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

Submission Title: Comment Resolution related to Rate Switch, CID-7049

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Abstract: Comment Resolution.

Purpose: Comment Resolution related to Rate Switch, for CID 7049, 7066, 7125 and 7143

CID 7066:

Comment:

23.3 does not mention the received Rate Switch bit in the PHY header.

Proposed change:

The PIB attribute "phyRsGfskRateSwitchEnabled" serves no useful purpose. The MAC decides to use or not use rate switch and the next higher layer doesn't care.

Resolution:

Accepted.

CID 7049:

Comment:

23.3 does not mention the received Rate Switch bit in the PHY header.

Proposed change:

Describe what behavior is expected of the receiver, for each of the four possibilities resulting from the received Rate Switch bit being set or cleared, and the phyRsGfskRateSwitchEnabled PHY PIB attribute being TRUE or FALSE. (This description should be in 23.3.)

Resolution:

Revised: Move normative text to 23.3. See slide 5.

CID 7143:

Comment:

"The Rate Switch may be enabled from a higher layer using the
phyRsGfskRateSwitchEnabled PHY PIB attribute; for example, when the Energy
Detect level is crossing a threshold." Two problems: (1) To what Energy Detection
does this refer? This comes out of the blue. (2) Since it's an energy detection
measurement, no demodulation occurs, so the measuring device does not know if it
is measuring signal, noise, or interference. If it's measuring a high signal level,
perhaps a mode switch to a high rate would be suitable, but if it's measuring a high
noise or high interference level, such a switch could be disastrous, resulting in
packet loss. This is a poor example, and should be deleted.

Proposed change:

Delete this sentence. Change the first sentence in the paragraph (line 18) to read, "Rate
Switch is optional, and is enabled by setting the phyRsGfskRateSwitchEnabled PHY
PIB attribute to TRUE."

Resolution:

Revised: PHY PIB attribute "phyRsGfskRateSwitchEnabled " is deleted per CID
7066. Revised text is shown on slide 5.

- ## On page 5, line 9 to 13:

The Rate Switch field in the RS-GFSK feature field shall be set to one if rate switch mode, as described in 23.3, is supported and shall be set to zero otherwise. ~~If the Rate Switch field is set to one, a 4-GFSK MCS from Table 99 is supported for each of the supported MCS with modulation index 0.72 as listed in Table 98. This means that the device shall be responsive to both states of the received Rate Switch bit in the PHY header as described in 23.3. It also means that the device shall be capable of transmitting a Rate Switch as described in 23.3.~~

- ## The red text above will be moved to 23.3, see complete 23.3 below:

23.3 Rate switch RS-GFSK

The Rate Switch field in the PHR shall be set to one when enabled and shall be set to zero otherwise. Enabling Rate Switch is optional. When Rate Switch is enabled, the SHR and the PHR shall be transmitted in any 2-GFSK MCS with modulation index 0.9 and the PSDU shall be transmitted using the same symbol rate as is used during SHR and PHR, employing a 4-GFSK Operating Mode with modulation index 0.3. When Rate Switch is disabled then a single MCS is used during the transmission of the PPDU. The capability of receiving and transmitting frames with Rate Switch enabled may be communicated by setting the Rate Switch field in the RS-GFSK Device Capabilities IE to one. This means that the device shall be responsive to both states of the received Rate Switch bit in the PHY header. It also means that the device shall be capable of transmitting frames with Rate Switch enabled and disabled.

CID 7125:

Comment:

Tables 98 and 99 do not have symbol rate columns, and this sentence, along with the description of phyRsGfskRateSwitchEnabled, requires the reader to calculate the column values. Readers would be less prone to error if the standard included columns for symbol rate, in addition to the the columns for data rate, in Tables 98 and 99. In that way, the reader need only compare Table rows, instead of making his own calculations.

Proposed change:

Add the columns to Tables 98 and 99. Delete the last sentence in this paragraph.

Resolution (1 of 3):

Accepted. See new tables on next slide

CID 7125:

Resolution (2 of 3):

New Table 98:

RS-GFSK MCS identifier	Data rate [kbps]	Symbol rate [ksps]	Channel spacing [kHz]	Modulation index
0	4.8	4.8	12.5	0.76
1	9.6	9.6	25	0.76
2	50	50	200	0.76
3	150	150	400	0.76
4	500	500	1000	0.76
5	250	250	500	0.5
6	500	500	1000	0.5
7	1000	1000	2000	0.5

CID 7125:

Resolution (3 of 3):

New Table 99:

RS-GFSK Operating Mode identifier	Data rate [kbps]	Symbol rate [ksps]	Channel spacing [kHz]	Modulation index
0a	9.6	4.8	12.5	0.3
1a	19.2	9.6	25	0.3
2a	100	50	200	0.3
3a	300	150	400	0.3
4a	1000	500	1000	0.3