Project: IEEE P802.15 Working Group for Wireless Personal Area Networks (WPANs)

Submission Title: [SUN OFDM PHY PHR]

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Source: [Kunal Shah, Henk De Ruijter] Company [Itron Inc., Silicon Labs]

Address []

Voice], E-Mail:[kunal.shah@itron.com, Hendricus.DeRuijter@silabs.com]

Re: [SUN OFDM PHY PHR]

Abstract: [Problem with SUN OFDM PHY PHR and Resolution]

Purpose: [To explain an issue]

Issue identified in SUN OFDM

- The current description for SUN OFDM PHY PHR states,

The PHR occupies symbols for each OFDM options as described in Table 20-9, for phyOfdmInterleaving PIB attribute. The PHR shall be transmitted using the lowest supported MCS level, as described in Table 20-10, for the option being used, except for OFDM option 3 and OFDM Option 4, the PHR shall be transmitted using MCS1 and MCS2 respectively. It is sent to the convolutional encoder starting from the leftmost bit in Figure 20-5 to the rightmost bit.

- The above description mandates using MCS1 and MCS2 for option 3 and 4, respectively based on the selected MCS for each OFDM options

- The intent is to use MCS1 and MCS2 for option 3 and 4 only when higher than MCS1 and MCS2 is being used respectively within the defined OFDM option

- However the statement can intend to be mandating the use of MCS1 and MCS2 for OFDM options 3 and 4 respectively, even for MCS levels lower than 1 and 2

Issue identified in SUN OFDM

Table 20-9—PHYR Symbols for SUN OFDM PHY options

OFDM Option	MCS Level	phyOfdmInterleaving	PHR Symbols
1	0–6	0	3
2	0–6	0	6
3	1–6	0	6
	0	0	12
4	2–6	0	6
	0–1	0	24
1	0–6	1	4
2	0–6	1	8
3	1–6	1	6
	0	1	12
4	2–6	1	6
	0–1	1	24

- Change is required to update the technical content of the PHR.

Proposed Change

- Updating a language to simplify the statement to include the PHR symbols use of MCS1 and MCS2 for OFDM options 3 and 4 respectively, only when the packet is transmitted using MCS1 and MCS2 or higher for options 3 and 4 respectively

Old Text:

The PHR occupies symbols for each OFDM options as described in Table 20-9, for phyOfdmInterleaving PIB attribute. The PHR shall be transmitted using the lowest supported MCS level, as described in Table 20-10, for the option being used, except for OFDM option 3 and OFDM Option 4, the PHR shall be transmitted using MCS1 and MCS2 respectively. It is sent to the convolutional encoder starting from the leftmost bit in Figure 20-5 to the rightmost bit.

New Text:

The PHR occupies symbols for each OFDM options as described in Table 20-9, for phyOfdmInterleaving PIB attribute. The PHR shall be transmitted using the lowest supported MCS level, as described in Table 20-10, for the option being used, except for OFDM option 3 and OFDM Option 4, the PHR shall be transmitted using MCS1 and MCS2 respectively, when the packets are transmitted with MCS1 or higher for OFDM option 3 and MCS 2 or higher for OFDM Option 4 is used. It is sent to the convolutional encoder starting from the leftmost bit in Figure 20-5 to the rightmost bit.

- This will clarify the technical error in the Standard and also would make the backward compatible with 802.15.4-2015 base standard

Proposal

- Do corrigendum draft on the updated technical change as part of the Standard