**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 -- CIDs 174, 471, 472** |
| 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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# CID 174, 471, 472

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| **Name** | **Index #** | **Page** | **Sub-clause** | **Line #** | **Comment** | **Proposed Change** |
| MAMAN, MICKAEL | 174 | 84 | 10.39.8.4.1 | 10 | the channel switching mechanism dynamically switch among the coordinated channels on each successive ranging round but not block. | change "block" by "round" |
| VERSO, BILLY | 471 | 84 | 10.39.8.4 | 3 | I don't think it is clear where the channel switch occurs, i.e., it seems to be once per ranging block, but what happens when there are multiple ranging rounds involving same or different devices. Initiator may use different rounds to range to different responders, if the switch only happens per block does the initiator and all the responders stay on the same NB channel for the whole block? | This should be clarified, i.e. stated whether the initiator & multiple responders stay on same channel for the possible multiple ranging rounds and sub-rounds in single ranging block in one to many cases, interleaved and not, or if they switch for each interaction. Ideally some example figures should be added to clarify it. |
| VERSO, BILLY | 472 | 85 | 10.39.8.4.3 | 5 | This is only talking about one initiator and one responder, the other cases should be included too... is there one seed for all nodes in a group so they all follow the hopping, or separate pair for each par of communicating devices. This is complex to specify correctly, and is probably in the domain of the NHL anyway (which knows what is going) to correctly set phyCurrentChannelInfo for the next message it wants to TX or RX. | Probably good to also capture the general operation of switching protocol in these more complex cases. |

Discussion: This paragraph has been written for one-to-one ranging, where only one round per block is used for a ranging exchanged. Since round numbers are not unique, the channel switching function would not be able to pick more channels than the number of rounds per block, which would be well below 250 in most cases. If a specific non one-to-many ranging mode needs a different channel switching function then a change should/can be proposed against that section. The section referenced here is clearly assigning each block a channel number. We can add a note to clarify that in case of O2M ranging, the initiator may assign different channels to different responders.

Proposed resolution: Revised.

Disposition detail: Instruction to editor: Change the text as follows:

**0.39.8.4 Channel switching**

**10.39.8.4.1 Overview**

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 10.39.8.4.2 is used to coordinate a set of channels that may be

used by the initiator and the responder for channel access, and 10.39.8.4.3 specifies the mechanism to

dynamically switch among the coordinated channels on each successive ranging block. In case of one-to-many ranging, the initiator may use the same, or different values for mmsMacPrngSeed values for each of the responders. 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 10.39.4.1. 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 10.39.4.1.

Channel switching is optional and can be disabled by only allowing a single channel in the NB Channel Map

in the ranging session configuration.