**IEEE P802.15**

**Wireless Personal Area Networks**

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| Project | IEEE P802.15 Working Group for Wireless Personal Area Networks (WPANs) |
| Title | Comment resolutions for r1-0037, r1-0125, r1-0126, r1-0127, r1-0128, r1-0129, r1-0132, r1-0135, r1-0137, r1-0138, r1-0140, r1-0205, r1-0207, r1-0210, r1-0211, r1-0212, r1-0214, r1-0216, r1-0217, r1-0218, r1-0219, r1-0220, r1-0224, r1-0226, r1-0227, r1-0228, r1-0229, r1-0230, r1-0231, r1-0439, r1-0448, r1-0425, r1-0619, r1-0620, r1-0621, r1-0622, r1-0624, r1-0625, r1-0626, r1-0627, r1-0628, r1-0629, r1-0630, r1-0631, r1-0632, r1-0634, r1-0636, r1-0637, r1-0670, r1-0672, r1-rg0000, r1-rg0001, r1-rg0002, r1-rg0003, r1-rg0004, r1-rg0005, r1-rg0006 |
| Date Submitted | [July 2019] |
| Source | Aditya V. Padaki (Samsung Research America) |  |
| Re: | Re: |  |
| Abstract | Text for possible inclusion in IEEE 802.15.4z MAC |
| Purpose | Provision of the text to facilitate its incorporation into the draft text of the IEEE 802.15.4z standard currently under development in the 802.15 TG4z. |
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***Goal of this submission:***

*The objective of this submission is to provide comment resolutions*

*This document addresses the following comments:*

Comment resolutions for r1-0037, r1-0125, r1-0126, r1-0127, r1-0128, r1-0129, r1-0132, r1-0135, r1-0137, r1-0138, r1-0140, r1-0205, r1-0207, r1-0210, r1-0211, r1-0212, r1-0214, r1-0216, r1-0217, r1-0218, r1-0219, r1-0220, r1-0224, r1-0226, r1-0227, r1-0228, r1-0229, r1-0230, r1-0231, r1-0439, r1-0448, r1-0425, r1-0619, r1-0620, r1-0621, r1-0622, r1-0624, r1-0625, r1-0626, r1-0627, r1-0628, r1-0629, r1-0630, r1-0631, r1-0632, r1-0634, r1-0636, r1-0637, r1-0670, r1-0672, , r1-rg0000, r1-rg0001, r1-rg0002, r1-rg0003, r1-rg0004, r1-rg0005, r1-rg0006.

**CID r1-0037**

**Resolution: Revise**

*On page 9, line 28, Delete the following:*

“When a MAC primitive is issued by the upper layer, specifying an RSTU value for a future activity that is more than half a period in the future, the MAC shall consider this to be a late invocation of the primitive and shall act accordingly, as specified in the individual primitive descriptions.”

*Add the following lines on page 86 after line 35:*

For ERDEvs when a MLME-RX-ENABLE.request primitive is issued by the upper layer, specifying RxOnTime with an RSTU value that is more than half a period in the future, the MAC shall consider this to be a late invocation and return PAST\_TIME in the MLME-RX-ENABLE.confirm for the corresponding RxOnTimes.

*Add the following lines on page 95 at the end of line 9:*

When a MCPS-DATA.request primitive is issued by the upper layer, specifying with an RSTU value that is more than half a period in the future, the MAC shall consider this to be a late invocation and the MAC sublayer will discard the MSDU and issue the MLME-Data.confirm primitive with a status of TX\_TIME\_ERROR.

**CID r1-0125**

**Resolution: Revise**

Change to “should be used”

**CID r1-0126, r1-0129, r1rg-0001**

**Resolution: Revise**

The contents of this IE are critically important as STS generation will be dependent on the contents specified in this IE based on the APDUs. So, this should be specified in 15.4z in this subclause.

On page 44, end of line 33, add the sentence after “Figure 11”: This information can be used by the respective device components (e.g., a secure element) to select the appropriate STS used for ranging.”

**CID r1-0127**

**Resolution: Revise**

Change to “should”

**CID r1-0128**

**Resolution: Accept**

**CID r1-0132**

**Resolution: Revise**

Replace “shall” by “should”

**CID r1-0135**

**Resolution: Revise**

Replace “shall be” by “is” in row starting with 0 in the first column

Replace “shall be” by “is” in row starting with 1 in the first column

Remove “shall” and change “contain” to “contains” in the row starting with 2 in the first column

Replace “shall be” by “is” in row starting with 3 in the first column

**CID r1-0137**

**Resolution: Revise**

Replace “shall be” by “is”

**CID r1-0138**

**Resolution: Revise**

Replace “shall be” by “is”

**CID r1-0140**

**Resolution: Revise**

Replace “shall be” by “is”

**CID r1-205, r1-0622**

**Resolution: Reject**

**Reason:** The Ranging Ancillary Information Exchange is primarily used to exchange information pertaining to setting up ranging procedures. For example, to request various measurement reports for an SP3 ranging, we will need a ranging round before the SP3 ranging round to exchange all the ranging measurement requests. That data can also be transferred is purely incidental to the exchange of key information required for setting up ranging.

**CID r1-0207**

**Resolution: Accept**

**CID r1-0210, 214**

**Resolution: Revise**

This is the interaction between the next higher layers of the initiator and the responder. The next higher layer of the initiator is responsible for the fragmentation of the data into various messages and passing it on to the MAC for transmission and retransmission as may be required.

Revise the sentence starting “A given data…” on page 29, line 17 to “The next higher layer can use the fields of RAICT IE to transmit information over multiple MAC messages spanning multiple ranging slots in a ranging round and for managing retransmissions.”

**CID r1-0211**

**Resolution: Revise**

Change the sentence to “In the current ranging round and any subsequent number ranging round(s) following the RCM as specified in the Ranging Validity Rounds of the ARC IE”

**CID r1-0212**

**Resolution: Revise**

*Change the sentence to:* “The next higher layer can use the fields of RAICT IE to transmit information over multiple MAC messages spanning multiple ranging slots in a ranging round and for managing retransmissions.”

**CID r1-0216**

**Resolution: Accept**

**CID r1-0217, r1-0224, r1-0226**

**Resolution: Revise.**

Accept the comment. Request the editor to change every occurrence of MMRC to MMRCM.

**CID r1-0218**

**Resolution: Accept**

**CID r1-0219**

**Resolution: Revise**

Change MMAR on page 29, line 30 to “MMRCR”

**CID r1-0220**

**Resolution: Revise**

Change “MMRCR” to “MMRCR field in the ARC IE”

**CID r1-0227**

**Resolution: Revise**

On page 30, line 4, add the sentence: “The Address field and the MMRC bitmap field in the MMRC List element of the RMMRC IE is used to indicate the source address from which the message was received in the corresponding slots.”

**CID r1-0228, r1-0632**

**Resolution: Revise**

On page 30, line 4, add the sentence: “The RMMRC messages can be used to confirm the receipt of messages in the current or previous contiguous ranging rounds, as specified by the RCM validity rounds in the ARC IE”.

**CID r1-0229**

**Resolution: Revise**

On page 29, line 33, add the following sentence after “… 1 to N.”: “Device Ai transmits *K*Ai messages.”

**CID r1-0230, r1-231**

**Resolution: Revise**

**New figure will be provided**

**CID r1-0439**

**Resolution: Revise**

Change the sentence to “In the current ranging round and any subsequent number ranging round(s) following the RCM as specified in the Ranging Validity Rounds of the ARC IE”

**CID r1-0448**

**Resolution: Revise**

New Figure 20 will clarify the role of the next higher layer.

**CID r1-0425, r1-0619**

**Resolution: Revise**

This is a different number. Needs disambiguation.

In Figure 65, change the name of the field “Sequence Number present” to “Ranging/Ancillary Message Sequence Number present”, and “Sequence Number” to “Ranging/Ancillary Message Sequence Number”.

Change page 80, line 7 from “Sequence Number present” to “Ranging/Ancillary Message Sequence Number present”

Change page 80, line 11 from “Sequence Number” to “Ranging/Ancillary Message Sequence Number”.

**CID r1-620, r1-621**

**Resolution: Revise**

Delete the fields “Message Type Present” and “Message Type” from Figure 65 on page 80.

On page 80, delete lines 9-10, and line 14.

**CID r1-0624**

**Resolution: Reject**

This IE is used for receipt confirmation of ranging messages or ancillary messages that are used for ranging or for exchanging ranging measurement reports, etc. So, this is not out of scope of PAR.

**CID r1-0625**

**Resolution: Revise**

Revise the sentence on page 80, line 21 as: “The receipt of messages from one or more initiators can be confirmed using the RMMRC IE. A bitmap and the initiator address are used to convey the confirmation of the receipt of messages from an initiator.”

**CID r1-0626**

**Resolution: Revise**

**Delete the sentence “**The IE shall contain a table to acknowledge multiple initiators in a single message.**”**

**CID r1-0627, r1-0628, r1-0629, r1-0630, r1-0631, r1-0637**

**Resolution: Revise**

*Replace the paragraph staring on page 81, line 2 with the following:*

The Address field indicates the address of the initiator for which the MMRC Bitmap of the corresponding list element indicates the receipt confirmation.

MMRC Bitmap length is given by ceiling(NumberOfSlotsbeing acknowledged/8).

The MMRC Bitmap field contains a binary bitmap string. Each bit maps to the slots in the ranging round(s) that the RMMRC IE is used to send message receipt confirmations. Each bit confirms the receipt of a message in the slot. The bit is set to 1 to confirm successful reception, otherwise it is set to 0 to convey that the message was not received or not addressed to the MMRC sender in that slot. The first bit in time sent in the field refers to the first time slot and the subsequent bits refer chronologically to the subsequent time slots. When the number of bits sent in the MMRC bitmap is greater than the number of slots for which the receipt confirmation is being used, the last bits sent, given by ExtraBits = (NumberOfBitsinMMRCBitmap – NumberOfSlotsForReceiptConfirmation) are discarded.

**CID r1-0670**

**Resolution: Revise**

The ON-TIME\_TOO\_LONG is per instance of the vector for Beacon Enabled ERDEV. Thus, a vector of receipt confirmations is necessary.

Add the following sentence at the end of page 86, line 23: “When used as a list, RxOnTimes shall be in chronological order of the receiver on times.”

*Editor may appropriately tweak the language as may be needed.*

**CID r1-0672**

**Resolution: Revise**

A new message sequence chart will be provided.

**CID r1-rg0000**

**Resolution: Reject**

IEEE 802.15.4-2015 provides for including addressing as well as using security on ACKs.

**CID r1-rg0002**

**Resolution: Reject**

Whether the payload is command or response is indicated by the higher layer or secure element. We don’t need this in the MPX IE MAC frame.

**CID r1-rg0003**

**Resolution: Reject**

Next higher layer error management is handled as defined in ISO 7816-4 [B21].

**CIF r1-rg0004**

**Resolution: Reject**

The ETSI TS 102 622, 9.4.2 defines Mifare belongs to the Non ISO/IEC 14443-4 type A case. There are two cases in Desfire, one belongs to the 9.4.1, the use of contactless card application (when there is USSID) and another belongs to the 9.4.2 (when there is no USSID).

**CID r1-rg0005**

**Resolution: Reject**

The secure transaction is not based on the secure element, it is only based on the protocol and USSID. Routing to different secure elements without any secure element identifier field can be handled by high layer efficiently and correctly.

**CID r1-rg0006**

**Resolution: Accept**

*We are already doing this – so there is nothing to change in the document.*

A dedicated Transaction ID will be used in the Transaction ID field of the MPX IE.