**IEEE P802.15**

**Wireless Personal Area Networks**

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| Project | IEEE P802.15 Working Group for Wireless Personal Area Networks (WPANs) |
| Title | **(Powell) Resolutions to LB94 DF1 Comments** |
| Date Submitted | [18 Sept., 2014] |
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| Re: | [Proposed Comment Resolutions to CID #’s842, 435, 47, 46, 45, 447, 306, 451, 453, 849, 847, 94, 95, 81, 458, 427, 651, 652, 429, 398] |
| Abstract | [Working document] |
| Purpose | [see Re:] |
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**Proposed Comment Resolutions to CID #’s**

**(842, 435, 47, 46, 45, 447, 306, 451, 453, 849,
847, 94, 95, 81, 458, 427, 651, 652, 429, 398)**

**CID 842**

CID 842: Figure needs to replace "Ack" as "Imm-Ack", I think.

Proposed Change: Make it so.

**Proposed Resolution:** Accept

Replace Ack with Imm-Ack in Figure 15.

**CID 435**

CID 435: Include Inc-ACK frame handling.

Proposed Change: (none indicated)

**Proposed Resolution:** Reject

There are no longer Inc-ACK frames.

**CID 47**

CID 47: “In Step B, the TMCTP-parent PAN coordinator sends an Enhanced Beacon frame containing a TMCTP Specification IE, as defined in 6.5.3.29..” Are these Beacon frames or Enhanced Beacon frames.

Proposed Change: Clarify.

**Proposed Resolution:** Accept in Principle

Per. doc. # 15-14-0499, add the following sentence before the first sentence of 6.5.3.29 (p187):
“The TMCTP Specification IE shall be included in enhanced beacons that are sent every beacon interval in a TMCTP-enabled PAN.”

**CID 46**

CID 46: “During the CAP of the SPC ...”, The paragraph seems redundant, is it?

Proposed Change: Delete the paragraph

**Proposed Resolution:** Accept in Principle

This is part of the example being given.

Modify line 52, page 11, in Clause 5.14 as follows:

“During the CAP of the SPC TMCTP superframe, each TMCTP-child PAN coordinator…”

**CID 45**

CID 45: - “During CAP of the TMCTP-parent PAN coordinator ...” Does this paragraph belong here? It sounds like more general rules than the example.

Proposed Change: Delete the paragraph

**Proposed Resolution:** Accept in Principle

This is part of the example being given.

Modify line 52, page 11, in Clause 5.14 as follows:

“During the CAP of the TMCTP-parent PAN coordinator TMCTP superframe, which has a relay…”

**CID 447**

CID 447: Table 5 incorrectly shows that Multipurpose Frames have a PAN ID Compression bit. Multipurpose Frames have a PAN ID Present bit, which appears to have the opposite value of the PAN ID Compression bit. Multipurpose Frames also cannot have a Frame Version of 0b10. This is incorrect and confusing.

Proposed Change: Take Multipurpose Frames out of table 5 and create a table for what PAN ID Present means in the Frame Control Field of the Multipurpose Frame.

**Proposed Resolution:** Accept In Principle

Remove all instances of Multipurpose from Table 5. A table is not needed for the PAN ID Present, since the description of if in the Frame Control Field of the Multipurpose Frame is complete.

Modify line 47, page 135, in Clause 6.3.5.5 as follows:

“The PAN ID Present field ~~is present only if the Long Frame Control field is set to one. It~~ shall be set to one…”.

Remove Source PAN Identifier field from Figure 102.

**CID 306**

CID 306: Table 7: This table ONLY applies to Beacon, Data, Acknowledge and Command frames (frame type <= 3). It does not apply to MP frame or Fragment frame. It won't apply to any new frames defined in the future. It is TMI. We could add that it has to have a value from 0 to 3 but that seems like repeating the obvious (but is "not wrong"). We should, in the description of each frame, describe what the Version field value means for that frame.

Proposed Change: Delete Table 7 and reference. Add definition of valid version field values and meaning to the definition of each frame.

**Proposed Resolution:** Accept In Principle

Replace Table 7 with the table shown below:



Replace lines 49-50, page 122, in Clause 6.2.1.9 with the following:

A summary of the frame versions, and their applicability, for each of the frame types is shown in Figure 7.

**CID 451**

CID 451: The Multipurpose Frame does not have a Source PAN Identifier field, it is the same as the Destination PAN Identifier in the case of a Multipurpose Frame.

Proposed Change: Correct Figure 102.

**Proposed Resolution:** Accept In Principle

In Figure 102 remove the Source PAN Identifier field.

Modify line 36 of page 136 in Clause 6.8.5.13 as follows:
“The source PAN ID, not included in the frame, is assumed to match the Destination PAN ID when using a multipurpose frame.”

Remove contents of Clause 6.3.6 and replace with a reference to the ISO document describing formation of Multipurpose blink frame.

**CID 453**

CID 453: Can multiple Filter IE's be sent in the same frame?

Proposed Change: If not state so. If so, state how they are handled.

**Proposed Resolution:** Accept in Principle

Add the following sentence at the end of line 3, page 163, Clause 6.5.3.6:

“No more than one Enhanced Beacon Filter IE shall be conveyed per Enhanced Beacon Request frame.”

**CID 849**

CID 849: Figure 149: There are only 8 PIB IDs in Figure 8, numbered 0 - 7, and the "Number of PIB IDs" field is only two bits long, so how is it that the "PIB ID List" field can be "0/1/2/3/4" octets in length? I was thinking there could be a maximum of three PIB IDs, each three bits long. What's in the rest of the octets?

Proposed Change: Heck if I know. Please elucidate.

**Proposed Resolution:** Accept in Principle

See resolution to CID 94.

**CID 847**

CID 847: "For example, if the probability is set to 10%, then 1 of 10 devices would randomly be expected to respond." We cannot assume that the process here is ergodic -- if for no other reason than we must specify the behavior of individual devices, not groups of devices.

Proposed Change: "For example, if the probability is set to 10%, then a device would respond, on average, to one out of every ten requests." (I leave, as an exercise for the reader, the meaning of "average", and how close to 10% a given device must attain in a given number of requests.)

**Proposed Resolution:** Accept

**CID 94**

CID 94: “Number of PIB IDs” I changed this to attribute request identifiers, but this is still probably not correct. This needs work. Probably don't need 4 octets.

Proposed Change: Change the field to be 1 octet with correct cross reference.

**Proposed Resolution:** Accept in Principle

In Figure 149, change “Number of PIB IDs” to “Attribute Request Length”

Modify line 24, page 163, Clause 6.5.3.6 as follows:

“The ~~Number of~~ ~~PIB IDs~~ Attribute Request Length field indicates the ~~number~~ length of ~~attribute request~~ the Attribute Request IDs field, in octets ~~identifiers, as defined in Table 8, that follow the Percent Filter field (if present)~~.”

In Figure 149, change “PIB ID List” to “Attribute Request IDs”

In Figure 149, change the 0/1/2/3/4 octet length, above Attribute Request IDs to 0/1/2/3.

Modify line 27, page 163, Clause 6.5.3.6 as follows:

“When the ~~a PIB~~ Attribute Request IDs field is present, the…”

Insert at the beginning of the paragraph staring on line 27, page 163, Clause 6.5.3.6, the following:

“The Attribute Request IDs field is a bit map field identifying which of the Attribute Request IDs, from Table 8, are being requested. For example, if Attribute Request IDs 0, 1, and 2 are being requested, then the Attribute Request Length field would contain “10”, indicating a 1 octet length Attribute Request IDs field, and the Attribute Request IDs field would contain “11100000”.

Modify line 29, page 163, Clause 6.5.3.6 as follows:

“…when all of the capabilities identified in the ~~list~~ Attribute Request IDs field are supported.”

Modify Table 8 so that any unused Attribute Request ID values between the last one listed and 23 are marked as Reserved.

**CID 95**

CID 95: “PIB ID list” There is no such thing as a PIB ID. Plus, this is not the place to put protocol description.

Proposed Change: Delete the field.

**Proposed Resolution:** Accept in Principle

See resolution to CID 94.

**CID 81**

CID 81: Really? What do you mean by a TVWS channel then?

Proposed Change: Define the mapping between TVWS channel and WPAN channel

**Proposed Resolution:** Accept in Principle

"Yes really. The definition of a TVWS channel, and how the TVWS device gets that information, is out of scope of this standard. How we map WPAN channels into that chunk of spectrum is defined in 9.1.2.9 based on the starting frequency of that chunk being provided in macStartBandEdge by that out of scope management process.

Change “WPAN channel” to “WPAN channel as defined in 9.1.2.9" and delete “The mapping between a TVWS channel and a PHY channel is not within the scope of this standard.”

**CID 458**

CID 458: xref missing

Proposed Change: Is it possibly Table 8?

**Proposed Resolution:** Reject

Comment has no bearing on the line, page, and clause cited.

**CID 427, 651**

CID 427: What is meant with “The mechanisms described in this clause are obsolete. Consequently, this clause may be removed in a later revision of the standard”? The technology is referred to by other industry groups.

Proposed Change: Remove sub-clause 13.1

CID 651: The sentence says, it may be removed in a later revision of the standard. Which revision of the standard? Delete the sentence or make necessary changes.

Proposed Change: Clarify and make necessary changes

**Proposed Resolution:** Accept in Principle

Keep Clause 13.1 and add a new clause at the front of the document listing the sections marked for deprecation.

**CID 652**

CID 652: The sentence says, it may be removed in a later revision of the standard. Which revision of the standard? Delete the sentence or make necessary changes.

Proposed Change: Clarify and make necessary changes

**Proposed Resolution:** Accept in Principle

CSS is not to be marked for deprecation. Remove Clause 14.1.

**CID 429**

CID 429: What is meant with “The mechanisms described in this clause are obsolete. Consequently, this clause may be removed in a later revision of the standard”? The MR-O-QPSK PHY provides many sophisticated mechanisms supporting robust transmission with relaxed radio requirements. The PHY has been carefully designed by many contributers. The nice balance of BDE, FEC, DSSS combined with pilot insertion make this PHY unique and attractive. ZigBee Alliance is going to use this PHY for the NAN standard. Parts of the MR-O-QPSK PHY are used in ETSI TS 102 887-1.

Proposed Change: Remove sub-clause 21.1

**Proposed Resolution:** Accept

MR-O-QPSK is referenced in both ETSI TS 102 887-1 and the Zigbee Alliance NAN Technical Specification.

**CID 398**

CID 398: This informative annex describes the setting of PIB attributes not connected with any defined behavior. I may give the reader the idea that setting the attributes as described in this annex causes something to happen, but there are no behaviors or functions associated with the attribues in talbe 182, so the annex is confusion (at best). It seems to suggest that a device which implements non-standard modes will expose, at somes external interface, a set of registers or in some other form, information about what FSK capabilities it implements. As useful as that would be, there is no such interface defined in the standard. What is defined is an abstract interface (the PIB) which may appear to some, but is not, an actual representation readable in a conformant device.

Proposed Change: Either add normative text describing the desired behavior referenced in this annex, or remove the annex.

**Proposed Resolution:** Accept in Principle

Both *phyNumSUNPageEntriesSupported* and *phySUNPageEntriesSupported*, used in Annex F, are not listed as PHY PIB attributes in Table 181 in Clause 10.

Replace Annex F.1 with the following (combining the 2 paragraphs):
“In addition to the standard-defined PHY modes, an MR-FSK-compliant device may also support other modes represented by the Generic FSK PHY Descriptor. The Generic FSK PHY Descriptor provides the complete set of parameters necessary to define an FSK PHY mode, such as modulation type, symbol rate, modulation order, and modulation index for FSK operation, as described in Table 182”. The PIB attribute phyCurrentSUNPageEntry specifies the current PHY mode of operation if phyCurrentPage equals ten.”

Remove Annex F.3.

Change all instances in draft of “MR-FSK Generic PHY” to “Generic FSK PHY”