IEEE P802.11  
Wireless LANs

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Comment resolutions for Miscellaneous CIDs | | | | |
| Date: 2020-05-17 | | | | |
| Author(s): | | | | |
| Name | Affiliation | Address | Phone | email |
| Alfred Asterjadhi | Qualcomm Inc. | 5775 Morehouse Dr, San Diego, CA 92109 | +1-858-658-5302 | aasterja@qti.qualcomm.com |

Abstract

This submission proposes resolutions for multiple comments related to TGba D6.0 with the following CIDs (15 CIDs):

* 7007, 7008, 7015, 7022, 7028, 7030, 7031, 7032, 7046, 7047,
* 7048, 7090, 7091, 7114, 7117.

Revisions:

* Rev 0: Initial version of the document.

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.***

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **CID** | **Commenter** | **P.L** | **Comment** | **Proposed Change** | **Resolution** |
| 7007 | Rolfe, Benjamin | 106.61 | NOTE 1 …well I am not at all sure. The above conditions are conditions on which the frame SHOULD be rejected; so if a frame is not rejected, it is processed according to the rules defined in this clause (again referencing itself)? Why even state that? It's a backwards and confusing way to state what is obvious from the title of the subclause. It is also clear that some of the listed conditions make it impossible to process the WUR frame according to this subclause, e.g. how does a STA process a frame with an unrecognized Type, or a protection that is not supported, other than drop the frame? Use of "should" allows processing which is not defined. It would be more clear stated as a positive, i.e. state the necessary conditions to process the frame: it has a recognized type, etc. And be clear what happens if those conditions are not met (“it shall be ignored” or “the handling of the frame is not defined by this standard”). | Remove Note 1. Re-write the paragraph and enumerated list as conditions required for the frame to be processed according to the processing defend in this clause. See comment for suggestions. | Revised –  Processing of a WUR frame that is recognized (or of interest) by the STA is described in other subclauses. The purpose of this note is to speciy that if the WUR frame does not satisfy these conditions (satisfying of which would lead the STA to discard the frame) then the STA follows the rules in the other subclauses (several of them, depending on the type of the WUR frame). Proposed resolution is to re-title the subclause “Discarding a WUR frame” to avoid confusion by current title which generically refers to the processing of the WUR frame.  TGba editor to make the changes shown in 11-19/0776r0 under all headings that include CID 7007. |
| 7008 | Rolfe, Benjamin | 82.17 | The Vendor specific frame does not fit the scope of the PAR, which states "The wake-up frames carry only control information."; this frame can carry other than control information, as the content is out of scope of the standard (as clearly stated), thus there is no assurance possible that it contains only control information. | Remove 9.10.3.5 and all references to the frame. Alternately, amend the PAR scope to remove the prohibition on non-control information in a WUR frame. | Revised –  Proposed resolution is to specify that this information is vendor specific control information.  TGba editor to make the changes shown in 11-19/0776r0 under all headings that include CID 7008. |
| 7015 | Fang, Yonggang | 79.36 | Does WUR Wake-up frame format contain a FCS field? If yes, please add a sentence for including FCS field. Otherwise, please clearly indicate that the WUR Wake-up frame format does not include FCS field. | As indicated in the comment. | Revised –  Agree with comment. Proposed resolution adds the requested sentence.  TGba editor to make the changes shown in 11-19/0776r0 under all headings that include CID 7015. |
| 7022 | Adachi, Tomoko | 51.19 | The relation between Fig. 9-1009a and Fig.s 9-2 and 9-961 is not clear. Some kind of description is required. And it may be good to mention how the Protocol Version is handled for Fig. 9-1009a. Eg. "In 2.4 and 5 GHz bands, other than Fig. 9-2, Fig. 9-1009a is used for WUR operation. Although Fig. 9-1009a does not carry the Procotol Version subfield, it is treated as a PV0 frame." | As in comment. | Rejected –  There is no relation between the MPDU frame format and the WUR frame format, as such there is no relation between the figures either. Also the WUR frame is not treated as PV0 frame because this terminology (PV0 vs PV1) is only applicable to MPDU frame formats rather than WUR frame formats. |
| 7028 | Adachi, Tomoko | 76.42 | "The Miscellaneous subfield is reserved in all FL WUR frames except for \*broadcast\* WUR Wake-up frames as defined in 9.10.3.2 (WUR Wake-up frame format)." By reading 9.10.3.2, it should be broadcast and group addressed WUR Wake-up frames. Or if group addressed frames include broadcast frames by definition, then it should be group addressed WUR Wake-up frames. | As in comment. | Revised –  Agree in principle with the comment. Proposed resolution clarifies that it applies to group addressed WUR frames as well.  TGba editor to make the changes shown in 11-19/0776r0 under all headings that include CID 7028. |
| 7030 | Adachi, Tomoko | 78.18 | Whether the Embedded BSSID field is present in the calculation fields is described for a WUR Beacon, WUR Wake-up, WUR Discovery, and WUR Vendor Specific frames in this paragraph. How about for a WUR Short Wake-up frame? | Clarify. | Revised –  Agree in principle with the comment. Proposed resolution clarifies that it is present.  TGba editor to make the changes shown in 11-19/0776r0 under all headings that include CID 7030. |
| 7031 | Adachi, Tomoko | 80.40 | "broadcast or group addressed FL", "broadcast not group addressed" From the definitions in REVmd D3.0, I see "broadcast address: A unique group address that specifies all stations (STAs)." and "that has a group address as its destination address (DA). A group addressed MAC protocol data unit (MPDU) is an MPDU that has a group address in its Address 1 field. Syn: multicast." Furthermore, in 9.2.4.3.3, both multicast and broadcast addresses are treated as group address. My interpretation is that, whenever the Individual/Group bit is set to 1, including the broadcast case, the address is group address. So, I think group address will cover the broadcast case. | Change "broadcast or group addressed FL WUR Wake-up frame" in pp.ll 80.40 to "group addressed FL WUR Wake-up frame". Change "that are neither broadcast nor group addressed" in pp.ll 80.42 to "that are not grou addressed". | Rejected –  The cited definitions relate to baseline, while the definitions of broadcast and group addressed WUR frames are provided in subclause 3.2, and they specify clearly the differentiation between the two identifiers. No further changes are needed. |
| 7032 | Adachi, Tomoko | 80.59 | "corresponding to the BSSID indicated in the ID field" Can it be transmitter ID and nontransmitter ID? There is no BSSID in Table 9-541b. The description should refer to the same terms listed in Table 9-541b. | As in comment. | Revised –  it can be either. And agree that there is no BSSID. Proposed resolution is to specify the identifier of the BSSID.  TGba editor to make the changes shown in 11-19/0776r0 under all headings that include CID 7032. |
| 7046 | Lepp, James | 107.19 | Rewrite second sentence of the third paragraph. Current sentence doesn't describe the action when receiving the frame well, and is only included duty cycle operation, not non-duty-cycle operation. | A WUR non-AP STA, which is in WUR mode or in WUR mode suspend, maintains a list of multiple IDs. A WUR non-AP STA is configured to wake-up when it receive one or more WUR Wake-up frames that contain any of these IDs. The WUR STA is required to receive WUR wake-up frames when the WUR power state of the WUR non-AP STA is in the WUR awake state either because it is not using WUR duty cycle operation and on all the time, or it is using WUR duty cycle operation as defined in 29.7. | Revised –  Agree that the sentence is not clear. Proposed resolution simplifies the sentence to make it clearer.  TGba editor to make the changes shown in 11-19/0776r0 under all headings that include CID 7046. |
| 7047 | Lepp, James | 106.25 | Bullet list in 29.5.1 takes into account FL WUR Wake-up frames and VL WUR Wake-up frames but neglects to include details about Short WUR Wake-up frames. | Clarify IDs for use in short WUR Wakeup frames. A venn diagram describing the relationship of the terms "VL WUR Wake-up Frame, FL WUR Wake-up Frame and Short WUR Wake-up Frame" may also be helpful in this document. | Revised –  Agree in pricinple. Proposed resolution is to specify that the WUR ID also applies to the Short WUR Wake UP frames.  TGba editor to make the changes shown in 11-19/0776r0 under all headings that include CID 7047. |
| 7048 | Lepp, James | 107.38 | Is the description of compressed BSSID clear enough to enable interoperable implementations? Would a Test Vector for this operation be useful to implementers? - the question is "is a Short WUR Wake-up frame a FL WUR Wake-up Frame?" |  | Rejected –  The commenter is asking a question. The text is specific enough for interoperability and compliance. There are not enough details in the comment that would identify any interoperability or compliance issues. And a Short WUR Wake Up frame is not a FL WUR Wake Up frame since it is shorter than those frames. |
| 7090 | Wang, Xiaofei | 21.31 | The value of the "ID field" is equal to transmitter ID or nontransmitter ID, not the field itself. | Change the definition to "A WUR Wake-up frame with its ID field set to a  transmitter identifier (ID) or a nontransmitter ID." | Revised –  Agree with and incorporated with minor editorial change.  TGba editor to make the changes shown in 11-19/0776r0 under all headings that include CID 7090. |
| 7091 | Wang, Xiaofei | 21.39 | The value of the "ID field" is equal to transmitter ID or nontransmitter ID, not the field itself. | Change the definition to "A WUR Wake-up frame with its ID field set to a  group identifier (ID)." | Revised –  Agree with and incorporated with minor editorial change.  TGba editor to make the changes shown in 11-19/0776r0 under all headings that include CID 7091. |
| 7114 | Hamilton, Mark | 120.52 | "A WUR AP that generates a VL WUR Wake-up frame with one or more STA Info fields shall order the STA Info fields in the Frame Body field so that the WUR IDs appear in increasing order." This needs to be "more than one", since a frame with only one STA Info field doesn't have an "order" to define. | Change "one or more" to "two or more". | Accepted |
| 7117 | Hamilton, Mark | 75.36 | The term "FL WUR [Wake-up] frame" is not intended to include a WUR Short Wake-up frame. However, per 4.3.15b, a "WUR frame" includes a WUR Short Wake-up frame. So, in 9.10.2.1 where it says, "A WUR frame that does not have a Frame Body field is referred to as a FL WUR frame." this would apply to a WUR Short Wake-up frame. | Insert "(except WUR Short Wake-up frame)" after "that does not have a Frame Body field" | Accepted |

**Discussion: *None.***

**TGba Editor: *Change the paragraphs below of this subclause as follows (#CID 7007):***

29.4 Discarding a WUR frame *(#7007)*

**9.10.2.1 General**

**TGba Editor: *Change the paragraphs below of this subclause as follows (#CID 7117):***

A WUR frame that does not have a Frame Body field (except WUR Short Wake-up frame) is referred to as a FL WUR frame. A WUR frame that has a Frame Body field is referred to as a VL WUR frame. *(#7117)*

The FCS field is defined in 9.10.2.4 (Frame Check Sequence (FCS) field).

**9.10.3.4 WUR Vendor Specific frame format**

**TGba Editor: *Change the paragraphs below of this subclause as follows (#CID 7008):***

If the Frame Body Present subfield in the Frame Control field is set to 0, then the Length/Miscellaneous sub­field contains vendor specific control information that is outside the scope of the standard.*(#7008)*

**9.10.3.2 WUR Wake-up frame format**

NOTE—A broadcast WUR Wake-up frame is always a FL WUR Wake-up frame.

**TGba Editor: *Change the paragraph below of this subclause as follows (#CID 7032):***

The Group Addressed BU subfield is set to 1 to indicate that one or more group addressed frames are buff­ered at the AP corresponding to the identifier of the BSSID indicated in the ID field. Otherwise, the Group Addressed BU subfield is set to 0. The Group Addressed BU subfield is reserved in a group addressed FL WUR Wake-up frame. *(#7032)*

**TGba Editor: *Insert the paragraph below at the end of this subclause as follows (#CID 7015):***

The FCS field contains a CRC when the Protected field is equal to 0 and a MIC when the Protected field is equal to 1 (see 9.10.2.4 (Frame Check Sequence (FCS) field)).*(#7015)*

**9.10.2.2.1 Frame Control field**

**TGba Editor: *Change the paragraph below of this subclause as follows (#CID 7028):***

The Miscellaneous subfield is reserved in all FL WUR frames except for broadcast and group addressed WUR Wake-up frames as defined in 9.10.3.2 (WUR Wake-up frame format). *(#7028)*

**9.10.2.4.2 Cyclic Redundancy Check (CRC) for WUR frames**

**TGba Editor: *Change the paragraphs below of this subclause as follows (#CID 7030):***

The Embedded BSSID field is present in the *calculation fields* of a WUR Beacon frame and of a (Short) WUR Wake-up frame. The Embedded BSSID field is not present in the *calculation fields* of a WUR Discovery frame. Whether the Embedded BSSID field is present or not in the *calculation fields* of a WUR Vendor Spe­cific frame is vendor specific.*(#7030)*

**29.9.3 WUR AP operation**

**TGba Editor: *Change the paragraphs below of this subclause as follows (#CID 7114):***

A WUR AP that generates a VL WUR Wake-up frame with two or more STA Info fields shall order the STA Info fields in the Frame Body field so that the WUR IDs appear in increasing order. The WUR AP shall not include the WUR ID of a WUR non-AP STA that does not support reception of VL WUR frames. (see 9.4.2.289 (WUR Capabilities element)). *(#7114)*

**3.2 Definitions specific to IEEE Std 802.11**

**TGba Editor: *Change the paragraphs below of this subclause as follows (#CID 7090, 7091):***

**broadcast wake-up radio (WUR) wake-up frame:** A WUR Wake-up frame with ID field equal to transmitter identifier (ID) or nontransmitter ID. *(#7090)*

**group addressed wake-up radio (WUR) wake-up frame:** A WUR Wake-up frame with the ID field set to group identifier (ID).*(#7091)*

**29.5.1 General**

**TGba Editor: *Change the paragraphs below of this subclause as follows (#CID 7046):***

A WUR non-AP STA, which is in WUR mode or in WUR mode suspend, maintains a list of multiple IDs. A WUR non-AP STA is configured to receive one or more WUR frames that contain any of these IDs when the WUR WUR non-AP STA is in the WUR awake state. *(#7046)*

**29.5.1 General**

**TGba Editor: *Change the paragraphs below of this subclause as follows (#CID 7047):***

—A WUR ID for individually addressed FL WUR Wake-up and Short WUR Wake Up frames. *(#7047)*

—A transmitter ID for WUR Beacon, WUR Discovery frames, and for broadcast WUR Wake-up frames sent by the AP corresponding to the transmitted BSSID.

—A nontransmitter ID for broadcast 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.