IEEE P802.11
Wireless LANs

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| Comment resolutions for miscellaneous comments |
| Date: 2019-11-01 |
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Abstract

This submission proposes resolutions for multiple comments related to TGba D2.0 with the following CIDs (6 CIDs):

* 4043, 4079, 4081, 4129, 4136, 4137

Revisions:

* Rev 0: Initial version of the document.
* Rev 1: Incorporates suggestions and addresses comments received via e-mail from Po-Kai, Rojan, and Younsong. Changes highlighted in green.
* Rev 2: Incorporates further suggestions receveive via e-mail from Po-Kai. Changes highlighted in this color.

Interpretation of a Motion to Adopt

A motion to approve this submission means that the editing instructions and any changed or added material are actioned in the TGba Draft. This introduction is not part of the adopted material.

***Editing instructions formatted like this are intended to be copied into the TGba Draft (i.e. they are instructions to the 802.11 editor on how to merge the text with the baseline documents).***

***TGba Editor: Editing instructions preceded by “TGba Editor” are instructions to the TGba editor to modify existing material in the TGba draft. As a result of adopting the changes, the TGba editor will execute the instructions rather than copy them to the TGba Draft.***

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| **CID** | **Commenter** | **P.L** | **Comment** | **Proposed Change** | **Resolution** |
| 4043 | Joseph Levy | 106.50 | Doze state is a defined PS state, that is defined as the state in which the "STA is not able to transmit or receive and consumes very low power.) (see 11.2.1) It is note defined as a state in WUR mode and hence should not be used to define WUR mode behavior especially for a state that allows the STA to receive WUR PPDUs. | Replace "doze state (see 11.2.1 (General))" with "WUR mode" | Revised –Agree in principle with the comment. Proposed resolution fixes the inconsistency by specifying that the STA should discards a WUR frame if any of the conditions listed below is satisfied. And this does not depend on the state of the STA but rather on the properties of the received WUR frames.TGba editor to make the changes shown in 11-19/1821r2 under all headings that include CID 4043. |
| 4079 | Robert Stacey | 23.14 | The abbreviations FL and VL are used as adjectives and are specific to WUR frames. They are not used in any other context and thus do not need to be in the acronyms section. | Remove definitions for FL and VL. | Rejected –The comment fails to identify a technical issue. Abbreviations are added in order to avoid repeating multiple times the long version of the term in the same context. Their additions were added to satisfy previous comments that were asking for them in prior letter ballots. |
| 4081 | Robert Stacey | 75.36 | Fixed-length vs Variable-length is a misnomer. For example, the WUR Discover frame has a fixed length, but is classified as "variable-length". It seems the FL/VL distinction only really matters for the WUR Wake-up frame. Instead of making a general distinction on WUR frames, make a specific distinction of WUR Wake-up frames. | Delete statement at 75.36.As the first sentence in 9.10.3.2, add a statement: "The WUR Wake-up frame has two variants: the FL WUR Wake-up frame and VL WUR Wake-up frame. In the FL WUR Wake-up frame, the Frame Body field is not present and the frame has a fixed length. In the VL WUR Wake-up frame, the Frame Body is present and has a variable length."At 79.42, change to "The Length Present subfield is set to 0 in an FL WUR Wake-up frame and set to 1 in a VL WUR Wake-up frame." | Rejected –FL identifies a WUR frame whose Length present field is 0 while VL identifies a WUR frame whose length present field is 1. Other examples of WUR frames that are FL frames is the WUR Beacon, and as such it does not apply only to WUR Wake Up frames. As for the WUR Discovery frame please note that the Length Present field is still set to 1 and as such it is under the VL category. |
| 4129 | Yonggang Fang | 21.44 | In the clause 29.5.3, it defines that a transmitter ID identifies the WUR AP transmitting the WUR frame. Please clarify and simplify Transmitter ID in the definition to be consistent within the spec. | As indicated in the comment | Revised –Agree in principle with the comment. Proposed resolution fixes the inconsistency.TGba editor to make the changes shown in 11-19/1821r2 under all headings that include CID 4129. |
| 4136 | Yongho Seok | 107.21 | "A WUR AP shall verify that each identifier is either a transmitter ID (see 29.5.3 (Transmitter ID)), a WURgroup ID (see 29.5.4 (WUR Group ID)), a WUR ID (see 29.5.5 (WUR ID)), a nontransmitter ID (see 29.5.6(Nontransmitter ID)) or a portion of the OUI (see 9.10.3.4 (WUR Vendor Specific frame format))."This sentence is very unclear. What does the WUR AP verify?Is this for verifying an identifier of the transmitting WUR frames? Is this for verifying an identifier of the receiving WUR frames?For both case, I don't think that this verification is necessary. | Please don't add the unnecessary shall statement.Remove the cited sentence or roll back to the previous sentence in D3.0. | Revised –The requirement is to ensure that the AP does not assign the same ID for multiple identifiers, causing useless wake ups of STAs that are not intended to be woken up. Proposed resolution replaces verify with ensure to capture this.TGba editor to make the changes shown in 11-19/1821r2 under all headings that include CID 4136. |
| 4137 | Yongho Seok | 107.29 | "A WUR non-AP STA maintains a list of multiple IDs and may process a WUR frame that contains any ofthese IDs."Please clarify the condition when the WUR non-AP STA maintains a list of multiple IDs.Also, the WUR AP STA does not maintain a list of multiple IDs?And, what does it mean to process a WUR frame?I think that this sentence does not have any meaningful information. | Please clarify the sentence or remove the cited sentence. | Revised –Agree in principle with the comment and providing the following responses to each of the queries:1. Added condition that the STA maintains the list if it enters the WUR mode or WUR mode suspend
2. A WUR AP also maintains a list of IDs, and this was clarified in the paragraph preceding this one
3. Clarified that process means is configured to receive one or more WUR frames when in WUR awake state.

TGba editor to make the changes shown in 11-19/1821r2 under all headings that include CID 4137. |

**Discussion: *None.***

* **WUR frame processing**

**TGba Editor: *Change the paragraphs below of this subclause as follows (#CID 4043):***

If the PHY of a WUR non-AP STA issues a PHY-RXSTART.indication due to a WUR PPDU reception, then the MAC sublayer of the WUR non-AP STA should discard a WUR frame contained in the WUR PPDU once the WUR frame satisfiesany of the following:*(#4043)* (#Ed, #3123)

* The Type subfield of a WUR frame with a value that is not supported by the WUR non-AP STA
* The Length Present subfield of a WUR frame with a value that is not supported by the WUR non-AP STA
* The Protected subfield of a WUR frame with a value that is not supported by the WUR non-AP STA
* The ID subfield of a WUR frame with a value that is not maintained by the WUR non-AP STA (see 29.5.1 (General))
* A STA Info field of a VL WUR Wake-up frame where the WUR ID field of the STA Info field is greater than the WUR ID assigned to the WUR non-AP STA and none of the WUR ID field in the previous STA Info fields contains the WUR ID assigned to the WUR non-AP STA (see 29.9.2 (WUR AP operation))
* The last STA Info field of a VL WUR Wake-up frame where the WUR ID field of the STA Info field is less than the WUR ID assigned to the WUR non-AP STA (see 30.8.2 WUR AP Operation)

NOTE —A WUR non-AP STA that encounters a field or a subfield that is reserved ignores that field as described in 9.2.2 (Conventions). *(#4043)* (#Ed, #3123)

**3.2 Definitions specific to IEEE Std 802.11**

**TGba Editor: *Change the paragraphs below of this subclause as follows (#CID 4129):***

**transmitter identifier (ID):** An identifier that identifies a wake-up radio (WUR) access point (AP) and used in broadcast addressed WUR frames that are addressed to all WUR non-AP stations (STAs) associated with the WUR AP when multiple BSSID operation is not supported or that are addressed to all WUR non-AP STAs associated with the transmitted basic service set identifier (BSSID) of a multiple BSSID set when multiple BSSID operation is supported or that are addressed to all WUR non-AP STAs that intend to discover or synchronize with the WUR AP.*(#4129)*

* **Setting the identifiers of WUR frames**
* **General**

The ID field of WUR frames contains an identifier (ID) that is selected from the identifier’s space, which consists of all integer values between 0 and 4095 (see 9.10.2.2 (ID field)).

**TGba Editor: *Change the paragraphs below of this subclause as follows (#CID 4136, 4137):***

A WUR AP maintains a list of multiple IDs and shall ensure that each ID that is included in a transmitted WUR frame is either a transmitter ID (see 29.5.3 (Transmitter ID)), a WUR group ID (see 29.5.4 (WUR Group ID)), a WUR ID (see 29.5.5 (WUR ID)), a nontransmitter ID (see 29.5.6 (Nontransmitter ID)) or a portion of the OUI (see 9.10.3.4 (WUR Vendor Specific frame format)).*(#4136, 4137)*(#3078)

NOTE—A WUR AP might dynamically change the identifiers used within the WUR BSS sporadically and randomly to provide a certain degree of security and privacy.

A WUR non-AP STA, which is in WUR mode or in WUR mode suspend, maintains a list of multiple IDs and is configured to receive one or more WUR frames that contain any of these IDs when the STA is in WUR awake state.*(#4137)* (#3099)

The list of IDs maintained by the WUR non-AP STA includes:

* A WUR ID for individually addressed FL WUR Wake-up frames.
* A transmitter ID for WUR Beacon, WUR Discovery frames, and for broadcast addressed WUR Wake-up frames sent by the AP corresponding to the transmitted BSSID.
* A nontransmitter ID for broadcast addressed WUR Wake up frames sent by the AP corresponding to the nontransmitted BSSID.
* A set containing zero or more instances of 12 LSBs of an OUI for WUR Vendor Specific frames.
* A set containing zero or more instances of a group ID for group addressed FL WUR frames and for VL WUR Wake-up frames.