### IEEE P802.11Wireless LANs

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| 11ba D1.0 MAC Comment Resolution for WUR Beacon and Synchronization Part II |
| Date: 2018-11-11 |
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Abstract

This submission proposes resolutions for comments of TGba Draft D1.0 with the following CIDs:

843, 1232, 176, 521, 1103, 1104, 818, 1163, 74, 75, ~~76,~~ 457, 758

Revisions:

* Rev 0: Initial version of the document.
* Rev 1: Revision based on the discussion during the presentation. Remove CID 76 for further discussion.

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 D1.0 Draft. This introduction is not part of the adopted material.

***Editing instructions formatted like this are intended to be copied into the TGba D1.0 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** | **Clause** | **Comment** | **Proposed Change** | **Resolution** |
| 843 | Po-Kai Huang | 34.38 | 9.4.2.275 | Due to the introduction of FDMA, WUR operating class field and WUR Channel field should indicate the operating class and channel in use for transmitting WUR Beacon frame from the WUR AP to the WUR non-AP STA. | Revise the sentence as suggested in the comment. | Revised – Agree in principle with the commenter. We clarify that the indication is for the transmission of WUR Beacon frame. TGba editor, please make changes as shown in doc 11-18/1903r1 under all headings that include CID 843. |
| 1232 | Yunsong Yang | 34.43 | 9.4.2.275 | How will the WUR FDMA operation affects the description of the WUR Channel field here, considering that in WUR FDMA operation, different non-AP STA may get their WUR frames from difference channels? | Please clarify. | Revised – Agree in principle with the commenter. We clarify that the indication is for the transmission of WUR Beacon frame. TGba editor, please make changes as shown in doc 11-18/1903r1 under all headings that include CID 843. |
| 176 | Bin Tian | 34.43 | 9.4.2.275 | "The WUR Channel field indicates the channel in use for transmission of WUR frame from the WUR AP to the WUR non-AP STA". WUR channel field, may be better named as WUR beacon channel field. And needs to clarify that channel is used to transmit beacon instead of WUR frame which can be on a different channel in FDMA case | as in the comment | Revised – Agree in principle with the commenter. We clarify that the indication is for the transmission of WUR Beacon frame. TGba editor, please make changes as shown in doc 11-18/1903r1 under all headings that include CID 843. |
| 521 | Lei Huang | 34.38 | 9.4.2.275 | The operating class and channel in use for transmission of WUR Discovery frame is not defined in WUR Operation element | change"The WUR Operating Class field indicates the operating class in use for transmission of WUR frame from the WUR AP to the WUR non-AP STA."to"The WUR Operating Class field indicates the operating class in use for transmission of WUR frame except WUR Discovery frame from the WUR AP to the WUR non-AP STA."change"The WUR Channel field indicates the channel in use for transmission of WUR frame from the WUR AP to the WUR non-AP STA."to"The WUR Channel field indicates the channel in use for transmission of WUR frame except WUR Discovery frame from the WUR AP to the WUR non-AP STA." | Revised – Agree in principle with the commenter. We clarify that the indication is for the transmission of WUR Beacon frame. TGba editor, please make changes as shown in doc 11-18/1903r1 under all headings that include CID 843. |
| 1103 | Xiaofei Wang | 34.44 | 9.4.2.275 | Does the WUR Channel field indicates the WUR primary channel or the WUR channel on which the AP transmits a WUR frame to the non-AP STA? It is not clear from the spec text. It seems to make more sense if the WUR primary channel is indicated here. | please clarify in the spec | Revised – Agree in principle with the commenter. We clarify that the indication is for the transmission of WUR Beacon frame. TGba editor, please make changes as shown in doc 11-18/1903r1 under all headings that include CID 843. |
| 1104 | Xiaofei Wang | 34.42 | 9.4.2.275 | Does the WUR Operating class field indicates the operating class of the WUR primary channel or the WUR channel on which the AP transmits a WUR frame to the non-AP STA? It is not clear from the spec. It seems to make more sense if the WUR primary channel is indicated here. | please clarify in the spec | Revised – Agree in principle with the commenter. We clarify that the indication is for the transmission of WUR Beacon frame. TGba editor, please make changes as shown in doc 11-18/1903r1 under all headings that include CID 843. |
| 818 | Peter Loc | 34.43 | 9.4.2.275 | The WUR Channel needs more accurate definition | Change this pagraph to the following "The WUR Channel field indicates the channel in use for transmission of WUR frame from the WUR AP to the WUR non-AP STA. The combination of the WUR operating class and WUR channel field are used to determine the channel number in the context of the operating class, as shown in 9.4.1.22 (Operating Class and Channel field)." | Revised – Agree in principle with the commenter. TGba editor, please make changes as shown in doc 11-18/1903r1 under all headings that include CID 818. |
| 1163 | yujin noh | 34.49 | 9.4.2.275 | add reference subclause corresponding to TWBTT. If not, add explaination what TWBTT is | as in comment | Revised – Agree in principle with the commenter. TGba editor, please make changes as shown in doc 11-18/1903r1 under all headings that include CID 1163. |
| 74 | Alfred Asterjadhi | 34.20 | 9.4.2.275 | If the Operating Class and the Channel fields can be different compared to the PCR equivalents then also the BSSID can be different. Suggest adding the option for the AP to indicate the presence of the WUR BSSID. | As in comment. | Rejected – We do not need to indicate a different BSSID because the calculation of FCS is always based on associated BSSID, which the STA already knows.  |
| 75 | Alfred Asterjadhi | 34.52 | 9.4.2.275 | Need to specify explicitly what the offset is relative to. | As in comment. | Revised –Agree in principle with the commenter. TGba editor, please make changes as shown in doc 11-18/1903r1 under all headings that include CID 75. |
| ~~76~~ | ~~Alfred Asterjadhi~~ | ~~35.15~~ | ~~9.4.2.275~~ | ~~Is it the current value or the most recent value? What if the broadcast WUR frame was sent a minute ago with value 3 and the current value is 4. Which one would it be?~~ | ~~As in comment.~~ | ~~Revised –~~~~Agree in principle with the commenter. Based on the operation, a STA is supposed to remember the most recent value. As a result, we change the description to most recent value.~~ ~~TGba editor, please make changes as shown in doc 11-18/1903r1 under all headings that include CID 76.~~ |
| 457 | John Buffington | 34.48 | 9.4.2.275 WUR Operation Element | WUR Beacon Period field units are not defined. | The time units (TUs) for this field needs to be defined or clearly referenced. | Rejected – TUs is a general term defined in the baseline as follows.*time unit (TU): A measurement of time equal to 1024 µs.* |
| 758 | Nehru Bhandaru | 34.52 | 9.4.2.275 | Offset of Target Wake-up radio Beacon Transmission Time... Is that offset relative to the frame in which WUR operation element appears? It might be better to something like a partial TSF so one does not have to update it every frame containing the element | Use partial TSF from Figure 9-618 ..Calculation of Partial TSF Timer field from TGmd D1.5 | Revised –Agree in principle with the commenter. We have revised the sentence to clarify the relative point of the offset. TGba editor, please make changes as shown in doc 11-18/1903r1 under all headings that include CID 75. |

**Discussion:** *None.*

**Propose:** Revised for CID 843, 818, 1163, 75, per discussion and editing instructions in 11-18/1903r1.

***TGax editor: Change 9.4.2.275 WUR Operation element to IEEE 802.11 as follows: (Track change on)***

* WUR Operation element

The WUR Operation element contains the set of parameters necessary to support the WUR operation. The format of the WUR Operation element is defined in Figure 9-751g (WUR Operation element format).

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Element ID** | **Length** | **Element ID Extension** | **Minimum Wake-up Duration** | **Duty Cycle Period Units** | **WUR Operation class** | **WUR Channel** | **WUR Beacon Period** | **Offset of Offset of Target Wake-up radio Beacon Transmission Time (TWBTT)Target Wake-up Radio Beacon Transmission Time (TWBTT)** |
| Octets: | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 2 | 2 |

|  |  |
| --- | --- |
|  |  |
|  | **WUR parameters** |
| Octets: | 1 |
| * WUR Operation element format
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The Element ID, Length, and Element ID Extension fields are defined in 9.4.2.1 (General).

The Minimum Wake-up Duration field indicates the minimum on duration of the WUR duty cycle operation (see 31.5 (WUR duty cycle operation)) in units of 256 µs.

The Duty Cycle Period Units field indicates the basic unit of the period of the WUR duty cycle operation (see 31.5 (WUR duty cycle operation)). The granularity of the Duty Cycle Period Units field is 4 µs.

The granularity of the Duty Cycle Period Units field is 4 .

The WUR Operating Class field indicates the operating class values as defined in Annex E(#818) in use for transmission of WUR Beacon frames(#843) from the WUR AP to the WUR non-AP STA. The operating class is interpreted in the context of the country specified in the Beacon frame.(#818) The encoding is the same as the definition of Operating Class field in 9.4.1.22 (Operating Class and Channel field)

The WUR Channel field indicates a channel number, which is interpreted in the context of the indicated operating class, as defined in Annex E(#818) in use for transmission of WUR Beacon frames(#843) from the WUR AP to the WUR non-AP STA. The encoding is the same as the definition of Channel field in 9.4.1.22 (Operating Class and Channel field).The WUR Beacon period field represents the number of time units (TUs) between consecutive target WUR beacon transmission times (TWBTTs) (see 31.4.2 (WUR Beacon generation)).(#1163)

The Offset of Target Wake-up radio Beacon Transmission Time (TWBTT) field indicates the TWBTT, which has the smallest TSF time (#75) in units of TU (#75) (see 31.4.2 (WUR Beacon generation)).(#1163)

The format of the WUR Parameters field is defined in Figure 9-751h (WUR Parameters field format).

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| --- | --- | --- | --- |
|  | B0          B3 | B4 | B5                    B7 |
|  | Counter | Common IPN | Reserved |
| Bits: | 4 | 1 | 3 |
| * WUR Parameters field format
 |

The Counter field indicates the current value of the Counter subfield included in the broadcast WUR Wake-up frames.

The Common IPN filed indicates if a common IPN is used for all protected WUR frames generated within the BSS (see 31.8.3 (Generation and construction of IPN for WUR frames)).