15.6 | Preamble sequences (Kasami) + SFD |
|  |  |
| 15.6ma | ? |

**TBD:** compatibility with 4ab preamble sequences. Important for awareness of 4ab transmissions.

**3. PHR**

|  |  |
| --- | --- |
| 15.6 | PHR frame + HCS + FEC (Shortened BCH parity bits) |
|  |  |
| 15.6ma | New PHR frame + HCS + ? |

**TBD:** FEC.

**4. Potential deprecation**

|  |  |
| --- | --- |
| Differentially encoded PSK modulation |  |
| Type II HARQ |  |
| FM-UWB |  |
| Pulse shapes | Only the spectral mask requires specification. Pulse shapes are implementation dependent. |