IEEE P802.11
Wireless LANs

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| Comment resolutions for 9.10.3.2 |
| Date: 2018-11-01 |
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Abstract

This submission proposes resolutions for multiple comments related to TGba D1.0 with the following CIDs (34 CIDs):

* 29, 30, 31, 89, 293, 294, 295, 388, 389, 390,
* 391, 401, 459, 525, 526, 541,637, 717, 718, 719,
* 787, 788, 789, 790, 883, 945, 1025, 1026, 1074, 1120,
* 1122, 1169, 1170, 1238

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.***

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| --- | --- | --- | --- | --- | --- |
| **CID** | **Commenter** | **P.L** | **Comment** | **Proposed Change** | **Resolution** |
| 29 | Albert Petrick | 43.56 | the term critical update is referenced for the PCR's BSS parameters. The term "critical" is ambiguous |  | Revised –The term “critical” is consistently used throught the baseline draft. E.g., please refer to 10.47.2 (System information update procedure). Proposed resolution is to provide a reference to the subclause that provides the normative behavior related to this counter.TGba editor to make the changes shown in 11-18/1834r0 under all headings that include CID 29. |
| 30 | Albert Petrick | 43.54 | The BSS Update field is defined to be initialized to 0. The text doesn't what causes the counter initialize and what occurs if the counter is at max value. Does it trigger another event? |  | Revised –Normative behavior in 31.7.2 (AP operation) should provide this type of detail. Added a reference to that subclause. TGba editor to make the changes shown in 11-18/1834r0 under all headings that include CID 30. |
| 31 | Albert Petrick | 43.35 | A set of criteria is established for setting the Address field of the WUR Wake-Up frame. 0 is set for multiple WIDs. The term "multiple" should be expanded to state 2 or more WIDs, |  | Revised –Proposed resolution removes that bullet since the frame format o the Frame Body field is already clearly defined in the paragraphs that follow.TGba editor to make the changes shown in 11-18/1834r0 under all headings that include CID 31. |
| 89 | Alfred Asterjadhi | 43.35 | Value 0 means that all WUR STAs need to decode this frame independently of which BSS is coming from. So early drop is not possible. Please find another means of signaling this particular WUR Wake up version. | As in comment. | Revised –Found another way to signal this type of frame as suggested by several other CIDs, using the transmit ID.TGba editor to make the changes shown in 11-18/1834r0 under all headings that include CID 89. |
| 293 | Ganesh Venkatesan | 43.19 | Protected bit setting is buried within the description of the Counter subfield of the TD field. Describe the Protected bit setting explicitly. | Add that the Protected subfield is set to 0 if the WUR Wake-up frame is broadcast or unprotected; and is set to 1 if the WUR Wake-up frame is protected. | Rejected –The setting of the Protected field is already defined in 9.10.2.1.1 (Frame Control field), which applies in general. These two paragrapsh provide the conditions as to what the TD control field carries depending on the setting of the protected field and the frame being broadcast or not. |
| 294 | Ganesh Venkatesan | 43.00 | The description of the Counter subfield is misleading -- there are three options for the Counter subfield setting and the Counter subfield is set based on which of the three options apply. | Add an 'or' between the first and the second bullets describing the Counter subfield. The same comment applies for the Sequence Number subfield as well. | Accepted |
| 295 | Ganesh Venkatesan | 44.03 | "The TSF timer is obtained as defined in 31.4.1 (General)," What is obtained is the value of the TSF Timer. | Replace with "The TSF timer value is obtained as defined in 31.4.1 (General)," | Revised –Agree in principle with the comment. The sentence however is removed and fixed reference to mention the correct subclause 31.8.3.1.TGba editor to make the changes shown in 11-18/1834r0 under all headings that include CID 295. |
| 388 | James Lepp | 43.19 | WUR Wake-up frame is a reduntant acronym that can be confusing. Need a new name for this type of frame. |  | Revised –How about we call it WUR Waking frame? Other acronyms are welcome.TGba editor: “Replace WUR Wake-up” with “WUR Waking” throughout the draft.  |
| 389 | James Lepp | 43.54 | When it says broadcasted do you mean broadcast addressed? | If the WUR Wake-up frame is broadcast addressed the Counter field contains the BSS Update Counter Field.The BSS Update Counter field is defined as an unsigned integer initialized to 0, that increments when a critical update to the PCR's BSS parameters has occurred.If the WUR Wake-up frame is individually addressed the Counter field contains the 4 least significant bits of the PPN (see 31.8 (Protected WUR frames)). | Revised –Agree in principle. Accoutned fo the change. TGba editor to make the changes shown in 11-18/1834r0 under all headings that include CID 389. |
| 390 | James Lepp | 43.28 | When it says broadcast addressed and group addressed, is this address based on the address of the PCR frame queued at the AP that caused the AP to send this particular WUR Wake-up frame? If this is true please explain that. | clarify | Revised –Agree in principle. Accoutned fo the change. TGba editor to make the changes shown in 11-18/1834r0 under all headings that include CID 390. |
| 391 | James Lepp | 44.01 | Contains the partial TSF timer |  | Rejected –Since we are indicating that it contains the bits from 9 to 16 it is already clear that it is a partial TSF timer. Keeping the same to avoid redundancy. |
| 401 | James Lepp | 43.29 | How does the receiver of a WUR frame determine which of the 4 IDs is present in the Address field when it receives a WUR Wake-up frame? | Explicitly state that Individual and group address share a sincel 12-bit namespace with the "all zeros" case is a reserved value. And that seperately transmit ID is indicated by the Frame Type =0. | Revised –The rules are defined in subclause 31.3 where it should be specified that these identifiers do not overlap with each other. And removed the pathological case of value 0 from the list.TGba editor to make the changes shown in 11-18/1834r0 under all headings that include CID 401. |
| 459 | John Buffington | 43.34 | "WID" needs to be defined | The first use of "WID" needs to be defined or added to section 3.4. | Revised –Agree in principle. Though WID is proposed to be removed and adding the acronym for its sibling “WUR ID”.TGba editor to make the changes shown in 11-18/1834r0 under all headings that include CID 459. |
| 525 | Lei Huang | 43.27 | It is better to explicitly mention in the standard that "The Frame Body field is not present in the broadcsat WUR Wake-up frame." | as per comment | Revised –Agree with comment. Added classifier that this setting of the address fields is for minimum length (now fixed length) WUR Wake up frames, separating from the VL WUR Wake up frame counter part. TGba editor to make the changes shown in 11-18/1834r0 under all headings that include CID 525. |
| 526 | Lei Huang | 43.27 | It is better to explicitly mention in the standard that "The Frame Body field is not present in the unicast WUR Wake-up frame." | as per comment | Revised –Agree with comment. Added classifier that this setting of the address fields is for minimum length (now fixed length) WUR Wake up frames, separating from the VL WUR Wake up frame counter part. TGba editor to make the changes shown in 11-18/1834r0 under all headings that include CID 526. |
| 541 | Leif Wilhelmsson | 43.30 | period missing (to be cosistent with e.g. how things are written on page 21. | add a period | Accepted |
| 637 | Michael Fischer | 43.55 | Include reference to the place where "critical update ..." is defined (clause 31.7.2). | Add cross-reference (something like "as specified in clause 31.7.2") after "... when a critical update ..." | Revised –Proposed resolution is to provide a reference to the subclause that provides the normative behavior related to this counter as suggested by the commenter.TGba editor to make the changes shown in 11-18/1834r0 under all headings that include CID 637. |
| 717 | Minyoung Park | 43.35 | The WUR Wake-up frame can be individually addressed, group addressed, and broadcast addressed by setting the Address field to WID, group ID, and transmit ID, which is clear. The following description "0 when multiple WIDs are included in the Frame Body field of the frame" is not that clear what type of WUR Wake-up frame this is. This sentence should be replaced to "0 when the frame is addressed to a group of WUR non-AP STAs with WIDs listed in the Frame Body field." This type of WUR Wake-up frame should be named as "multi-WID Wake-up frame." | As shown in the comment. | Revised –Agree in principle, although proposed resolution is to use transmit ID instead of value 0 to identify these frames. And specified that these are the VL WUR wake up frames for terminology consistency.TGba editor to make the changes shown in 11-18/1834r0 under all headings that include CID 717. |
| 718 | Minyoung Park | 43.24 | The WUR Wake-up frame has the Frame Body field only when it is "multi-WID Wake-up frame", which is when the Address field is set to 0 and a list of WIDs are contained in the Frame Body field.Therefore, the following sentence"The Frame Control field is as defined in 9.10.2.1.1 (Frame Control field), with the Length Present subfield set to 1 if the Frame Body field is present and the Length Present subfield set to 0 otherwise."should be replaced to "The Frame Control field is as defined in 9.10.2.1.1 (Frame Control field). The Length Present subfield set to 1 when a list of WIDs are contained in the Frame Body field for the multi-WID WUR Wake-up frame. For the individually addressed WUR Wake-up frame, group addressed WUR Wake-up frame, and broadcast WUR Wake-up frame, the Length Present subfield set to 0." | As shown in the comment. | Revised –In order to keep consistency between the terms the proposed resolution is to clarify that the FL (fixed length WUR Wake up frames, which do not contain a FB) have the possibility of having the Address field to carry individual, group , and broadcast. And specify that the VL WUR Wake Up frame address field contains the transmit ID. This way it is clear that only FL WUR Wake up frames can have Address field with those three types of identifiers. TGba editor to make the changes shown in 11-18/1834r0 under all headings that include CID 718. |
| 719 | Minyoung Park | 44.32 | The following sentence is vague: "The Frame Body field of the WUR Wake-up frame, when present, contains one or more STA Info fields." because the Frame Body field is only present when the Address field is set to 0 for the multi-WID WUR Wake-up frame.Replace this sentence to "The Frame Body field of the WUR Wake-up frame contains one or more STA Info fields if the Address field is set to 0. Otherwise the Frame Body field is not present." | As shown in the comment. | Revised –Agree in principle. Since these are called VL WUR Wake up frames the proposed resolution is to specify that this Frame Body applies to VL WUR wake up frames and that the Frame Body field is not present in FL WUR Wake up frames.TGba editor to make the changes shown in 11-18/1834r0 under all headings that include CID 719. |
| 787 | Osama Aboulmagd | 43.35 | "WID" is not defined. What does it mean? | Add WID to Clause 3. | Revised –Agree in principle. Though WID is proposed to be removed and adding the acronym for its sibling “WUR ID”.TGba editor to make the changes shown in 11-18/1834r0 under all headings that include CID 787. |
| 788 | Osama Aboulmagd | 43.28 | "The Address field of the WUR Wake-up frame is set to" The address field is not set to all the values underneath this sentence. I think the right sentence is "The Address field of the WUR Wake-up frame is set to one of the following values" | as in comment | Revised –Agree in principle. Proposed resolution accounts for the suggested change.TGba editor to make the changes shown in 11-18/1834r0 under all headings that include CID 788. |
| 789 | Osama Aboulmagd | 43.28 | It is not clear how a receiving WUR non-AP STA would differentiate between the different addresses in the table. | as in comment. | Revised –The rules are defined in subclause 31.3 where it should be specified that these identifiers do not overlap with each other. TGba editor to make the changes shown in 11-18/1834r0 under all headings that include CID 789. |
| 790 | Osama Aboulmagd | 44.32 | "The Frame Body field of the WUR Wake-up frame, when present, contains one or more STA Info fields. The format of the STA Info field is defined in Figure 9-963f (STA Info field format)" In this case what is the address type of the wake up frame (Transmitting, WUR ID, or Group ID). Explain. | as in comment | Revised –Agree in principle with the comment. Proposed resolution clarifies that the address is set to the transmit ID.TGba editor to make the changes shown in 11-18/1834r0 under all headings that include CID 790. |
| 883 | Rojan Chitrakar | 13.13 | Presence of Misc field implicitely implies that broadcast WUR Wake-up frames can only be ML WUR frames. Add description to make it explicit. | Add a sentence at the end of paragraph on P43L24 as below:The Length Present field of a broadcast WUR Wake-up frame is set to 0. | Revised –Based on suggestion from other CIDs the proposed resolution is to use the transmit ID to also identify a VL WUR Wake up frame. Proposed resolution is to clarify that this setting of the Misc field is applicable to the ML WUR Wake up frame (which is now called fixed length (FL) WUR Wake-up frame as per suggestions in another document).TGba editor to make the changes shown in 11-18/1834r0 under all headings that include CID 883. |
| 945 | Stephen McCann | 44.13 | The Misc field appears to be missing from the broadcast WUR Wake-up frame in Figure 9-963a | Modify Figure 9-963a to include the Misc field, or clarify the text, for example, does the Misc field belong to another frame? | Rejected –The Misc field is part of the Frame Control field, which is why it does not show in the WUR frame format in Figure 9-963a. It does show though in the Frame Control field format in Figure 9-963b. |
| 1025 | Tomoko Adachi | 43.58 | What is PPN? Describe it in 3.4. | As in comment. | Revised –Agree. PPN stands for partial packet number. Added in the acronyms subclause as suggested.TGba editor to make the changes shown in 11-18/1834r0 under all headings that include CID 1025. |
| 1026 | Tomoko Adachi | 44.38 | Use B12 to indicate the STA after its PCR is awake to operate as an AP.This is useful when considering a case, such as where a PC wakes up a smartphone and have the smartphone start to operate as an AP for tethering.This can be option. In such case, add a bit in WUR Capabilities Information subfield for the AP and the STA to inform the support to each other.Add related description in clause 32. | As in comment. | Rejected –The comment is ambiguous in terms of a STA having double functionality (as a non-AP STA and an AP) and seems to suggest a mode where the two architectures are mixed with each other. The commenter is invited to submit a proposal to better clarify the proposal and the potential benefits. |
| 1074 | Woojin Ahn | 43.35 | Having a fixed address value is not aligned with the design concept of WUR ID space. Furthermore, VL WUF Address 0 requires all WUR STAs including OBSS STAs to check the frame body contents resulting iunnecessary power consumption.A recommedation is to use Transmit ID for the address value. As the Transmit ID provides AP identification, WUR STA can filter out any VL WUF from OBSSs ealier without checking the Frane Body. In addtition, it is reasonable to use Transmit ID considering the definition of Transmit ID, because VL WUR Wake-up frame is a broadcast WUR frame that all WUR STAs within that BSS should receive and check the Frame Body. | Use Transmit ID for the address value of VL WUR Wake-up frame | Revised –There were multiple discussions on whether to use the transmit ID or the WUR ID of the first STA that is the intended receiver of this WUR Wake Up frame. The proposal to use the transmit ID is reasonable and seemed to be preferred by most of the members when a strawpoll asking for the preference was ran. Incoporated the suggested change. TGba editor to make the changes shown in 11-18/1834r0 under all headings that include CID 1074. |
| 1120 | Xiaofei Wang | 43.31 | "group ID" should be "Group ID" | as in comment | Rejected –Since this is not the name of a field or of a frame then it needs not be capitalized. The term “group ID” is consistently used with lower case when referring to the identifier of a group.  |
| 1122 | Xiaofei Wang | 43.34 | why is WID used on L34 and WUR ID is used on L30? The notation should be the same | please use the same notation in the same paragrah of spec text for WUR IDs | Revised –This sentence is redundant. The definition in P44L32 is specifying these tobe WUR IDs, which are already defined. Proposed resolution is to remove the bullet.TGba editor to make the changes shown in 11-18/1834r0 under all headings that include CID 1122. |
| 1169 | yujin noh | 43.35 | define what WIDs are. For example, WID that identifies a non-AP STA.... Clarity what is different from WUR ID being used through draft spec | as in comment | Revised –This sentence is redundant. The definition in P44L32 is specifying these tobe WUR IDs, which are already defined. Proposed resolution is to remove the bullet.TGba editor to make the changes shown in 11-18/1834r0 under all headings that include CID 1169. |
| 1170 | yujin noh | 43.35 | Clarify the meaning of the multiple WIDs. For example, It could mean 1) one or more WIDs or 2) two or more WIDs. | as in comment | Revised –Agree in principle with the comment. Proposed resolution is to remove this bullet since this is already defined in P44L32 where it specifies that the Frame Body field contained one or more STA Info fields. TGba editor to make the changes shown in 11-18/1834r0 under all headings that include CID 1170. |
| 1238 | Yunsong Yang | 44.01 | Missing the condition of "if the WUR Wake-up frame is not broadcasted" | Change "Contains the TSF timer [9: 16] if the WUR Wake-up frame is not broadcasted, the Protected field in the Frame Control field is 1 and the most recently sent WUR Operation element has the Common IPN subfield equal to 1." to "Contains the TSF timer [9: 16] if the WUR Wake-up frame is not broadcasted, the Protected field in the Frame Control field is 1, and the most recently sent WUR Operation element has the Common IPN subfield equal to 1." | Rejected –The condition applies also when the frame is broadcasted. |

**Discussion: *None.***

* WUR Wake-up frame format

The frame format of the WUR Wake-up frame is as defined in Figure 9-963a (WUR frame format).

The Frame Control field is as defined in 9.10.2.1.1 (Frame Control field), with the Length Present subfield set to 1 if the Frame Body field is present and the Length Present subfield set to 0 otherwise.

**TGba Editor: *Change the paragraphs below of this subclause as follows (#CID 1170, 1169, 1122, 1074, 790, 788, 718, 717, 525, 526, 401, 31, 89):***

The Address field of the FL WUR Wake-up frame contains one of the following:

* The WUR ID when the frame is individually addressed
* The group ID when the frame is group addressed
* The transmit ID when the frame is broadcast addressed
* *(#1170, 1169, 1122, 788, 718, 401, 31)*

The Address field of the VL WUR Wake-up frame contains the transmit ID.*(#1074, 790, 717, 525, 526, 89)*

The TD Control field of a WUR Wake-up frame contains the Counter subfield and the Sequence Number subfield as defined in 9-963d (TD Control field of WUR Wake-up frame).

|  |  |  |
| --- | --- | --- |
|  | B0             B3 | B4                   B11 |
|  | Counter | Sequence Number |
| Bits: | 4 | 8 |
| * TD Control field of WUR Wake-up frame
 |

**TGba Editor: *Change the paragraphs below of this subclause as follows (#CID 29, 30, 637, 389):***

The Counter subfield:

* Contains the BSS Update Counter field if the WUR Wake-up frame is broadcast addressed. The BSS Update Counter field is defined as an unsigned integer that increments when a critical update to the PCR’s BSS parameters has occurred (see 31.7.2 (AP operation), or*(#29, 30, 637)*
* Contains the 4 LSBs of the PPN (see 31.8 (Protected WUR frames)) if the WUR Wake-up frame is not broadcast addressed, the Protected field in the Frame Control field is 1, and the most recently sent WUR Operation element has the Common IPN subfield equal to 0, or*(#294, 389)*
* Is reserved otherwise.

**TGba Editor: *Change the paragraphs below of this subclause as follows (#CID 295. 390):***

The Sequence Number subfield:

* Contains the TSF timer [9: 16] if the Protected field in the Frame Control field is 1 and the most recently sent WUR Operation element has the Common IPN subfield equal to 1 (see 31.8.3.1 (Generation of the IPN by a WUR AP), or*(#295, 390)*
* Contains the 8 MSBs of the PPN (see 31.8 (Protected WUR frames)) if the WUR Wake-up frame is not broadcast addressed, the Protected field in the Frame Control field is 1, and the most recently sent WUR Operation element has the Common IPN subfield equal to 0, or
* Is reserved otherwise.

**TGba Editor: *Change the paragraphs below of this subclause as follows (#CID 883):***

The Misc field of the broadcast FL WUR Wake-up frame*(#883)* contains the Group Addressed BU subfield and Reserved subfield as defined in Table 9-963e (Misc field of broadcast WUR Wake-up frame).

|  |  |  |
| --- | --- | --- |
|  | B0 | B1                B2 |
|  | Group Addressed BU | Reserved |
| Bits: | 1 | 2 |
| * Misc field of broadcast WUR Wake-up frame
 |

The Group Addressed BU subfield is set to 1 when an AP has buffered group addressed BU(s). Otherwise, the Group Addressed BU subfield is set to 0.

**TGba Editor: *Change the paragraphs below of this subclause as follows (#CID 1074, 719):***

The Frame Body field of the VL WUR Wake-up frame contains one or more STA Info fields and is not present in a FL WUR Wake-up frame. The format of the STA Info field is defined in Figure 9-963f (STA Info field format). *(#1074, 719)*

|  |  |  |
| --- | --- | --- |
|  | B0          B11 | B12                B15 |
|  | WUR ID | Reserved |
| Bits: | 12 | 4 |
| * STA Info field format
 |

The WUR ID field is defined in Table 9-533b (Identifiers of WUR frames).

3.4 Abbreviations and acronyms

**TGba Editor: *Insert the following acronym definitions (maintaining alphabetical order) (#CID 1025, 718, 787, 459):***

FL fixed length*(#718)*

VL variable length*(#718)*

PPN partial packet number*(#1025)*

WUR ID wake up radio identifier*(#787, 459)*

**31.3.1 General**

**TGba Editor: *Change the paragraphs below of this subclause as follows (#CID 789, 401):***

The Address field of WUR frames contains an identifier (ID) that is selected from the range 0 to 4095. A WUR AP ensures that each identifier is either a transmit ID, (see 31.3.2 (Transmit ID)), a group ID (see 31.3.3 (Group ID)), or a WUR ID (see 31.3.4 (WUR ID)).*(#789, 401)*