**IEEE P802.15**

**Wireless Personal Area Networks**

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| Project | IEEE P802.15 Working Group for Wireless Personal Area Networks (WPANs) |
| Title | **Proposed Resolution for Short term operating parameters** |
| Date Submitted | February 2025 |
| Sources | Rojan Chitrakar, Lei Huang (Huawei)rojan.chitrakar@huawei.com |  |
| Re: |   |
| Abstract |  |
| Purpose | To propose resolution for “P802.15.4ab™/D01 Draft Standard for Low-Rate Wireless Networks” |
| Notice | This document does not represent the agreed views of the IEEE 802.15 Working Group or IEEE 802.15.4ab Task Group. It represents only the views of the participants listed in the “Sources” field above.It is offered as a basis for discussion and is not binding on the contributing individuals. The material in this document is subject to change in form and content after further study. The contributors reserve the right to add, amend or withdraw material contained herein. |

Rev 0: Initial version: 14 CIDs

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| **Name** | **Index#** | **Pg** | **Sub-Clause** | **Ln** | **Comment** | **Proposed Change** | **Disposition** |
| Pooria Pakrooh | 1353 | 66 | 10.38.3.7 | 10 | This sentence is Mandating a behaviour to upper layer. Change shall to should. | As in the comment | Revise.Cited sentence is rewritten. |
| Carlos Aldana | 997 | 66 | 10.38.3.7 | 66 | I see value in changing channel map in the short-term parameters. Please limit changing the short-term parameters to include \*only\* channel map. May want to create a Message content field with just NB Channel Map. | As in comment | RejectWith the current Poll frame format, it is already possible to only include the NB channel Map. |
| Carlos Aldana | 986 | 124 | 10.38.10.1 | 10 | The following 802.11 20 MHz channel center frequencies are likely to have a lot of traffic (probe request, beacons from 6GHz only APs, and probe responses) and should be removed from the initial macMmsNbChannelAllowList to prevent ranging outages: 5975, 6055, 6135, 6215, 6295, and 6375 MHz  |  Change text in column “Default” for macMmsNbChannelAllowList to “1-65, 74-97, 106-129, 138-161, 170-193, 202-225, 234-249” | RejectImplementations can choose the channels to enable/disable in the macMmsNbChannelAllowList according to deployment scenario. It is not necessary to restrict the default value. |
|  |  |  |  |  |  |  |  |

**Proposed text changes on P802.15.4ab™/D01:**

**10.38.3.7 Ranging session configuration**

***Modify the subclause as follows (Track changes ON)***

Before a UWB MMS ranging session is started, the ranging block structure and the ranging round are

configured. Unless set up during ranging setup (10.38.3.4), or by the next higher layer, the default

parameters shall be applied to the ranging session configuration. During a UWB MMS ranging session,

some parameters of the ranging block structure and the ranging round may be updated by the next higher

layer. For each parameter update, the new parameters take effect in the ranging block indicated by the next higher layer. How the next higher layers of an initiator and a responder synchronize the parameters and the effective time is beyond the scope of this standard.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Name** | **Index#** | **Pg** | **Sub-Clause** | **Ln** | **Comment** | **Proposed Change** | **Disposition** |
| Alex Krebs | 1404 | 72 | 10.38.7.4.2 | 7 | Updating the allowed channel list for just one ranging round as described in 10.38.9.3.7 is not efficient, since only one channel is used during one ranging round anyways. It's also contradicting lines 25-26 of the channel switching protocol on the same page. | Remove the sentence "The list..." in line 7-8, and propose a change to the short-term parameter update protocol (e.g. sending the channel number (one byte) explicitly instead of sending a 2, 5, or 6-byte channel map.) | ReviseNB Channel field is added in Poll frame for short-term parameter update. |
| Carl Murray | 871 | 72 | 10.38.7.4.3 | 11 | This section purports to describe the channel switching protocol but it does not describe how a change in the macMmsNbChannelAllowList via short term parameters is meant to work as indicated on line 7 "The list of allowed channels may be updated during an ongoing ranging session using short-term signaling, as described in 10.38.3.7." Section 10.38.3.7 doesn't describe this either. | Describe how the channel switching protocol works when there is a change in macMmsNbChannelAllowList via short term parameters | ReviseChanges are made such that macMmsNbChannelAllowList is not modified via short term parameters |
| Pooria Pakrooh | 1354 | 66 | 10.38.3.7 | 19 | This design for the behaviour of the short term parameters has several issues:1. If the devices need to switch the parameters for the remainder of the ranging session, they need to keep sending the short term parameters.2. What is the jusfification for changing the parameters other than NB channel map (such as ...). for one single round? 3. The way short term parameters behaviour is defined, it can lead to extensive airtime without proper justification. | 1. Limit the short term change parameters to NB channel map. 2. Explain the need for changing the other parameters in the middle of the session.3. Specify that the parameters changed will take effect until changed back again, and not only in the susequent round. | Revise1. Parameters other than NB channel map may also be modified in the short-term.2. Parameters such as data rate, number of MMS fragments etc. may be changed during session to adapt to channel conditions.3. Mechanisms for long-term update of operating parameter is added. |
|  |  |  |  |  |  |  |  |

**Discussions**:

**CID 1354**

P66L18:

An initiator may override the long-term operating parameters of a ranging round by indicating a new set of

short-term parameters during the control phase. **The short-term parameters only affect the current ranging**

**round. The long-term operating parameters resume being in effect on the next ranging round** unless

overridden again during the next control phase.

To enable the update of long term operating parameters beyond the current round, it is important to ensure that the responder acknowledges the request for the update. Else, there is a possibility that the initiator makes the update but the responder may not, leading to mismatch of operating parameters. The following is proposed:

1. The **initiator indicates (in the Poll frame) whether the operating parameter update is intended for short-term (current round only) or for long-term (persistent)**.

2. If the update is for short-term, the procedure is the same as in D1.0.

3. If the update is for long-term, and **the responder acknowledges the update** **request** in the response frame, in which case both initiator and responder start using the **updated operating parameters from the next round**. Existing operating parameters are used in the current round.

4. If the update is for long-term, and **the responder does not acknowledge the update request (**in the response frame**)**, then **the operating parameters are not updated**.

CIDs 1404, 871

As of D1.0, the short-term parameter update will change *macMmsNbChannelAllowList*, thereby making the change persistent. CID 1404 suggests to directly update the NB channel for short-term update thereby avoiding the update to *macMmsNbChannelAllowList*. The following is proposed:

1. **If the operating parameter update is for short-term, initiator directly signals a particular NB channel to use for the current round**. *macMmsNbChannelAllowList* is not updated.

2. **If the operating parameter update is for long-term**, the initiator includes a NB channel map in the Poll frame. If the update request is acknowledged, ***macMmsNbChannelAllowList* is updated by both devices and the change will take effect from the next round**.

**Proposed text changes on P802.15.4ab™/D01:**

**10.38.9.7 One-to-one Poll Compact frame**

***Modify the subclause as follows (Track changes ON)***

…

When the Message Control field value is 0x10 the Message Content field shall be formatted as shown in

Figure 75.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Octets: 1 | 1/2 | 0/2/5/6 | 0/1 | 0/7 | 0/4 | 0/1 | 0/1 | 0/2 | 0/1 |
| Poll Control | Presence Bitmap | NB Channel Map | ManagementPHYConfiguration | ManagementMACConfiguration | Ranging PHYConfiguration | Ranging MACConfiguration | NB Channel | Block Index | Round Index |

**Figure 75—Format** **of the Message Content field in the One-to-one Poll Compact frame**

**when the Message Control field value is 0x10**

The Poll Control field shall be formatted as shown in Figure 7x1.

|  |  |  |
| --- | --- | --- |
| Bits: 0-4 | 5 | 6-7 |
| Request Bitmap | Long Term Parameters Update | Reserved |

Figure 7x1 - The Poll Control field

The Request Bitmap field is formatted as per 10.38.9.3.13.

The Long Term Parameters Update field when set to one indicates that the operating parameters fields (NB Channel Map, Management PHY Configuration, Ranging PHY Configuration, Ranging MAC Configuration) carried in the frame is meant for long term update. Otherwise, the Long Term Parameters Update field when set to zero indicates that the operating parameters fields (Management PHY Configuration, Ranging PHY Configuration, Ranging MAC Configuration, NB Channel) carried in the frame is meant for short term update.

The Presence Bitmap field is set as specified in 10.38.9.3.24, except that the Extended Presence Bitmap

Present field shall be set to zero. If the Long Term Parameters Update field is set to zero in the Poll Control field, the Management MAC Configuration Present field in the Presence Bitmap field shall be set to zero.

The NB Channel Map field if present shall be set as per 10.38.9.3.7.

…

The Ranging MAC Configuration field if present shall be set as per 10.38.9.3.11.

The NB Channel field carries the index of one of the NB channels defined in 11.1.3.15.

The Block Index field if present shall be set as per 10.38.9.3.19.

The Round Index field if present shall be set as per 10.38.9.3.20.

Either the NB Channel Map field or the NB Channel field may be present in the Message Content field in the One-to-one Poll Compact frame when the Message Control field value is 0x10, but not both. The NB Channel Map field may be present when the Long Term Parameters Update field is set to one, while the NB Channel field may be present when the Long Term Parameters Update field is set to zero.

**10.38.9.3.13 The Request Bitmap field**

***Modify the subclause as follows (Track changes ON)***

…

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Bits: 0 | 1 | 2 | 3 | 4 |  |
| NB Channel Map Requested | ManagementPHYConfigurationRequested | ManagementMACConfigurationRequested | Ranging PHYConfigurationRequested | Ranging MACConfigurationRequested |  |

**Figure 55—The Request Bitmap field**

**10.38.9.3.24 The Presence Bitmap field**

***Modify the subclause as follows (Track changes ON)***

…

The Extended Presence Bitmap field shall be formatted as shown in Figure 59.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Bits: 0 | 1 | 2 | 3 | 4 | 5 | 6- 7 |
| SMC\_TLVsPresent | Start and End Slot Indices Present | Starting BlockIndex Present | MMS Ranging ModeConfiguration Present | Group ID Present | NB Channel Present | Reserved |

**Figure 59—Extended Presence Bitmap field format**

…

The MMS Ranging Mode Configuration Present field when one indicates that the MMS Ranging Mode

Configuration field is included in the Message Content field or is not included when the MMS Ranging

Mode Configuration Present field value is zero.

The NB Channel Present field when one indicates that the NB Channel field is included in the Message Content field or is not included when the NB Channel Present field value is zero.

**10.38.9.8 One-to-one Response Compact frame**

***Modify the subclause as follows (Track changes ON)***

…

When the Message Control field value is 0x10 the Message Content field shall be formatted as shown in

Figure 78.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Octets: 1/2 | 0/2/5/6 | 0/1 | 0/7 | 0/4 | 0/1 | 0/1 | 0/1/2/3 |
| Presence Bitmap | NB Channel Map | ManagementPHYConfiguration | ManagementMACConfiguration | Ranging PHYConfiguration | Ranging MACConfiguration | Status | Zero Padding |

**Figure 78—Format of the Message Content field in the One-to-one Response Compact**

**frame when the Message Control field value is 0x10**

…

The encodings and meanings of the subsequent fields in the frame content, except the Status field and the Zero Padding field, is identical to that of the Advertising Response Compact frame with Message Control field value is 0x10.

The Status field is described in 10.38.9.3.23. The Status field is present and set to LTP\_ACK if the responder acknowledges the long term operating parameters included in the preceding Poll frame.

The Zero Padding field shall be present when the size of the Message Content field without the Zero

Padding field is less than five octets. The Zero Padding field, when present, shall consist of one, two or

three octets with a value of zero where the number of padding octets are determined such that the Message

Content field has a size of five octets.

**10.38.9.6 Start of Ranging Compact frame**

***Modify the subclause as follows (Track changes ON)***

…

The Status field is described in 10.38.9.3.23. The value of the status field is set as SUCCESS if the initiator

intends to proceed to the control phase but not all configuration values are transmitted over the air

explicitly. Otherwise, if the initiator does not intend to proceed to the control phase, the value of the status

field is set as one of the non-reserved values other than SUCCESS and LTP\_ACK as described in 10.38.3.2.

**10.38.9.3.23 The Status field**

***Modify the subclause as follows (Track changes ON)***

**Table 16—Values of Status field**

|  |  |  |
| --- | --- | --- |
| **Status field value** | **Name** | **Meaning** |
| 0 | SUCCESS | Request is accepted |
| 1 | INVALID\_PARAMETERS | Request is denied as one or more requested parameters cannot be accepted by the Initiator. |
| 2 | CAPABILITY\_NOT\_SUPPORTED | One or more required capability is not supported by the responder. For example, a (Compact frame ID, Message Control ID) tuple intended to be used by the initiator is not supported by the responder. |
| 3 | CONFIG\_REJECTED | Initiator indicates rejection with the suggested difference from the configuration parameters in Advertising Response Compact frame. |
| 4 | FAILURE | Request is denied due to other reasons. |
| 5 | LTP\_ACK | Acknowledgment or confirmation of long term parameters update |
| 6-255 | - | Reserved. |

**10.38.9.12 One-to-many Poll Compact frame**

***Modify the subclause as follows (Track changes ON)***

…

When the Message Control field value is 0x70 the Message Content field shall be formatted as shown in

Figure 94.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Octets: 1 | 1 | 1 | 1/2 | variable |
| Number of Responders | Slots per Responder | Poll Control | Presence Bitmap | Responder Detail List |

**Figure 94—Format of the Message Content field in the One-to-many Poll Compact frame**

**when the Message Control field value is 0x70**

The Poll Control field shall be formatted as shown in Figure 7x1.

|  |  |  |
| --- | --- | --- |
| Bits: 0-4 | 5 | 6-7 |
| Request Bitmap | Long Term Parameters Update | Reserved |

Figure 7x1 - The Poll Control field

The Request Bitmap field is formatted as per 10.38.9.3.13.

The Long Term Parameters Update field when set to one indicates that the operating parameters fields (NB Channel Map, Management PHY Configuration, Ranging PHY Configuration, Ranging MAC Configuration) carried in the frame is meant for long term update. Otherwise, the Long Term Parameters Update field when set to zero indicates that the operating parameters fields (Management PHY Configuration, Ranging PHY Configuration, Ranging MAC Configuration, NB Channel) carried in the frame is meant for short term update.

The Presence Bitmap field is set as specified in 10.38.9.3.24, except that the Extended Presence Bitmap

Present field shall be set to zero. If the Long Term Parameters Update field is set to zero in the Poll Control field, the Management MAC Configuration Present field in the Presence Bitmap field shall be set to zero. The Presence Bitmap field bits in this case are indicating the presence or

absence of the corresponding fields in the Responder Detail List elements.

The Responder Detail List is a list of Responder Detail elements, each formatted as per Figure 95. T he

number of Responder Detail elements in the Responder Detail List field is determined by the Number of

Responders field value.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Octets: 3 | 0/2/5/6 | 0/1 | 0/7 | 0/4 | 0/1 | 0/1 | 0/2 | 0/1 |
| Responder Address | NB Channel Map | ManagementPHYConfiguration | ManagementMACConfiguration | Ranging PHYConfiguration | Ranging MACConfiguration | NB Channel | Block Index | Round Index |

**Figure 95—Responder Detail element format (Message Control = 0x70)**

…

The Ranging MAC Configuration field if present shall be set as per 10.38.9.3.11.

The NB Channel field if present carries the index of one of the NB channels defined in 11.1.3.15.

The Block Index field if present shall be set as per 10.38.9.3.19.

The Round Index field if present shall be set as per 10.38.9.3.20.

Either the NB Channel Map field or the NB Channel field may be present in the Message Content field in the One-to-many Poll Compact frame when the Message Control field value is 0x70, but not both. The NB Channel Map field may be present when the Long Term Parameters Update field is set to one, while the NB Channel field may be present when the Long Term Parameters Update field is set to zero.

…

When the Message Control field value is 0x80 the Message Content field shall be formatted as shown in

Figure 96.

|  |  |  |  |
| --- | --- | --- | --- |
| Octets: 1 | 1 | 1/2 | variable |
| Number of Responders | Poll Control | Presence Bitmap | Responder Detail List |

**Figure 96—Format of the Message Content field in the One-to-many Poll Compact frame**

**when the Message Control field value is 0x80**

The Number of Responders field indicates the number of responders to be involved in the current ranging

session and determines the length of the Responder Detail List field.

The Poll Control field shall be formatted as shown in Figure 7x1.

|  |  |  |
| --- | --- | --- |
| Bits: 0-4 | 5 | 6-7 |
| Request Bitmap | Long Term Parameters Update | Reserved |

Figure 7x1 - The Poll Control field

The Request Bitmap field is formatted as per 10.38.9.3.13.

The Long Term Parameters Update field when set to one indicates that the operating parameters fields (NB Channel Map, Management PHY Configuration, Ranging PHY Configuration, Ranging MAC Configuration) carried in the frame is meant for long term update. Otherwise, the Long Term Parameters Update field when set to zero indicates that the operating parameters fields (Management PHY Configuration, Ranging PHY Configuration, Ranging MAC Configuration, NB Channel) carried in the frame is meant for short term update.

…

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Octets: 3 | 0/2/5/6 | 0/1 | 0/7 | 0/4 | 0/1 | 0/2 | 0/2 | 0/1 | 0/2 | 0/1 |
| Responder Address | NB Channel Map | ManagementPHYConfiguration | ManagementMACConfiguration | Ranging PHYConfiguration | Ranging MACConfiguration | Start Slot Index | End Slot Index | NB Channel | Block Index | Round Index |

**Figure 97—Responder Detail element format (Message Control = 0x80)**

…

The End Slot Index field if present shall be set to the index of the last slot of the ranging sub-round.

The NB Channel field if present carries the index of one of the NB channels defined in 11.1.3.15.

The Block Index field if present shall be set as per 10.38.9.3.19.

The Round Index field if present shall be set as per 10.38.9.3.20.

Either the NB Channel Map field or the NB Channel field may be present in the Message Content field in the One-to-many Poll Compact frame when the Message Control field value is 0x80, but not both. The NB Channel Map field may be present when the Long Term Parameters Update field is set to one, while the NB Channel field may be present when the Long Term Parameters Update field is set to zero.

**10.38.9.13 One-to-many Response Compact frame**

***Modify the subclause as follows (Track changes ON)***

…

When the Message Control field value is 0x10 the Message Content field shall be formatted as shown in

Figure 102.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Octets: 1/2 | 0/2/5/6 | 0/1 | 0/7 | 0/4 | 0/1 | 0/1 | 0/1/2/3 |
| Presence Bitmap | NB Channel Map | ManagementPHYConfiguration | ManagementMACConfiguration | Ranging PHYConfiguration | Ranging MACConfiguration | Status | Zero Padding |

**Figure 102—Format of the Message Content field in the One-to-many Response Compact**

**frame when the Message Control field value is 0x10**

…

The Ranging MAC Configuration field if present shall be set as per 10.38.9.3.11.

The Status field is described in 10.38.9.3.23. The Status field is present and set to LTP\_ACK if the responder acknowledges the long term operating parameters included in the preceding Poll frame.

**10.38.3.7 Ranging session configuration**

***Modify the subclause as follows (Track changes ON)***

…

An initiator and a responder shall use the parameters which are set or updated by the next higher layers or

the parameters which are not set or updated by the next higher layers but are negotiated during the

initialization setup handshake as the long-term operating parameters. If the parameters are not set or

updated by the next higher layers and not negotiated during initialization setup handshake, an initiator and a

responder shall use default parameters as the long-term operating parameters.

An initiator may override the long-term operating parameters for the current ranging round by setting the Long Term Parameters Update field to zero in the Poll Control field in the Message Content field in the One-to-one Poll Compact frame with the Message Control field value equal to 0x10 and indicating a new set of short-term parameters during the control phase. The short-term parameters only affect the current ranging round. The long-term operating parameters resume being in effect on the next ranging round unless overridden again during the next control phase. The initiator may also update the long-term operating parameters for the next and subsequent ranging rounds by setting the Long Term Parameters Update field to one in the Poll Control field in the Message Content field in the One-to-one Poll Compact frame with the Message Control field value equal to 0x10 and indicating a new set of long-term parameters during the control phase. If the initiator receives the Status field set to LTP\_ACK in the Message Content field in the One-to-one Response Compact frame with the Message Control field value equal to 0x10, the new set of long-term operating parameters take effect from the next ranging round.

**10.38.4 UWB MMS control phase**

**10.38.4.1 General**

***Modify the subclause as follows (Track changes ON)***

…

The poll Compact frame (10.38.9.7) serves to enable carrier coherent transmissions from the initiator to the

responder device. Additionally, the poll Compact frame may indicate either short-term operating parameters for

the current ranging round, or long-term operating parameters for the next and subsequent ranging rounds and optionally request that the responder suggests short-term operating parameters for the next ranging round. The poll Compact frame is transmitted at long-term management PHY configuration. Upon receiving the poll Compact frame with the Long Term Parameters Update field in the Poll Control field set to zero and including short-term operating parameters, the responder shall update the short-term operating parameters accordingly. The updated short-term operating parameters take effect at the end of the poll Compact frame and are only applicable to the current ranging round. All subsequent transmissions in the current ranging round shall use the updated operating parameters. All parameters revert to the long-term operating parameter in the next ranging round. Upon receiving the poll Compact frame with the Long Term Parameters Update field in the Poll Control field set to one and including long-term operating parameters, if the responder agrees with the suggested parameters, it should include the Status field set to LTP\_ACK in its response frame. All transmissions in the current ranging round shall use the existing operating parameters. If the responder included the Status field set to LTP\_ACK in its response frame, the responder shall update the long-term operating parameters prior to the start of the next ranging round. If the initiator received the Status field set to LTP\_ACK in the response frame, the initiator shall update the long-term operating parameters prior to the start of the next ranging round allocated to the responder.

**10.38.7.4 Channel switching**

**10.38.7.4.1 Overview**

The NBA MMS combines O-QPSK narrowband PHY and the HRP UWB PHY and MAC protocols. Since

only a fraction of the spectrum is used for each O-QPSK transmission, a frequency diversity method is

defined here to provide robust access and mitigate the impact of fading.

This scheme is based on a list of channels that may be used by the initiator and the responder for channel

access. The list-based mechanism defined in 10.38.7.4.2 is used to coordinate a set of channels that may be

used by the initiator and the responder for channel access, and 10.38.7.4.3 specifies the mechanism to

dynamically switch among the coordinated channels on each successive ranging block. The initiator may update the NB channel used for the current ranging round by including the NB Channel field as one of the short-term operating parameters in the Poll Compact frame as described in 10.38.4.1. The initiator may also update the list of allowed channels for the next and subsequent ranging rounds by including the NB Channel Map field as one of the long-term operating parameters in the Poll Compact frame as described in 10.38.4.1.

**10.38.7.4.2 Allowed channel list**

***Modify the subclause as follows (Track changes ON)***

Where a subset or the entire set of the 250 O-QPSK channels is known to be unavailable, unusable, or

deemed inefficient to be used, the initiator may mark these channels as blocked by removing them from the

*macMmsNbChannelAllowList*. When all 250 O-QPSK channels are marked as blocked, devices should not

engage in an MMS ranging session. For example, an initiator device that is equipped with an IEEE 802.11

radio and engaged in concurrent radio transmissions with other devices on known WLAN channels can

choose to exclude the conflicting channels. The list of allowed channels may be updated during an ongoing

ranging session, as described in 10.38.3.7.

The initiator may inform the responder of allowed channels from the *macMmsNbChannelAllowList*, using

the NB Channel Map field which is constructed as shown in Figure 49 in 10.38.9.3.7. In each ranging block, if channel switching is enabled, the initiator and the responder(s) shall use the channel switching protocol described in 10.38.7.4.3.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Name** | **Index#** | **Pg** | **Sub-Clause** | **Ln** | **Comment** | **Proposed Change** | **Disposition** |
| Mickael Maman | 61 | 94 | 10.39.9.5 | 1 | In figure 67, the presence bitmap is 1/2 because of extended presence bitmap for SMC TLVs and MMS Ranging mode configuration fields | as in comment | Accept |
| Tero Kivinen | 557 | 97 | 10.38.9.7 | 14 | When is the one to one poll compact frame sent to multiple recipient?  | Remove text about one to one poll compact frame to sent to multiple recipients. | RejectThere is no text regarding multiple recipients. The responder IRK is used when there is a possibility of ambiguity regarding the target responder, else the initiator IRK is used by default. |
| Mickael Maman | 64 | 98 | 10.39.9.7 | 7 | Management PHY Configuration and Management MAC Configuration shall not be short term parameters. There is a consensus to not switch from UWB driven MMS to NBA MMS. Another case is for one-to-may MMS ranging, we shall not modify them in one-to-one POLL compact frame when used in one-to-many subround. | list of change: In figure 75 remove Management PHY Configuration and Management MAC Configuration. Line 3, add" except that the Management PHY Configuration present field and Management MAC Configuration present field shall be set to 0" and remove line 7 and 8. | ReviseThere is interest in allowing modification to the management PHY in the short term. Agree that MAC config is not changed in the short term. Agree that UWB MMS Mode shall not be switching during ranging and text is added in 10.38.9.3.17 (The Management PHY Configuration field) to this effect.O2O Poll frame is not used during O2M ranging. |
| Mickael Maman | 65 | 99 | 10.39.9.8 | 7 | Management PHY Configuration and Management MAC Configuration shall not be short term parameters. There is a consensus to not switch from UWB driven MMS to NBA MMS. Another case is for one-to-may MMS ranging, we shall not modify them in one-to-one RESP compact frame when used in one-to-many subround. | list of change: In figure 78 remove Management PHY Configuration and Management MAC Configuration. Line 7, add" except that the Management PHY Configuration present field and Management MAC Configuration present field shall be set to 0" and in line 16 remove"Management PHY Configuration, Management MAC Configuration" | ReviseThere is interest in allowing modification to the management PHY in the short term. Agree that MAC config is not changed in the short term. Agree that UWB MMS Mode shall not be switching during ranging and text is added in 10.38.9.3.17 (The Management PHY Configuration field) to this effect. |
| Mickael Maman | 66 | 101 | 10.39.9.8 | 6 | Management PHY Configuration and Management MAC Configuration shall not be short term parameters. There is a consensus to not switch from UWB driven MMS to NBA MMS. Another case is for one-to-many MMS ranging, we shall not modify them in one-to-one REPORT compact frame when used in one-to-many subround. | list of change: In figure 83 remove Management PHY Configuration and Management MAC Configuration. Line 7, add" except that the Management PHY Configuration present field and Management MAC Configuration present field shall be set to 0" and in line 11 remove "Management PHY Configuration, Management MAC Configuration" | ReviseThere is interest in allowing modification to the management PHY in the short term. Agree that MAC config is not changed in the short term. Agree that UWB MMS Mode shall not be switching during ranging and text is added in 10.38.9.3.17 (The Management PHY Configuration field) to this effect. |
| Mickael Maman | 68 | 105 | 10.39.9.12 | 26 | is it interesting to modify Management PHY Configuration and Management MAC Configuration (i.e. Management short term parameters) for each responder for O2M MMS ranging? We should not modify them in One-to-many Poll compact frame. | list of change: Line 7 page 105, add" except that the Management PHY Configuration present field and Management MAC Configuration present field shall be set to 0", in figure 95 remove Management PHY Configuration and Management MAC Configuration, remove line 6 and 7 page 106, add page 106 line 21 " The Management PHY Configuration present field and Management MAC Configuration present field shall be set to 0", in figure 97 remove Management PHY Configuration and Management MAC Configuration and remove line 6 and 7 page 107 | ReviseThere is interest in allowing modification to the management PHY in the short term. Agree that MAC config is not changed in the short term.  |
| Mickael Maman | 70 | 109 | 10.39.9.13 | 7 | Management PHY Configuration and Management MAC Configuration shall not be short term parameters. Then we shall not modify them in One-to-many poll compact frame | list of change: Line 7, add" except that the Management PHY Configuration present field and Management MAC Configuration present field shall be set to 0", in figure 102 remove Management PHY Configuration and Management MAC Configuration, remove line 12 and 13 | ReviseThere is interest in allowing modification to the management PHY in the short term. Agree that MAC config is not changed in the short term.  |
| Mickael Maman | 73 | 110 | 10.39.9.14 | 16 | Management PHY Configuration and Management MAC Configuration shall not be short term parameters. Then we shall not modify them in One-to-many Resp compact frame | list of change: Line 16, add" except that the Management PHY Configuration present field and Management MAC Configuration present field shall be set to 0", in figure 105 remove Management PHY Configuration and Management MAC Configuration. | ReviseThere is interest in allowing modification to the management PHY in the short term. Agree that MAC config is not changed in the short term. |

**Discussion**









There is interest in allowing short term modifications to the Management PHY configs and the Ranging MAC and PHY configs and recommend to keep them as short term operating parameters. We agree that changing the UWB MMS Mode using short term operating parameters should not be allowed. As for the Management MAC Configuration field, since it is related to the block structure, we agree to disallow related short term modifications.

**10.38.9.3.17 The Management PHY Configuration field**

***Modify the subclause as follows (Track changes ON)***

…

The Control Phase Config field specifies the PHY layer modulation for the MMS control phase. Control

Phase Config field values 1 to 8 select a modulation mode from Table 58 (also numbered 1 to 8), value 14

selects UWB modulation according to set #1 from Table 74, while the value 15 selects UWB modulation

according to set #2 from Table 74. All other Control Phase Config field values are reserved.

The Report Phase Config field specifies the PHY layer modulation for the MMS report phase. Report Phase

Config field values 1 to 8 select a modulation mode from Table 58, value 14 selects UWB modulation

according to set #1 from Table 74, while the value 15 selects UWB modulation according to set #2 from

Table 74. All other Report Phase Config field values are reserved.

When UWB modulation is selected for the control and/or the report phase, the preamble code index used

for these UWB packets is based on the Sequence Code Index field as carried in the Ranging PHY

Configuration field defined in 10.38.9.3.10. Sequence Code Index field values 25 to 32, directly indicate

the UWB packet preamble code index, while for Sequence Code Index field values 33 to 48, the UWB

packet code index is selected by the expression: 25 + (Sequence Code Index field value - 1) modulo 8, i.e.,

selecting one of the length-91 ternary codes from Table 16-9.

When the Management PHY Configuration field is included in Compact frames other than the Start of Ranging Compact frame, the PHY layer modulation selected for the control and/or the report phase shall match the PHY used for the current UWB MMS Mode.

NOTE – Changing the UWB MMS Mode using short term operating parameters is not allowed.