**IEEE P802.15**

**Wireless Personal Area Networks**

|  |  |
| --- | --- |
| Project | IEEE P802.15 Working Group for Wireless Personal Area Networks (WPANs) |
| Title | Proposed Resolutions for UWB HRP PHY Comments:  274 and 275 |
| Date Submitted | May 2024 |
| Sources | Vinod Kristem, Xiliang Luo (Apple) |
| Re: |  |
| Abstract |  |
| Purpose | To propose resolutions to comments for “*P802.15.4ab™/Draft (pre-ballot) C 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. |

# CID #274

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Name** | **Idx #** | **Cat.** | **Pg.** | **Sub-clause** | **Line #** | **Comment** | **Proposed Change** |
| Vinod Kristem | 274 | Technical | 157 | 16.2.7.4.1 | 20 | The draft text reads "Support for the dynamic data mode PHR is mandatory for devices that support either the LDPC coder specified in 16.3.3.3.1 or the 124.8 Mb/s modulation specified in 16.3.4.2.1."  This is no longer needed as the draft added HRP-LLDDEV, for which the dynamic data mode PHR is mandatory. Also, suggest to explicitly indicate that dynamic data mode PHR is optional for HRP-EMDEV, to be aligned with the consensus reached on the device categories, as captured in the DCN 15-23-0308-03-04ab-4ab-device-s-and-feature-sets. | Remove the sentence "Support for the dynamic data mode PHR is mandatory for devices that support either the LDPC coder specified in 16.3.3.3.1 or the 124.8 Mb/s modulation specified in 16.3.4.2.1." Add the sentence "Support for the dynamic data mode PHR is optional for HRP-EMDEV." |

**Discussion:**

Agree with the comment in principle. Dynamic data mode PHR is manadatory only if the HRP-EMDEV operates as HRP-LLDDEV. This can be clarified in clause 16.2.7.3.

As per the spec, dynamic data mode PHR is the only in-band signaling mechanism to indicate the LDPC encoding, and so it is mandatory to support the dynamic data mode PHR, if the device supports LDPC. However, dyamic data mode PHR shoud not be tied to 124.8 Mb/s modulation, as this modulation can be supported by 4z PHR as well.

**Disposition Status: Revised**

**Proposed Resolution:**

Update the Draft-C spec as suggested below:

**16.2.7.3 PHR field for HRP-ERDEV in HPRF mode**

***Insert the new paragraph at the end of 16.2.7.3 as follows:***

The HRP-SDEV shall use the PHR format described in this subclause encoded using the K=7 convolutional code and send using the data modulation described in 16.3.4.

If the HRP-EMDEV is operating ~~in~~ ~~dynamic data mode~~ as HRP-LLDDEV it shall use the PHR format described in 16.2.7.4, otherwise the HRP-EMDEV shall use the PHR format described in this subclause encoded using the K=7 convolution code and send using the data modulation described in 16.3.4.

**16.2.7.4 PHR field for dynamic data mode**

# 16.2.7.4.1 Overview

The HRP-LLDDEV shall support the dynamic data mode PHR for packet formats without STS or SENS sequences.

The dynamic data mode PHR shall consist of PHR1 and PHR2 separated by a silent interval gap as shown in Figure 173. PHR1 indicates the data rate and coding for the PSDU and PHR2 as described in 16.2.7.4.2. PHR2 indicates the PSDU payload length and other parameters as described in 16.2.7.4.3. The gap between PHR1 and PHR2 shall be 512 chips, (i.e., approx. 1 µs).

Support for the dynamic data mode PHR is mandatory for devices that support ~~either~~ the LDPC coder specified in 16.3.3.3.1 ~~or the 124.8 Mb/s modulation specified in 16.3.4.2.1~~.

# CID #275

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Name** | **Idx #** | **Cat.** | **Pg.** | **Sub-clause** | **Line #** | **Comment** | **Proposed Change** |
| Vinod Kristem | 275 | Technical | 163 | 16.3.3.3 | 5 | Use 'optional dynamic data mode' to clarify that this mode is optional for HRP-EMDEV. | Update the text as follows: "The HRP-EMDEV shall employ the K = 7 convolutional code for the PHR, or for PHR2 in its optional dynamic data mode, and shall also use this convolutional code for the PHY payload field unless the optional low-density parity-check LDPC encoder ..." |

**Discussion:**

The proposed resolution for CID 274 clarifies that the dynamic data mode PHR is manadatory only if the HRP-EMDEV operates as HRP-LLDDEV. Hence no further change is required in the text.

**Disposition Status: Rejected**