**IEEE P802.15**

**Wireless Personal Area Networks**

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| Project | IEEE P802.15 Working Group for Wireless Personal Area Networks (WPANs) |
| Title | **LB213/D02 comment resolution -- various CIDs -- p.71 to p.105** |
| Date Submitted | July 1, 2025 |
| Sources | Alex Krebs (Apple)  krebs @ apple.com |
| Re: |  |
| Abstract |  |
| Purpose | To propose resolution for MMS related comments for “P802.15.4ab™/D02 Draft Standard for Low-Rate Wireless Networks”. |
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**Table of contents**

[CID 451 3](#_Toc203416387)

[CID 454 6](#_Toc203416388)

[CID 461 7](#_Toc203416389)

[CID 469 8](#_Toc203416390)

[CID 175 9](#_Toc203416391)

[CID 182 10](#_Toc203416392)

[CID 495 11](#_Toc203416393)

# CID 451

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Name** | **Index #** | **Page** | **Sub-clause** | **Line #** | **Comment** | **Proposed Change** |
| VERSO, BILLY | 451 | 78 | 10.39.3.9 | 35 | The phrase "supported message control commands" appears 3 times in the draft, all 3 assocaited with SMC TLVs field, but "message control commands" is an undefined term. | Could either define "message control commands", or perhaps it should replaced by "Message ID field values" |

Discussion: It is true there is no definition of "commands" and proposed resolution is good.

Proposed Resolution: Accepted.

Disposition detail: Note to editor: There are 4 instances where this occurs, two of which occur on p.136, the other on page 78 and page 111.

CID 452, 453, 299, 503

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| **Name** | **Index #** | **Page** | **Sub-clause** | **Line #** | **Comment** | **Proposed Change** |
| VERSO, BILLY | 453 | 79 | 10.39.3.9 | 3 | Message Control has been reduced to 4 bits and a 4-bit Message Version has been added to use the other 4 bits. Should message version also be mentioned on this line as as part of the SMC TLV field? | Update lines 3 and 5 to include mention Message Version if this is appropriate. |
| VERSO, BILLY | 452 | 78 | 10.39.3.9 | 37 | While TLV is flxible, I assume there is some minimum required set that is needed, which should be clarified. Also, it seems this field is only present in frames sent in the optional initialsisation phases, so it is potentially problematic. Most likely the contributers of the message definitions know which sets go with which sort of functionality, so a better chance of vendors interworking might be promoted by deleting the SMC TLV field and instead nominating the message set needed by operational category like one-to-one, one-to-many, and the various flavours thereof, and coding each category as a bit in a bitmap. . | List a manditory set of frames that need to be supported irresperctive, and/or consider an alternative way to speficy groups/sets of commands that are needed for particulatr cases to promote interworking. |
| SUN, LIHSIANG | 299 | 98 | 10.39.11.1.3.2 | 2 | "The SMC Values field is a list of valid Message Control field values …" | suggest change to Message ID field values |
| VERSO, BILLY | 503 | 98 | 10.39.11.1.3.2 | 2 | Should this "list of valid Message Control field values" be "list of valid Message ID field values to include both the Message Control and Message Version fields" | change "Message Control" to "Message ID" |

Discussion: Yes (CID 453) and providing an example could be helpful (CID 452). And there are additional changes (CID 299 and 503) needed after the Message Control Version field has been renamed to Message ID field.

Proposed resolution: Revised.

Disposition detail:

Instruction to editor: Change clause 10.39.3.9 as per below:

**10.39.3.9 Supported message control list indication**

The initiator (controller) may indicate the supported message ID field values for each Compact frame by

referencing the supported Compact Frame ID values and their Message Control and Message Version values

using the SMID TLVs field. Subclause 10.39.11.1.3.2 details the message encodings.

For example, a SMID\_TLVs to indicate support for basic one-to-one ranging with extended support for

Presence Bitmap signaling in Poll and Response frames with Message Control equal to 1 is represented by the following SMID\_TLVs field:

{ 0x00, 0x01, 0x00, //SMC\_Tag=0 (Advertising Poll), SMC Length=1, SMC\_Values=0

0x01, 0x01, 0x00, //SMC\_Tag=1 (Advertising Response), SMC Length=1, SMC\_Values=0

0x02, 0x01, 0x00, //SMC\_Tag=2 (Start of Ranging), SMC Length=1, SMC\_Values=0

0x03, 0x02, 0x00, 0x10, //SMC\_Tag=3 (One-to-one Poll), SMC Length=2, SMC\_Values={0x00, 0x10}

0x04, 0x02, 0x00, 0x10, //SMC\_Tag=4 (One-to-one Response), SMC Length=2, SMC\_Values={0x00, 0x10}

0x05, 0x01, 0x00, //SMC\_Tag=5 (One-to-one Initiator Report), SMC Length=1, SMC\_Values=0

0x06, 0x01, 0x00 } //SMC\_Tag=6 (One-to-one Responder Report), SMC Length=1, SMC\_Values=0

The responder (controlee) may request ranging session configuration in the Advertising Response Compact

frame and may indicate the supported message ID list for each Compact frame by referencing the

supported Compact Frame ID field values and their Message ID field values using the SMID TLVs field.

After the supported message control lists have been exchanged, devices shall use values for Compact Frame

ID and Message ID indicated in the peer's SMID TLVs field when transmitting Compact frames to the

peer.

Instruction to editor: Change clause 10.39.11.1.3.2 as per below:

**10.39.11.1.3.2 The Supported Message ID Tag Length Values (SMID TLV) field**

This is a variable length field that contains zero or more Supported Message ID Tag Length Value (SMID

TLV) structures. The SMID TLV structure is formatted as shown in Figure 57.

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| **Octet: 1** | **1** | **variable** |
| SMID Tag | SMID Length | SMID Values |

**Figure 57—The Supported Message Control Tag Length Value structure**

The SMID Tag field value specifies one of the non-reserved Compact Frame ID values defined in Table 10.

The SMID Length field value specifies the number of octets in the SMID Values field.

The SMID Values field is a list of valid Message ID field values for the associated Compact frame (as

specified by the SMID Tag field) that are supported by the sender.

Instruction to editor: Also change "SMC" to "SMID" on pages 108, 110, 111, 113, 135, and 136:

# CID 454

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| **Name** | **Index #** | **Page** | **Sub-clause** | **Line #** | **Comment** | **Proposed Change** |
| VERSO, BILLY | 454 | 79 | 10.39.3.9 | 6 | Since the secure compact frame enbcapsulates some of the others frames, it may be worth noting that to use the secured version the unsecured version must also be listed…. But …. What if we only want to support the secured version. Maybe we insterad need a 2-bit flag to say for each type whether the secured or unsecured version is to be used. | Add a a 2-bit flag to allow for each SMC TLVs field message to also say whether the secured or unsecured version is to be used…. |

Discussion: Rojan had proposed and the group had accepted a comment resolution before that separates encrypted compact frames into different FrameIDs. Since the FrameID is used as the tag in the TLV structure, no additional bits are necessary to signal support.

Proposed resolution: Rejected.

Disposition detail: Tag is sufficient.

# CID 461

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| **Name** | **Index #** | **Page** | **Sub-clause** | **Line #** | **Comment** | **Proposed Change** |
| VERSO, BILLY | 461 | 80 | 10.39.5 | 28 | Is it a "ranging round" or a sub-round? Maybe just avoid this distinction | Change "the ranging round is completed at this time" to "this MMS UWB ranging exchange finished", |

Discussion: Seems appropriate to avoid confusion between round and sub-round eventually.

Proposed resolution: Accepted.

Disposition detail: n/a

# CID 469

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| **Name** | **Index #** | **Page** | **Sub-clause** | **Line #** | **Comment** | **Proposed Change** |
| VERSO, BILLY | 469 | 83 | 10.39.8.2 | 11 | Since it looks like several NB channels starting at channel #50 don't overlap with 20 MHz WiFi, if this is the case maybe these should have some special extra weighting in the hopping algorigm? | Is it worth having special treatment or special usage for these? |

Discussion: Using channels #50-#57 for advertising/initialization in 6 GHz would be a good idea if it were available globally. Unfortunately, it is not available in Europe, and has PSD limitations in the US, and 6 GHz regulatory is undefined in most APAC. We should revisit this question if regulatory changes, but for now there too little certainty about these channels to declare those for advertising.

Proposed resolution: Rejected.

Disposition detail: Regulatory limitations.

# CID 175

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| **Name** | **Index #** | **Page** | **Sub-clause** | **Line #** | **Comment** | **Proposed Change** |
| MAMAN, MICKAEL | 175 | 84 | 10.39.8.4.2 | 21 | How all 250 O-QPSK channels can be marked as blocked? At least CH2 and/or CH3 should be available. | add "The macMmsNbChannelAllowList shall at least contain channels 2 and 3". |

Discussion: If the initialization is performed via SP0 UWB (e.g. as referred to on p.73 line 9) then it could be that all NB channels are marked as blocked.

Proposed resolution: Rejected.

Disposition detail: UWB-driven mode.

# CID 182

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| **Name** | **Index #** | **Page** | **Sub-clause** | **Line #** | **Comment** | **Proposed Change** |
| MAMAN, MICKAEL | 182 | 95 | 10.39.11.1.2.1 | 37 | Higher layer methods may be used to synchronize generation and application of RPA prand values between the initiator and the responder. The method to set or update the RPA PRand is missing. The Higher layer can set or update the RPA Prand PIB with MLME-SET.request primitive in the macIrkDescriptorElement for the associated macIrkEntry IRK stored. | add at the end of the paragraph the following text "The Higher layer can set or update the RPA Prand PIB with MLME-SET.request primitive in the macIrkDescriptorElement for the associated macIrkEntry IRK stored." |
| MAMAN, MICKAEL | 216 | 144 | 10.39.12 | 22 | missing RPAPrand in MMS related MAC PIB attributes | add a new line in Table 32 macIrkAssocRpaprandpresent|Boolean|TRUE,FALSE| When macIrkAssocRpaprandpresent is TRUE, the macIrkDescriptorElement list has an associated RPA Prand value stored for each macIrkEntry IRK stored. When FALSE, the macIrkDescriptorElement list no associated RPA Prand stored with the IRKs. Add a new line in Table 33 macIrkAssocRpaprand| set of octets|0x000000-0xFFFFFF| This RPA Prand value is a 3-octet bit random sequence computed with the associated IRK |

Discussion: Given the implications to user privacy, to which the MAC layer may have no grasp on whatsoever, it's a good idea to delegate the responsibility to create, update, and maintain the RPA Prand values to the higher layer.

Proposed resolution: Accepted.

Disposition detail: n/a

# CID 495

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| **Name** | **Index #** | **Page** | **Sub-clause** | **Line #** | **Comment** | **Proposed Change** |
| VERSO, BILLY | 495 | 96 | 10.39.11.1.2.1 | 7 | "... using one or more IRKs that the receiver assumes..." seems a little vague for a procedure. Probably should refer to the PIB structure where the UL sets the IRK and relevant PRAND to use for the resolving of incoming frames | Update the text to describe the RPA resolution process with reference to the macIrkDescriptor (if this is the appropriate attribute). Consider whether a flow chart or other diagram is needed to clarify. |

Discussion: Ok.

Proposed resolution: Revised.

Disposition detail: Instruction to editor: Change p.96 line 7 as follows:

To resolve the RPA of an incoming packet the receiving device shall compute value(s) for the RPA Hash

field using the IRKs contained in the macIrkEntry attribute for each element in the macIrkList attribute with the

received RPA prand field value communicated over-the-air by the transmitting device.